Inflation Targeting: Experiences from Emerging Southeast Asian Countries and Policy Implications for Vietnam

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To my parents

Phạm Văn Chương (Father) and Diệp Thị Dần (Mother)

Thank you for everything. Without you, I might not be the person I am today.

To my husband and child

Nguyễn Hữu Đại (husband) and Nguyễn Minh Trang (daughter)

Thank you for giving me happiness, strength and being the light of my life.

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List of Abbreviations

AFC	Asian financial crisis
ASEAN	Association of Southeast Asian Nations
BI	Bank Indonesia
BIS	Bank for International Settlements
BOT	Bank of Thailand
BSP	Bangko Sentral ng Pilipinas (the central bank of the Philippines)
CIs	Credit institutions
FX	Foreign exchange
GFC	Global Financial Crisis
GSO	General Statistics Office of Vietnam
IMF	International Monetary Fund
IT	Inflation targeting
NA	National Assembly
OMOs	Open market operations
SBV	State Bank of Vietnam
WB	World Bank

Chapter 1. Introduction

1.1. Motivation

In history, three main monetary policy frameworks have emerged: exchange rate targeting, monetary targeting, and inflation targeting (IT). Among them, IT has gained preference among an increasing number of countries (Agénor and da Silva, 2019). Specifically, IT was initially implemented in New Zealand in 1990, and then adopted by numerous emerging and developing economies (Arsić et al., 2022). In essence, IT is a monetary policy strategy aimed at price stability and brings many benefits to economies compared to other regimes (Mishkin, 2000; Truman, 2003; Fratzscher et al., 2020; Arsić et al., 2022). Specifically, in contrast to an exchange rate targeting regime, the IT strategy lets monetary authorities concentrate on domestic issues and timely react to economic shocks. Besides, in opposition to the monetary targeting regime, the success of IT does not require a stable linkage between the money supply and the inflation rate but utilizes all available data to make the best decision on monetary policy instruments (Mishkin, 2000). Additionally, IT is especially beneficial for emerging countries because it can help build up credibility via commitments, requirements of high transparency, and accountability, so it contributes to anchoring inflation expectations, thereby enhancing the efficacy of monetary policy (Capistrán and Ramos-Francia, 2010; Güler, 2021). Meanwhile, some argue that IT is too strict because it focuses only on price stability goals, which can restrain economic growth (e.g., Blanchard, 2003). However, the actual operation of IT indicated that concerns about the shortcomings of the IT framework were unreasonable. Indeed, in practice, almost all countries follow the flexible IT regime, which is the opposite of the strict IT regime (Ciżkowicz-Pękała et al., 2019). Accordingly, the flexible IT framework lets central banks concentrate on price stability as the primary goal while still considering the real economy's stability (Svensson, 2010; Schmidt-Hebbel and Carrasco, 2016). Therefore, given the outstanding benefits of the IT framework, as reported by the IMF (2023a), 45 countries have pursued the IT regime, and this number is expected to increase in the future. Notably, 34 of them are developing and emerging countries.

While many countries choose IT as an effective framework, Vietnam is still struggling with its current monetary targeting strategy. More precisely, Vietnam's monetary policy is a combination of monetary targeting and implicit exchange rate targeting because the authorities officially announce the annual targets for money supply and credit growth to attain the price

stability objective while de facto adopting a soft pegged exchange rate regime[1]. However, this monetary policy framework reveals many limitations, making the SBV's policy implementation less effective (IMF, 2019b). Besides, many studies show that a more flexible exchange rate regime is better for Vietnam because its current pegged regime requires the Vietnamese authorities to have a large foreign reserve buffer and subject the country to speculative attack, faces difficulty in controlling the exchange rate in the case of enormous capital flow, heighten the potential for a financial crisis (Mai, 2007; Obstfeld et al., 2017; IMF, 2022e). Moreover, Vietnam is integrating more and more deeply into the global financial market and must loosen the capital flow restrictions. Therefore, given a certain degree of capital openness, a more flexible exchange rate regime can allow Vietnam to focus on containing inflation. Meanwhile, regarding monetary targeting, this regime faces the problem of the unstable connection between money supply and inflation and growth, which causes an ineffective monetary policy in Vietnam. At the same time, along with the liberalization of financial markets, it is increasingly complex for the SBV to control all components of money aggregate (To et al., 2012; Pham, 2016). Consequently, the ineffective monetary policy framework is one of the main reasons why Vietnam's inflation rate is significantly higher and more volatile than that of other Southeast Asian countries (particularly between 2008 and 2011). More specifically, although most countries' inflation rates increased sharply in 2008 due to a surge in global food and oil prices, inflation in Vietnam was still too high compared to other Southeast Asian countries. Accordingly, Vietnam's inflation in 2008 reached 23.12%, more than two times higher than the average inflation rate of the ASEAN region. Not only that, when inflation in other Southeast Asian countries was stable at around 4-5% in 2011, but inflation in Vietnam was still elevated at 18.68%. Since 2014, while inflation in Vietnam has shown increased stability, it remains essential to exercise caution in the face of inflationary pressures amid global instability. Indeed, the recent rise of inflation in many countries since mid-2022 underscores the importance of maintaining focus on price stability. Besides, despite average inflation in 2022 staying below 4% in Vietnam, inflation dynamics demonstrate the significant influence of inertia on inflation and the enduring impact of shocks, reflecting the characteristics of the lack of a clear IT mechanism and past high inflation (IMF, 2022e). In particular, while headline inflation in 2023 started to decrease after the spike at the end of 2022, the high core inflation decreased very slowly and remained persistent at 4-5%.

[1] IMF classified Vietnam as an exchange rate-targeting country.

Against that backdrop, IT strategy is considered a worthy option for many developing and emerging countries (including Vietnam) to reach and maintain price stability, thereby building monetary authorities' credibility. Besides, along with IMF support, Vietnam is trying to modernize its monetary policy framework to pave the way for IT implementation (IMF, 2019b; IMF, 2022e). However, the successful application of an IT framework is not straightforward. Therefore, it is necessary for Vietnam (also for other emerging countries intending to adopt IT) to learn from the experiences of other countries in adopting and implementing this framework. In this regard, three Southeast Asian countries, namely Indonesia, the Philippines, and Thailand, have pursued IT and achieved positive results. Thus, their lessons on IT will be precious for Vietnam and other emerging countries.

Furthermore, while there are some works on IT applications, most focus on developed and developing countries in Latin America and Europe. Meanwhile, comprehensive studies on the IT framework (e.g., preparation, implementation, and development of IT) of Southeast Asian countries, thereby assessing the IT applicability and providing policy implications for other emerging countries, especially Vietnam, are limited. Moreover, research on a roadmap for implementing the IT framework in Vietnam is even scarcer, and the possibility of successful IT applications in this country remains controversial. Therefore, the dissertation is expected to shed more light on these issues. Also, it will serve as a worthy reference for other emerging and developing countries that desire to apply IT or have already begun to apply IT but still face difficulties in implementation.

1.2. Literature Review

Concerning the topic of inflation targeting, there are numerous aspects to study about this framework. Among them, this dissertation focuses on literature about preconditions to adopt the IT strategy, the experience in fulfilling the prerequisites and implementing the IT framework of developing and emerging countries.

- **Studies on the IT framework of the emerging countries**

A considerable amount of literature investigated the necessary preconditions to apply the IT framework and stated some challenges for emerging countries to conduct the IT strategy. For example, Gómez et al. (2002) suggested some conditions that must be fulfilled in conducting the IT regime, namely central bank independence and accountability, a floating exchange rate regime, and periodic inflation reports. Besides, several studies focused on the role of

institutional autonomy of central banks as well as the capability of forecasting and modeling the inflation movement in successfully introducing the IT regime (e.g., Islam and Uddin, 2011). However, whether countries need to meet mentioned prerequisites before IT application is a controversial issue. Specifically, a series of studies on country experiences in satisfying the preconditions at the time of the IT introduction have been conducted. Among them, the paper of Batini and Laxton (2007) investigated four groups of preconditions to apply the IT regime effectively, including (i) technical infrastructure, (ii) financial system, (iii) institutional independence of central banks, and (iv) economic structure with a survey for 21 inflation-targeting countries (i.e., 13 emerging countries and 8 industrial countries) and 10 non-inflation-targeting countries. Their findings stated that no country met all preconditions at the time of the IT introduction, but these conditions were significantly improved after several years of IT adoption. Particularly, apart from the commitment to price stability as the primary objective of monetary policy, the long list of prerequisites for applying IT effectively may not be required for emerging countries at the time of IT introduction (Batini and Laxton, 2007). Similarly, Agénor and da Silva (2019) listed four conditions for IT application (i.e., absence of exchange rate targeting in practice; central bank autonomy and absence of fiscal dominance; transparency and accountability, and sound financial system) but they mentioned that some countries did not meet prerequisites at the time of IT adoption (e.g., in Turkey and Brazil). Meanwhile, Ötker-Robe and Freedman (2009) studied the experience of 8 inflation-targeting countries and concluded that there is not mandatory to meet a stringent set of prerequisites before adopting IT, but there are some conditions that most countries satisfied at the outset of IT including central bank instrument independence, price stability as the primary objective, absence of fiscal dominance, reasonable control of policy instruments, and a reasonable level of financial market development. Notably, Ötker-Robe and Freedman (2010) concluded that the following three prerequisites are most advocated by researchers for IT adoption in an emerging country: (i) priority of the inflation objective as the ultimate goal of monetary policy, (ii) no fiscal dominance, and (iii) the instrument freedom for the central bank, the other requirements debated in the literate are not the mandatory prerequisites for IT adoption but should be enhanced during IT implementation. Besides, Schmidt-Hebbel and Carrasco (2016) recommended that emerging and developing countries should satisfy a minimum level of preconditions for IT introduction.

In addition to satisfying the premise conditions of the IT regime, emerging and developing countries face more challenges than advanced countries in implementing IT (Mishkin, 2008; Schmidt-Hebbel and Carrasco, 2016) for the following reasons. Specifically, central banks in

emerging countries are less independent and have weaker accountability than central banks in advanced countries (Mishkin, 2004; Mishkin, 2008). Moreover, most emerging countries have shallow financial markets and lack technical capabilities (Batini and Laxton, 2007). At the same time, emerging economies are very sensitive to commodity price shocks, have a high level of dollarization, and have a high degree of exchange rate pass-through (Mishkin, 2008; Schmidt-Hebbel and Carrasco, 2016). However, despite these challenges, many emerging countries have successfully adopted the IT regime, and more and more emerging countries are pursuing this strategy. This proves the great benefits and attraction of the IT framework for developing and emerging countries. In this context, some studies have been conducted to explore the practical difficulties in pursuing the IT regime and the underlying reasons for the success of these countries. Particularly, Jonas and Mishkin (2003) gave an overview of the IT framework of three transition economies, including the Czech Republic, Poland, and Hungary. Ötker-Robe and Freedman (2009) examined the motivation for IT, the fulfillment of preconditions at the time of IT introduction, the transition process toward IT, and the benefits gained by applying IT and lessons learned from some countries (i.e., Canada, Chile, Czech Republic, Israel, Hungary, Poland, Turkey, and Romania). Ciżkowicz-Pękała et al. (2019) studied the evolvement and challenges of IT framework in advanced countries and some emerging countries (e.g., Hungary, Turkey, Czech Republic, Sweden). Especially, most of the above research investigates the international experience of European countries and Latin American developing countries in meeting the prerequisite of IT adoption and implementing IT, while studies on the experience of Asian countries in this issue are not much. In terms of the Southeast Asia region, there are some studies examining IT adoption and implementation but primarily for specific individual countries (e.g., Kenward (2013), Juhro and Goeltom (2015), Warjiyo (2022) for Indonesia; Dacio and Cruz (2012), Dakila Jr (2022) for the Philippines; Grenville and Ito (2010), Taguchi and Wanasilp (2018) for Thailand). Therefore, a more comprehensive and detailed study of the IT framework in Southeast Asian countries is necessary to provide holistic lessons for other developing and emerging countries, especially in Asia.

- **Studies on the IT framework for Vietnam**

In the case of Vietnam, research on monetary policy for Vietnam mainly focuses on the policy transmission mechanism, effectiveness of monetary policy on the economy, or determinants affecting inflation **(**e.g., Bhattacharya, 2014; Anwar and Nguyen, 2018; Nguyen et al., 2019; Tien, 2021; Nguyen et al., 2022). Meanwhile, so far very few papers assess the IT applicability

and specific plans for Vietnam toward IT. Particularly, two notable studies on the IT framework for Vietnam to date are To et al. (2012) and Hanh (2019) but both have some limitations.

Specifically, To et al. (2012) summarized the international studies on the IT strategy, evaluated Vietnam's monetary policy in the period 2000- 2010, and assessed Vietnam's ability to apply the IT framework. Accordingly, the authors concluded that Vietnam was not ready to move to IT for two reasons: (i) the countries that were studied adopted IT when their inflation was low and controlled, while Vietnam's inflation in the period of 2000-2010 was high and very complicated, and (ii) compared to the countries considered, Vietnam's satisfaction of the prerequisite conditions for IT application was still weak and unlikely to improve in the short term (e.g., the SBV did not have the autonomy to decide on the money aggregate plan and had to wait for the government's decision; the government fiscal balance was a severe deficit). However, both arguments are no longer true and require reconsideration. Specifically, regarding the first reason, although inflationary pressures remain, Vietnam's inflation rate has gradually improved to below 4% since 2015. Regarding the second reason, from 2011 until now, Vietnam's monetary policy and institutional, economic, and financial conditions in Vietnam have undergone significant changes. For example, the Resolutions of the government and the National Assembly have emphasized the goal of price stabilization more than before. At the same time, the SBV has strengthened de facto instrument independence and has had the de facto autonomy to decide money supply target each year since 2013; a new exchange rate regime has been implemented since 2016 to support the monetary policy reform, and the government's fiscal status also has been improved. Moreover, the countries chosen by the authors as the basis for assessing IT applicability in Vietnam are developed countries (i.e., Canada, Czech Republic, New Zealand, Israel), developing and emerging countries in Europe (i.e., Poland, Hungary, Turkey …), and Latin America (i.e., Brazil, Chile). In fact, this choice is unreasonable because those countries do not have many similarities with Vietnam, which can lead to inaccurate and unreliable conclusions about Vietnam's IT applicability. Hence, their statement that "Vietnam cannot immediately introduce an IT regime" would be incorrect. In other words, it is necessary to reassess monetary policy and the ability for IT adoption in Vietnam.

Concerning the paper of Hanh (2019), the author found a weak and unstable link between monetary policy tools and inflation and concluded that "Vietnam is not yet ready to adopt IT." However, this conclusion may not be correct for some reasons. First, recent literature did not mention "a close and stable relationship between monetary policy tools and inflation" in the list of mandatory prerequisites before IT adoption (e.g., see Jahan, 2012; Agénor and da Silva,

2019; Ciżkowicz-Pękała et al., 2019). In fact, IT countries that did not fulfill this requirement before starting IT can do so after IT application (Meerza, 2020). Therefore, this condition should not be an obstacle to rejecting IT. Second, even if we accept this condition as a mandatory requirement, the monetary policy instruments chosen by Hanh (2019) (i.e., nominal exchange rate, money supply, and refinancing rate) to assess Vietnam's IT applicability are also problematic. More specifically, under the IT regime, the exchange rate will be gradually flexible and support price stability rather than acting as a fixed tool, as in the exchange rate targeting regime. In fact, Hanh (2019) used data from 2000: Q1 to 2016: Q1, when most of that period, Vietnam still applied the old exchange rate mechanism that was highly rigid (e.g., only changed a few times a year). Meanwhile, Vietnam has employed the new exchange rate regime since 2016 Q1. Regarding the money supply variable, a stable relationship between money supply and inflation is a required prerequisite of the monetary targeting regime, not the IT regime. As for the interest rate variable, which will be the key tool under IT, the author employed the refinancing rate. Although the refinancing rate is currently listed as the SBV's policy rate, it is not the most effective and preferred interest rate tool of the SBV. In fact, the OMOs and the 7-day bid rate in OMOs are the most critical and influential monetary policy tools of the SBV at the moment[2]. Therefore, the fact that Hanh (2019) chooses the refinancing rate as the core tool variable to analyze the relationship between policy tools and inflation can lead to incorrect conclusions. Given all these issues, the author's statement that "Vietnam is not a candidate for an IT regime yet" could be a mistake.

As such, the issues of whether Vietnam can shift to the IT regime, a roadmap toward IT, and policy recommendations for implementing IT must be studied more clearly. Besides, as mentioned above, research on the experiences of Southeast Asian countries in applying and developing the IT framework to draw lessons for other emerging countries, especially Vietnam, is limited. Hence, the dissertation is made to contribute to the literature on these issues. First, by comparing the fulfillment of core preconditions for the IT regime of Vietnam with three IT Southeast Asian countries (i.e., Indonesia, the Philippines, and Thailand) at the time of IT adoption, the study will answer whether Vietnam can apply the IT regime. Second, the study investigates the experience of these countries in preparing, implementing, and refining the IT framework to give policy lessons for other emerging countries, particularly Vietnam. Third, based on comparisons and assessments of the current monetary policy framework of Vietnam with the current IT frameworks of three Southeast Asian countries, the study finds out the gaps

[2] See Details in Chapter 3.

between Vietnam compared to three IT countries and gives policy implications for Vietnam to upgrade during IT implementation. Fourth, the study sets out a roadmap and specific tasks for Vietnamese authorities on the path toward the IT framework and subsequent IT implementation.

1.3. Aim of the Study and Research Questions

This dissertation aims to evaluate the motivation for IT, the applicability of IT in Vietnam, and lessons for IT implementation for emerging and developing countries, especially Vietnam, based on the experience from three IT Southeast Asian countries and comparison with Vietnam, and finally, to propose a roadmap for Vietnam toward an IT framework. Based on these issues, the research questions posed are:

Research Question 1: Is it necessary for Vietnam to transition to an IT framework?

Research Question 2: How is the current fulfillment of preconditions for IT in Vietnam? Can Vietnam apply an IT framework?

Research Question 3: What are the policy implications for Vietnam to prepare and implement an IT framework from the experience of three IT Southeast Asian countries?

Research Question 4: What are the roadmaps and specific tasks for Vietnamese authorities to move toward IT adoption?

To answer the above questions, the dissertation:

- Systematizes the basics of IT for emerging and developing countries (i.e., key components and features, advantages, and disadvantages, preconditions for application, challenges, and difficulties in applying IT).

- Evaluates Vietnam's economic development and monetary policy framework from 2000 to early 2023.

- Analyze the achievements and limitations of the monetary policy framework in Vietnam, thereby drawing out the motivations for applying an IT regime.

- Assesses the current conditions of Vietnam and the degree of fulfillment of the prerequisites for IT application in Vietnam compared to the three Southeast Asian IT countries at the time of their IT application, thereby concluding the possibility of IT adoption in Vietnam.

- Studies the experience in preparing, implementing, and developing inflation targeting framework of three IT Southeast Asian countries (including Indonesia, the Philippines, and Thailand), to draw practical lessons.

- Compares the current monetary policy framework and performance of Vietnam with the existing IT framework of the three Southeast Asian countries, to provide policy implications for Vietnam in the IT implementation process to catch up with the framework of the three Southeast Asian countries.

- Outlines a roadmap and specific tasks for Vietnamese authorities toward IT framework from preparation to implementation.

1.4. Methodology

To address the above research matters, the dissertation uses traditional methods such as statistical analysis, interpretation, comparison, synthesis, link theory with practices, and evaluation based on collected data on economic indicators, and monetary policy variables (e.g., economic growth, inflation, exchange rates, interest rates). In addition, the study employs evidence on the application of IT frameworks in emerging and developing countries by case study method. Furthermore, the comparative method is thoroughly applied to assess the situation of Vietnam compared to the three inflation-targeting Southeast Asian countries, thereby providing policy implications.

More specifically, firstly, based on the method of synthesis, data collection, and analysis, the issues about achievements and shortcomings of Vietnam's monetary policy framework and the motivation to apply IT are answered. The issues analyzed focus on macroeconomic performance, characteristics, and development of the monetary policy framework in Vietnam.

Secondly, by the method of reviewing the literature, the study summarizes the core preconditions for IT application in emerging and developing countries, to serve as a basis for the criteria for assessing IT applicability in Vietnam.

Thirdly, based on the comparative method, the study utilizes the average performance of three IT Southeast Asian countries (which have many similarities with Vietnam) in meeting the preconditions of IT as a standard in comparison to the current conditions of Vietnam, for addressing the question of whether Vietnam can apply IT.

Fourthly, based on a case study approach, the implementation and development of the IT framework of inflation-targeting countries in Southeast Asia are carefully examined to give lessons for other emerging countries. Particularly, for each country, the study offers a comprehensive description and analysis related to its IT framework, covering motivation for IT, preparation for IT, setting and fine-tuning an inflation-targeting framework (i.e., institutional arrangement, target setting, instruments for operation, models for forecasting, transparency, and accountability), policy coordination under IT (i.e., exchange rate, macroprudential policy, fiscal issues), and performance under IT.

Fifthly, based on comparative and synthetic methods, the study compares the current monetary policy framework of Vietnam and related elements to that of three Southeast Asian countries, regarding issues of legislation and central bank, operational framework, technical capacity, transparency and accountability, performance, and other objectives to find out the differences, thereby giving policy implications for Vietnam in IT implementation.

Sixth, based on evaluations and policy implications, the dissertation proposes a roadmap for Vietnam toward IT.

1.5. Structure of the Dissertation

The dissertation consists of seven main chapters. Chapter 1 gives an overview of the research including research motivation, literature review, research questions, research method orientation, and dissertation contributions. Chapter 2 provides the basics of IT as a monetary policy framework, especially for emerging and developing countries, including the core elements, advantages and disadvantages of the framework, important preconditions for the successful application of the IT framework, and challenges for emerging countries. Chapter 3 presents the developments of the monetary policy framework and performance in Vietnam, and assesses the attainments and limitations of monetary policy, thereby pointing out the need for a transition to an IT framework in Vietnam. This chapter aims to answer research question #1.

Chapter 4 gives reasons for choosing three Southeast Asian countries (Indonesia, the Philippines, and Thailand) as the standard basis for assessing Vietnam's ability to apply IT, and as case studies in Chapter 5. At the same time, based on the theoretical basis of the prerequisites for IT application in emerging and developing countries mentioned in Chapter 2, this chapter examines the IT applicability of Vietnam by comparing the extent of fulfillment to

preconditions for IT of Vietnam with that of the three IT Southeast Asian countries at the time of their IT adoption. This chapter is expected to address research question #2.

Chapter 5 presents the experiences of inflation-targeting Southeast Asian countries including Indonesia, the Philippines, and Thailand in preparing, implementing, and developing their IT framework. At the same time, Chapter 5 also examines macroeconomic performance before and after IT in these countries. Finally, this chapter draws lessons for other emerging and developing countries regarding IT adoption. Chapter 6 compares Vietnam's current monetary policy framework and other related issues with the IT framework of the three Southeast Asian countries, aiming at finding out the current gaps that Vietnam needs to upgrade to catch up with the three Southeast Asian countries, thereby implementing IT effectively. From there, it serves as the basis for policy tasks toward IT for Vietnam in Chapter 7. Furthermore, the evaluation results of chapters 5 and 6 will answer research question #3.

Chapter 7 offers policy implications and a road map toward an IT framework in Vietnam consisting of three phases: preparation, initial implementation, and development. The content of Chapter 7 intends to answer research question #4. Finally, the conclusion summarizes the main points of the study, the core findings, and the contribution of this dissertation to the existing literature.

1.6. Contribution

The dissertation contributes to the literature in four main aspects.

Firstly, the dissertation shows that IT application in Vietnam is feasible, and Vietnam can start IT with some preparations (e.g., changing the specification of the inflation target to a point target with a band, announcing the 7-day bid rate in OMOs as the primary policy rate). This finding contrasts with other studies that concluded that Vietnam cannot yet apply IT or that IT adoption was inappropriate for Vietnam at the time of their research (i.e., To et al., 2012; Hanh, 2019). More specifically, To et al. (2012) stated that inflation in Vietnam during their study period (2000-2010) was too high, and institutional conditions were too weak (e.g., low independence of the central bank, weak fiscal state of the government), making IT applications unsuitable for Vietnam. However, according to my evaluation, from 2015 until now, inflation in Vietnam has been more stable and below 4%, while the institutional conditions of the central bank and fiscal balance have also improved. As a result, the current conditions in Vietnam have become more suitable for introducing an IT framework. Regarding the study of Hanh (2019), the author argued that Vietnam is not a candidate yet for IT because Vietnam has not satisfied

the precondition of a stable and predictable link between policy tools and inflation. However, this condition is not mandatory before starting IT, and their choice of model variables is also unreasonable. Against this backdrop, by taking a comparative approach, my research indicates that Vietnam's current conditions are proper for introducing an IT framework.

Secondly, the study improves the research method compared to previous studies on IT issues in Vietnam. Specifically, to assess Vietnam's IT applicability and give lessons for IT implementation, the study uses the average performance in fulfilling the preconditions for IT of three IT Southeast Asian countries as the basis for evaluation. Meanwhile, other studies only make general evaluations based on essential prerequisites or the international experience summary of countries (e.g., Canada, New Zealand, Israel, Poland, Hungary, and Turkey) that do not have many similarities with Vietnam.

Thirdly, while the studies on the IT framework mainly analyze developed countries and emerging countries in Europe and Latin America, the studies on IT of Southeast Asian countries are sporadic. Therefore, this dissertation further elucidates the IT framework in emerging countries, covering IT implementation during shocks (e.g., the GFC and COVID-19 periods) through a comprehensive analysis of the IT frameworks of the three Southeast Asian countries (i.e., Indonesia, the Philippines, and Thailand), thereby providing additional valuable lessons for other emerging and developing countries (not only Vietnam) in a transition toward IT and subsequent IT implementation.

Fourthly, while studies on the IT adoption roadmap in Vietnam are scarce and mainly refer to the preparation stage aiming at fulfilling premises for IT, this dissertation proposes a more comprehensive roadmap from preparation and implementation to development and fine-tuning of a coming IT framework in Vietnam. At the same time, essential policy implications and specific tasks for each agency (i.e., the central bank, the National Assembly, and the government) are also detailed in the dissertation.

Chapter 2. Basics of Inflation Targeting in emerging countries

The IT regime was first introduced by advanced countries, but then many developing and emerging countries applied this regime in their monetary policy implementation. Specifically, New Zealand was the first country to apply IT in 1990 after previous unsuccessful attempts to control inflation (McDermott and Williams, 2018). However, a growing number of emerging and developing nations have employed the IT framework since the late 1990s, and these countries now account for a vast majority of inflation targeters (IMF, 2023a). Based on this fact, this chapter gives an overview of the IT regime, especially for emerging countries.

2.1. Key Elements

There are some definitions of IT (e.g., Bernanke et al., 1999; Mishkin, 2000), but in general, the core elements of an IT framework that are widely recognized in the literature include (i) announcing explicitly the numerical inflation targets (level or range), (ii) an institutional commitment in setting price stability as the primary objective of the monetary policy, (iii) a rational decision-making process that considers numerous economic indicators to achieve its goals, which emphasizes the role of inflation forecast as an intermediate objective of monetary policy, (iv) improving the monetary policy transparency and communication with the public, and (v) increasing the accountability of the central bank (Mishkin, 2000; Hammond, 2012; Ciżkowicz-Pękała et al., 2019).

The above list of key features of the IT regime highlights an important note for emerging and developing countries. It is that IT is not merely an announcement of the inflation target, but it asks for other vital components (Mishkin, 2000). Particularly, many emerging and developing countries, such as Vietnam, report publicly about their annual inflation targets (in the government's plan for years ahead), but they should not be classified as inflation targeters. In fact, the IT strategy requires the other four factors, as mentioned above, to ensure the stability and sustainability of this regime over the medium term (Mishkin, 2000). Significantly, the IT regime employs a set of information including many economic variables (not just money aggregate or exchange rate) to decide monetary policy responses in a forward-looking strategy (Mishkin, 2000; Ciżkowicz-Pękała et al., 2019). Additionally, transparency and accountability are other integral components of IT that play a vital role in building credibility for the central bank, reinforcing the IT framework's efficacy (Freedman and Laxton, 2009; Agénor and da Silva, 2019; Ciżkowicz-Pękała et al., 2019).

Moreover, most central banks implement flexible IT rather than strict regimes (Schmidt-Hebbel and Carrasco, 2016; Ciżkowicz-Pękała et al., 2019). That is, besides considering inflation objectives as the primary goal of monetary policy, central banks also consider real economic stability in their decision-making process (Svensson, 2010). Meanwhile, a strict IT regime focuses solely on the inflation target and tries to achieve it at all costs, which can have undesirable effects on growth, employment, and financial stability (Svensson, 2010; Ciżkowicz-Pękała et al., 2019). Therefore, practice shows that the IT framework implies a flexible regime. Accordingly, central banks will pursue the medium-term inflation target with a policy horizon rather than a short-term target.

2.2. Advantages and Disadvantages of IT

Every monetary policy regime has its advantages and disadvantages. Mishkin (2000) stated that although IT is not a panacea, it is indeed a useful policy in many emerging countries. Likewise, Batini et al. (2005) pointed out the prominence of IT over other alternative regimes (i.e., monetary targeting and exchange rate targeting)[3], especially for emerging markets. Furthermore, most empirical evidence—though not all—indicates that the IT framework is effective in delivering low inflation, reducing inflation volatility, and shaping inflation expectations (e.g., Fratzscher et al., 2020; Arsić et al., 2022). Notably, these performances were attained without negatively impacting output or interest volatility (Huang et al., 2019).

2.2.1. Advantages

Advocates of IT assert numerous advantages of this monetary policy framework over other operating mechanisms (e.g., Mishkin, 2000; Truman, 2003; Fratzscher et al., 2020; AI Rasasi and Cabezon, 2022). Remarkably, in contrast to an exchange rate targeting regime, IT allows monetary authorities to focus on domestic matters and respond promptly to economic shocks. Moreover, unlike the monetary targeting regime, the success of IT does not hinge on a stable link between money supply and inflation. Instead, IT explicitly and directly targets inflation, contributing to a more effective regime compared to other approaches that indirectly aim for the inflation target by targeting intermediary variables (e.g., exchange rates or monetary aggregates) (AI Rasasi and Cabezon, 2022).

Moreover, as mentioned above, IT asks for an increased degree of central bank transparency and accountability, which contributes to establishing credibility for monetary policy (Mishkin,

[3] See Box 4.1 in Batini et al. (2005)

2000; Batini and Laxton, 2007; Ciżkowicz-Pękała et al., 2019). This aspect is particularly essential for emerging economies where monetary policy credibility is often weak. Indeed, transparency allows people to have a clear understanding and sufficient information to monitor the central bank's actions through regular reports about the operation, inflation outlook, and other macroeconomics variable development, as well as via clear and timely communication on monetary policy, thereby building public confidence in the central bank policy (Carare et al., 2002; Svensson, 2010; Agénor and da Silva, 2019). Meanwhile, high accountability gives the central bank more incentive to attain the pre-announced inflation target, helping reinforce the public's belief. Without accountability, central banks may not admit policy mistakes but blame unforeseen events or shocks. Therefore, increasing the central bank's responsibility is essential to avoid this matter. Accordingly, under IT, the central bank must be obliged to explain reasonably to the government and public any changes in monetary policy stance, any deviations from the inflation target (if have), as well as the necessary measures to bring inflation back to the target (Agénor and da Silva, 2019). These things reinforce the central bank's credibility, bolstering the effectiveness of monetary policy (Truman, 2003; Ciżkowicz-Pękała et al., 2019). Similarly, data shows that the transparency and accountability of many central banks have been enhanced significantly since their IT adoption, thereby improving their credibility (Schmidt-Hebbel and Carrasco, 2016). At the same time, explicit inflation targets combined with a solid commitment to price stability of the IT regime help anchor inflation expectations more effectively (Truman, 2003; Ciżkowicz-Pękała et al., 2019).

Also, the advantage of IT in shaping inflation expectations helps monetary authorities incur a lower economic cost than alternative regimes in responding to shocks. Amid shocks causing inflationary pressure, the central bank may raise interest rates less than the case of inflation expectations were not anchored. By doing this, losses for economic growth will be reduced. Meanwhile, alternative monetary regimes, such as a pegged exchange rate regime, can result in much larger losses, including huge FX reserve losses and a high likelihood of foreign currency-denominated debt default (Batini and Laxton, 2007). Empirical studies further substantiate this argument, highlighting the effectiveness of IT in reducing the trade-off between inflation and growth. These studies also emphasize that IT supports better macroeconomic outcomes after the shocks than other monetary regimes (Huang et al., 2019; Fratzscher et al., 2020).

In addition, under the IT regime, monetary authorities use a larger set of information and data (instead based on only money growth or exchange rate), such as economic growth, forecast

inflation, and sources of domestic and foreign shocks, to make monetary policy decisions. This makes implementing monetary policy more efficient (Ciżkowicz-Pękała et al., 2019).

Furthermore, IT brings flexibility because the inflation target is set in the medium term. In other words, the central bank commits to achieving the pre-announced inflation target within a certain time horizon (e.g., two or three years). This allows the central bank to respond to short-term economic shocks, helping to reduce output volatility while still pursuing its medium-term inflation target (Jahan, 2012). This feature of IT is particularly beneficial for emerging and developing countries, where promoting economic growth is still a crucial policy goal.

Finally, IT adoption is often accompanied by improved fiscal discipline of the governments, significant reforms in the technical capacities of the central banks, as well as the impetus to deepen financial markets in emerging and developing countries (Jahan, 2012; Minea and Tapsoba, 2014; Minea et al., 2021).

2.2.2. Disadvantages

Some opponents of the IT regime express concerns about its general drawbacks for both advanced countries and emerging countries. Firstly, the IT regime has faced criticism for being too rigid, potentially leading to restrictions on economic growth (Rivlin, 2002). However, this criticism is not entirely justified because the IT regime is far from a rigid principle; instead, it is often referred to as "**constrained discretion**" (Bernanke et al., 1999; Mishkin, 2000; Jahan, 2012). In practice, IT does not operate as a mechanical rule; rather, monetary policy decisions are based on diverse data and information. Moreover, the inflation target is customized to suit the economic and financial situation of each country, providing monetary policymakers with a certain degree of discretion. Additionally, under the flexible IT regime, monetary authorities do not overlook other traditional goals such as economic growth and employment.

Secondly, in contrast to concerns about the IT regime being too rigid, some argue that it is too discretionary, making it ineffective in shaping inflation expectations (Kumhof, 2002). However, as mentioned earlier, the monetary policy within the IT framework is indeed a "constrained discretion". While it offers considerable flexibility, the IT central bank remains highly accountable for achieving the inflation target. Accordingly, the IT strategy is aimed at low and stable inflation in the medium term, adopting a forward-looking approach rather than pursuing short-term targets. Besides, increased transparency and accountability under IT significantly contribute to anchoring inflation expectations in inflation-targeting countries.

Thirdly, critics suggest that IT can cause low economic growth and instability (Blanchard, 2003). In fact, during a disinflation period, when the central bank endeavors to reduce inflation from a high level to a moderate level, there may be temporary decreases in output and employment. Nonetheless, economic growth and employment typically rebound afterward, reaching levels at least as high as they were before (Bernanke et al., 1999; Batini and Laxton, 2007). Moreover, a low and stable inflation environment is favorable for sustainable growth (IMF, 2019b). In other words, the IT strategy does not damage the real economy.

Generally, the three disadvantages above should not be serious with a properly designed IT framework. However, some inherent features of emerging and developing countries (e.g., weak institutions, fiscal issues, and exchange rate concerns) can make them face shortcomings in adopting IT (Section 2.3) and make their IT regime more complicated during implementation (Section 2.4) than developed countries.

2.3. Prerequisites for functioning IT regime in emerging countries

In theory, many preconditions are proposed for successfully applying an IT framework, especially since the IT regime was first introduced. Initially, there were strict conditions that countries had to satisfy to ensure a successful IT regime, such as solid institutional frameworks, macroeconomic stability, a central bank with high independence, and a well-developed financial system (Masson et al., 1997). Consequently, the IT regime was primarily applied by advanced countries in its early years, while emerging countries faced challenges due to weaker institutional conditions, lower legal central bank independence, weaker technical capacity, unsustainable fiscal conditions, under-developed financial markets, inefficient commodity and labor markets, and higher pass-through coefficient from exchange rate to inflation (Mishkin, 2008; Schmidt-Hebbel and Carrasco, 2016). As a result, emerging countries were considered unsuitable to pursue the IT regime (Eichengreen et al., 1999; Schaechter et al., 2000; Agénor, 2000).

However, over time, more and more emerging countries have adopted the IT regime, surpassing the number of IT-advanced countries. Despite initially unfavorable conditions, these countries have significantly improved their economic and institutional conditions during IT application, successfully implementing this framework (Batini and Laxton, 2007; Ötker-Robe and Freedman, 2010; Schmidt-Hebbel and Carrasco, 2016). This raises the question of whether emerging countries must meet all prerequisites before adopting IT.

In practice, IMF (2014) observed that not all preconditions had to be satisfied before introducing IT, but a firm commitment to complete implementation was necessary, along with a solid legislative framework to support central bank independence, mandate, and transparency. Besides, Agénor and da Silva (2019) listed several preconditions for IT application (i.e., central bank independence, absence of exchange rate targeting, healthy financial system, transparency, and accountability). However, they acknowledged that some preconditions are not necessarily required to be met prior to IT (e.g., a sound financial system). Meanwhile, some studies suggested that an emerging country should meet a minimum set of conditions to avoid the premature introduction of the IT regime because the absence of some key prerequisites can make IT operations more difficult (Ötker-Robe and Freedman, 2009; Schmidt-Hebbel and Carrasco, 2016).

Generally, there is a high consensus in the literature that some preconditions are essential for emerging countries to adopt the IT framework, namely (i) price stability as the top priority target of monetary policy, (ii) the central bank's tool autonomy, and (iii) absence of fiscal dominance. Meanwhile, many other conditions mentioned in the literature can be improved after the IT application, such as a well-functioning transmission mechanism, adequate analytical resources, and sophisticated models for forecasting inflation, establishing accountability and transparency by issuing reports, and building up a sound and developed financial system (Ötker-Robe and Freedman, 2010; Agénor and da Silva, 2019). In other words, after the introduction of IT, central banks may gradually upgrade the missing elements and actively coordinate with the government in establishing these factors to make IT implementation less challenging.

2.3.1. Necessary preconditions

(i) Priority of Inflation Target over the other goals

It is widely agreed that the inflation target as the central bank's primary goal is essential for pursuing an IT framework. More precisely, the priority task of the central bank is to bring inflation back to the committed level or maintain it close to the target level over the policy horizon (Ötker-Robe and Freedman, 2010). The reason is that when the central bank has been bound by multiple objectives which can be in conflict, putting the inflation target on top is necessary to ensure the central bank's attempt in achieving the targeted inflation level and prevent itself from taking inconsistent policy decisions (Roger and Stone, 2005; Ciżkowicz-Pękała et al., 2019). However, concentrating the central bank's mandate on domestic price stability does not mean that the central bank ignores other goals such as economic growth and

unemployment. Nowadays, most countries tend to conduct flexible IT, which is very different from strict IT (Schmidt-Hebbel and Carrasco, 2016). To be more specific, the goal of a flexible IT regime is to aim for stability in both inflation and the real economy, while strict IT only aims at stabilizing inflation without concern about the real economy's stability (Svensson, 2010). However, given monetary policy's multiple objectives, price stability is still the top goal. In fact, a low and stable inflation rate will facilitate a favorable environment for economic development and investment in the long run (IMF, 2019b).

Moreover, the predominance of inflation objectives implies that, in principle, the countries should not commit to the specific path or level of the nominal exchange rate, like the case under a free-floating exchange rate regime (Agénor and da Silva, 2019). However, this requirement is incredibly challenging for emerging and developing countries because, in practice, these countries often pay greater attention to exchange rate stability than industrial countries do because of (i) the higher pass-through degree from exchange rate movements to price movements, (ii) fear of mismatch between liabilities and assets denoted in foreign currency, and (iii) policies for protecting export industries (Mishkin, 2004; Agénor and da Silva, 2019). Furthermore, emerging countries have less developed financial markets, so they are more vulnerable to exogenous shocks (Hofman et al., 2020). These give central banks in emerging and developing countries even more incentive to manage exchange rate. In this regard, the authorities can utilize sterilized intervention in the FX market as a second instrument to stabilize the exchange rate fluctuation, while the policy rate instrument is used for the inflation target (Ghosh et al., 2016). However, it should be remembered that simultaneously targeting two objectives can be risky in the case of conflicts between the exchange rate stabilization and the inflation objective (e.g., massive capital inflow causing exchange rate appreciation). Significantly, the central bank can lose credibility as the public will be confused about its commitment to the inflation goal. As a result, the advantages of anchoring the public's inflation expectation under IT can be gone (Ciżkowicz-Pękała et al., 2019).

Hence, a solid commitment to the inflation target as the precedence objective is very important in the IT regime, while other objectives (e.g., output, exchange rate) should serve as a supportive nature for macroeconomic stability. Regarding the exchange rate, a flexible exchange rate regime is needed to avoid confusion about the goals of the IT framework. However, the IT central banks in emerging countries still can (occasionally) intervene to smooth "excessive"

exchange rate volatilities[4], which significantly affect the inflation target or threaten the stability of the financial and economic system.

(ii) Central bank's instrument independence

It is believed that the independence of the central bank is one of the main preconditions for the functioning IT strategy (Ciżkowicz-Pękała et al., 2019). Besides, although there are some different dimensions of central bank autonomy, the requirement of pursuing an IT framework generally relates to instrument independence of the central banks, rather than goal independence (Batini and Laxton, 2007; Ötker-Robe and Freedman, 2010; Agénor and da Silva, 2019; Shuaibi, 2019).

Particularly, in principle, instrument independence helps central banks effectively and proactively operate monetary policy toward the ultimate goal of IT, which is a low and stable inflation level (Shuaibi, 2019). Furthermore, independence in actions allows the central bank to resist political pressures (Agénor and da Silva, 2019). This is especially relevant to the case of emerging countries where history recorded the government's control over monetary policy tools and the use of monetary policy for political objectives, causing high inflation rates in many countries (Ötker-Robe and Freedman, 2010). Also, from an empirical aspect, Batini and Laxton (2007) surveyed 10 non-IT emerging market central banks and 21 IT central banks to evaluate the role of prerequisites in successful IT adoption. They found that although no countries meet all so-called requirements, the majority of central banks had at least (legal) instrument independence at the outset of the IT regime. Similarly, recent empirical evidence also reinforces the significant positive effect of central bank independence on inflation reduction in emerging and developing countries (Iwasaki and Uegaki, 2017; Garriga and Rodriguez, 2020). Therefore, providing the central bank full autonomy to use monetary policy tools is crucial for functioning IT. In practice, in most IT emerging countries, the instrument autonomy of central banks is explicitly guaranteed by legal acts (Niedźwiedzińska, 2018).

Furthermore, while instrument independence of the central bank is a crucial precondition for functioning IT, goal independence is optional. Particularly, goal independence is defined as the freedom of a central bank to set the quantitative target for macroeconomic objectives (Debelle and Fischer, 1994). In fact, the targets of monetary policy should be decided by the government or via consultation between the central bank and the government, especially in emerging

[4] The issue of the exchange rate is further clarified in section 2.4.1.

countries (Batini and Laxton, 2007; Ötker-Robe and Freedman, 2010). The reason is that for emerging countries, the government's involvement in setting the inflation target will prove its support for the inflation target and a consensus for the IT regime. Besides, given the effects of the government's policies (e.g., administered prices, wage setting, taxes) on inflation outcomes, the joint target setting will increase the public's confidence in the IT regime as the government coordinates the macro policies with the central bank's monetary policy in achieving the pre-announced inflation target. Also, practice in many IT emerging countries shows that while most IT central banks have instrument autonomy, goals are often set jointly by the central bank in coordination with the government (e.g., in Armenia, Brazil, Ghana, Iceland, Indonesia, Israel, the Philippines, Romania, Serbia, Thailand, and Turkey).

(iii) No fiscal dominance

The precondition of independence of the central bank links to another requirement of IT for emerging countries which is the absence of fiscal dominance. In essence, fiscal dominance refers to the case in which fiscal considerations play a remarkable role in the implementation of monetary policy, which severely affects the performance of inflation objectives (Agénor and da Silva, 2019). For example, given the persistent budget deficit and high public debt-to-GDP ratio, the government may require the central bank to lend directly, or purchase government securities that private investors would not buy to finance the deficit. In other words, weak fiscal discipline can cause debt monetization. This makes the central bank unable to control the size of its balance sheet, thereby undermining its ability to affect the policy interest rate to control the inflation rate (Ötker-Robe and Freedman, 2010). Furthermore, the government could prevent the central bank from raising interest rates to avoid unsustainable public debt dynamics or even insolvency of government which leading macroeconomic instability (Agénor and da Silva, 2019; Ciżkowicz-Pękała et al., 2019). Under such circumstances, the central bank's autonomy would be affected, so the central bank cannot utilize its monetary instruments independently to achieve the pre-announced inflation target (Ciżkowicz-Pękała et al., 2019). Likewise, empirical evidence confirms the negative effect of the size of public debt on the likelihood of IT (Ismailov et al., 2016; Stojanovikj and Petrevski, 2019).

In addition to the central bank's obligation to finance the fiscal deficit, fiscal dominance is related to another aspect. That is the potential correlation between the interest rate policy and the perceptions in the financial market on the government's capacity to pay its debt (Favero and Giavazzi, 2005). This case is most likely to occur in emerging countries because of the short-

term feature of many emerging countries' public debt and lack of credibility (Turner, 2011). An interest rate hike would raise a concern about government debt sustainability in financial markets and then cause a growth in the risk premium on the country's debt. The matter may cause a depreciation of the domestic currency, thereby putting more pressure on the inflation rate. In other words, the desired inflation target may not be attained despite the efforts of the central bank. However, the government's commitment to discipline and sustainable fiscal policy could weaken the potential relationships between the risk premium on public debt and the interest rate movement.

Especially, a noticeable fiscal imbalance, with a high level of government deficit and public debt, is a more serious issue in many emerging markets which can cause indirect fiscal dominance under the IT regime (Mariano and Villanueva, 2006; Blommestein and Turner, 2012). The reason is that for advanced countries, the fiscal deficit is perceived as temporary thanks to high productivity, credible monetary policy, and a tremendously well-developed financial market to help absorb the public debt's placements (Mariano and Villanueva, 2006). In contrast, the issue of the fiscal deficit in emerging countries is often perceived as persistent. The awareness of the public about the unsustainable fiscal policy, in the long run, will raise the fear of future monetization of budget deficit, thereby pushing inflation expectations in emerging countries. Consequently, the risk of fiscal dominance in these countries becomes more worrisome. Similarly, empirical evidence also points to a long-run causal relationship between government expenditure and inflation in emerging countries (Nguyen, 2019). Therefore, fiscal sustainability should be considered by these countries so as not to compromise the IT framework.

To avoid fiscal dominance, legislation limiting (even prohibiting) the central bank's direct financing of the government deficit is critical. Besides, from the government side, given the role of fiscal discipline in successful IT adoption (Stojanovikj and Petrevski, 2019), the government needs to reduce large budget deficits, establish budgetary rules for public debt and spending, and enhance the quality of government expenditure, thereby contributing to fiscal sustainability and supporting IT performance.

2.3.2. Other conditions

In addition to the preconditions mentioned above, this section discusses the conditions and foundations that need continuous improvement along with the adoption of IT in emerging and developing countries, to ensure an effective IT framework.

(i) Well-functioning monetary policy transmission mechanism

Some studies argue that another requirement for adopting successful IT is a considerably effective level of monetary policy transmission mechanism (Ötker-Robe and Freedman, 2009; Misati et al., 2012). That means the central bank needs sufficient capacity to use its policy toolkit to attain the committed inflation target.

More specifically, the central bank plays a fundamental role in creating a series of influences on the economy. Therefore, the central bank must ensure that its actions affect effectively aggregate demand and inflation movement. Besides, if the central banks did not get the intended results, they must understand the reasons why the monetary transmission channels do not work well such as due to a weak banking system, an underdeveloped financial market, and/or problems with the dollarized economy (Ötker-Robe and Freedman, 2010). From this, they should address the weakness and then boost monetary policy transmission efficacy.

In fact, well-functioning monetary policy transmission is required for all monetary regimes, not just the IT strategy. From countries' experiences, Ötker-Robe and Freedman (2009) found that the transmission function of monetary policy of IT countries at the IT outset was not ideal. Still, most of them could reasonably influence short-term rates and facilitate the transmission from monetary policy actions to market interest rates. Besides, this requirement may not be mandatory for introducing IT, but it should be established during IT to make IT implementation less challenging (Ötker-Robe and Freedman, 2009). In the opposite direction, recent empirical research indicated that applying an IT framework along with the independence and transparency of the central bank has indeed played a significant role in enhancing monetary policy transmission effectiveness in emerging and developing countries (Brandao-Marques et al., 2020).

In practice, given short-term rates as the primary tool under IT, the interest rate channel is the most prominent, but other traditional channels continue to be relevant in emerging and developing countries (e.g., exchange rate, credit, and asset price channels) (Can et al., 2020). Besides, the inflation expectation channel is also significant in monetary policy transmission, especially under IT. Indeed, empirical research stated emerging and developing countries better anchored inflation expectations after IT introduction (Kose et al., 2019). Regarding monetary policy instruments, central banks in some emerging countries, where the policy interest rate does not perform well in regulating market interest rates, can use other indirect tools, such as open market operations (OMOs), in the transition to IT (Laurens et al., 2015). After that, central

banks should gradually establish an interest rate corridor (e.g., via standing facility rates) and utilize OMOs and communications to implement policy rates under the IT framework effectively.

(ii) Ability of inflation forecasting/ An adequate analytical resource includes macro–forecasting models

In addition to the ability to control monetary policy instruments to ensure a well-functioning monetary policy transmission mechanism, central banks need to have sufficient analytical resources, including a capacity of forecasting inflation (Misati et al., 2012; Ciżkowicz-Pękała et al., 2019; Shuaibi, 2019). Along with a wide range of models, data availability is also necessary to make analyses and forecasts more accurate. This is a technical infrastructure required under the IT regime (Shuaibi, 2019). For the case of emerging countries, this requirement is a challenge due to a weak technical infrastructure (i.e., a lack of database and macroeconomic models), changes in their economic and financial structures, and the complex nature of the transmission mechanism itself (Ciżkowicz-Pękała et al., 2019).

Notably, due to the lags of the transmission mechanism, an IT strategy recommends a forward-looking monetary policy (Ciżkowicz-Pękała et al., 2019). Hence, the central banks' ability to model and forecast inflation movement is essential so that they can identify how they should respond to shocks to achieve the targeted inflation rate and enhance the monetary policy's effectiveness. Moreover, unlike other monetary policy strategies, an IT regime extremely focuses on the role of inflation forecast in setting policy and considers it as an intermediate objective (Schmidt-Hebbel and Carrasco, 2016). Therefore, the IT central banks should establish a process for producing inflation forecasts and other economic indicators to ensure the right decisions (Ciżkowicz-Pękała et al., 2019). Besides, as noted by Misati et al. (2012), the central banks should use different models such as Dynamic Stochastic General Equilibrium (DSGE) models in combination with smaller models and then compare the results to attain the best inflation forecast.

In practice, no country has an ideal condition of analytical models as well as data resources to predict inflation before adopting IT (even in advanced countries), and some emerging economies even have no inflation forecast process at all at the outset of the IT regime (Batini and Laxton, 2007; Schmidt-Hebbel and Carrasco, 2016). Sometimes, accurate inflation projection is also challenging even in advanced countries, especially amid uncertainty like during the COVID-19 period (Bobeica and Hartwig, 2023). This raises the question of whether

requiring high capacity and adequate resources for forecasting before starting IT is too demanding for emerging and developing countries. Indeed, many countries like Indonesia, Thailand, and the Philippines began with simple models (e.g., a VAR model) at the beginning of IT, and gradually upgraded their technical capabilities over time[5]. In other words, the fact is that emerging countries do not need to have the most advanced and ideal forecasting and analytical capacities at the early IT introduction because technical infrastructure can be improved during IT adoption, but they should have a reasonable methodology for forecasting the inflation path, even starting from simple models.

Hence, the requirement of adequate forecasting and analytical resource should be a motivation for central banks, especially in developing and emerging countries, to continuously upgrade models and databases throughout the IT implementation, rather than seeing it as a barrier to introducing IT. Recently, some studies proposed using machine learning to improve the efficiency of inflation analysis and forecasting (e.g., Araujo and Gaglianone, 2023). This shows that the development of science promises to enhance the technical capacity of central banks, thereby better serving the success of the IT framework.

(iii) A healthy financial system and low-dollarized economy

A sound and stable financial system is another aspect that has gotten lots of attention in the literature on IT in emerging nations. Particularly, the financial system acts as an active intermediary to help the central bank control liquidity and credit growth, thereby affecting market interest rates and economic variables (i.e., prices and output). Hence, a weak financial system will dampen the efficiency and independence of monetary policy (Agénor and da Silva, 2019). Put more technically, the monetary authority will be limited in the capacity to regulate interest rates by an afraid that a rise in interest rates will restrict the supply of credits and then, harms financial institutions' external finance premium. Also, an increase in interest rate makes firms' interest expenses go up, lower cash flows, and the value of the collateral declines. As a result, these influences will weaken the financial institutions' balance sheet position (Ötker-Robe and Freedman, 2010; Ma and Lin, 2016). Moreover, given interest rate policy is the IT framework's core instrument, the financial system's role becomes even more critical. Likewise, Ötker-Robe and Freedman (2009) investigated the experiences of eight economies in

[5] See Chapter 5

introducing and implementing IT and found that most IT countries have sufficiently stable and sound financial systems at the time of IT adoption.

Moreover, in the case of a high level of dollarization in the economy, the effectiveness of monetary policy is also weakened (Alvarez-Plata and Garcia-Herrero, 2008; Ciżkowicz-Pękała et al., 2019). Particularly, dollarization increases the demand for foreign currency hoarding by individuals and organizations, pushing up inflationary pressures on the domestic currency while distorting the actual supply and demand of foreign currencies in the market, affecting the effectiveness of the flexible exchange rate policy (Rennhack and Nozaki, 2006). Furthermore, it reduces the influence of policy rates via the credit channel on market participants. For example, an increase in domestic currency interest rates could boost foreign currency lending, thereby reducing the efficacy of the central bank's tightening policies. Consequently, the central bank fails to achieve the intended results (Ciżkowicz-Pękała et al., 2019). Thus, a stable and well-developed financial market, combined with a limitation of dollarization in the economy, are essential conditions to ensure the effectiveness and autonomy of monetary policy.

However, this requirement should not be an obstacle to preventing emerging economies from adopting Inflation targeting. Instead, it urges financial sector reforms as well as enhancing bank regulation and supervision either before or concurrently with the IT adoption in emerging countries (Agénor and da Silva, 2019).

To summarize, there are certain debates about the prerequisites for an emerging country to adopt the IT regime. In general, there are some prerequisites that the central banks should meet when pursuing the IT regime, namely: the primary objective as the inflation target, the absence of fiscal dominance, and the central bank's instrument autonomy. Considering the other conditions, the central banks can improve and develop them in parallel with the implementation of IT (i.e., the ability to control policy instruments, a well-developed financial system, low dollarization, and adequate analytical resources to forecast inflation). In practice, even with the three above key prerequires, at least one of them was not fulfilled at the time of IT introduction in some countries. For example, the issue of instrument independence (in the legislation) for the Bank of Thailand or the requirement of the absence of (de facto) fiscal dominance in the case of the Philippines in the 2000s[6]. Therefore, perhaps the most important thing in successful IT adoption is not meeting all the prerequisites at the outset of IT but efforts by central banks and governments to continuously improve the conditions (as outlined above) of an IT

[6] See more details in Chapter 4.

framework. Indeed, even if the institutional and economic environments of emerging economies are not immediately perfect, the benefits of IT adoption and subsequent improvement are well worth it (Arsić et al., 2022).

2.4. Challenges in IT implementation in emerging countries

In addition to the prerequisites for introducing an IT framework, the subsequent IT implementation necessitates the effort and adaptability of authorities in emerging and developing countries, particularly amid global uncertainty. Indeed, the increasing integration of trade and finance into the international market makes central banks have some (implicitly or explicitly) concerns about exchange rates and financial stability objectives[7] under the IT framework. At the same time, inherent structural constraints (e.g., limited capacity, underdeveloped financial markets, high sensitivity to exchange rate shocks, and low transparency and accountability of the central bank) make pursuing multiple goals within the flexible IT regime more challenging for these countries than advanced countries.

Moreover, in theory, there are arguments about whether these goals are inconsistent with the IT regime. Meanwhile, international experience shows that central banks have tried to develop different policy tools corresponding to specific goals to reduce potential tensions. This section will present general views on this issue, while the practical experience will be more clarified in Chapter 5 by the case study of Southeast Asian countries.

2.4.1. Exchange Rate

2.4.1.1.Exchange Rate and Dollarization Issue

Most IT emerging and developing countries pursue a de jure floating exchange rate regime to be compatible with the prerequisites for IT adoption. But in practice, the exchange rate continues to be an issue of concern in the IT implementation in these countries as the harmful effects of extreme exchange rate volatility on the economy (Agénor and da Silva, 2019). This may seem at first glance at odds with the premise of IT, but indeed, in many cases, exchange rate stability supports the implementation of the price stability objective of IT. More specifically, given the considerable pass-through impact of the exchange rate in monetary policy through both direct channels (e.g., on imported final goods in the CPI index) and indirect channels (e.g., via relative price effects on aggregate demand, as well as imported intermediate

[7] Financial stability is a concern shared by both emerging countries and advanced countries. However, the issue of exchange rates primarily affects emerging countries.

input's costs on aggregate supply) in emerging and developing countries, exchange rate shocks will significantly affect the output and inflation movement (Schmidt-Hebbel and Carrasco, 2016; Agénor and da Silva, 2019). As a result, countries can miss the inflation targets under the IT regime.

Not only that, but emerging countries also face the problem of dollarization[8], which makes the exchange rate's pass-through to inflation even deepen, thereby causing inflation more susceptible to exchange rate shocks (Park and Son, 2022). Besides, intense and abrupt exchange rate volatility can cause significant portfolio shifts between assets denominated in local currency and those denominated in foreign currencies (mostly in dollars), contributing to banking and financial system instability (Agénor and da Silva, 2019). Furthermore, given that the balance sheets of households, firms, and banks are dollarized in many emerging countries combined with considerable liabilities in foreign currency, significant exchange rate depreciations can exacerbate the burden of dollar-denominated debt, negatively affecting their balance sheets. This causes asymmetric information issues in credit markets, resulting in a steep fall in investment and economic activities and, thus, a downturn in the economy (Mishkin, 2008). Also, severe deterioration of the balance sheets due to sharp exchange rate depreciation can increase the risk of a financial crisis under dollarization. Thus, unlike the usual case where a currency depreciation may benefit exports/aggregate demand followed by economic growth, in a dollarized economy, one can observe its adverse effects on the economy as well as on the financial and banking system (Leiderman et al., 2006; Catão and Pagan, 2011). As a result, to maintain domestic financial stability, authorities should identify vulnerabilities and interfere in FX markets in the event of rapid and sudden changes in the exchange rate. Because of these, many emerging and developing IT countries are in fact still interested in the stability of the exchange rate during IT implementation (Hofman et al., 2020; IMF, 2023a).

2.4.1.2. Exchange rate policy under the IT framework

Although exchange rate issues should be considered within the IT framework of emerging countries (especially in partially dollarized countries), there are still debates about implementing an appropriate exchange rate policy consistent with IT. Besides, mistakes can happen if the central banks go too far in managing exchange rate fluctuations, like toward a fixed exchange rate regime (Mishkin, 2004). Especially, supporters encourage a free-floating exchange rate regime under the IT framework for the following reasons. First, continuous

[8] Dollarization is a rather typical issue in transition economies, including Vietnam (Pham, 2017).

interventions in the FX market can make it difficult for the central bank to maintain interest rates at target levels because the FX intervention affects the control of base money. Second, monetary authorities may be distracted from the inflation target due to focusing on the exchange rate stabilization objective. Third, in principle, the view of a free-floating exchange rate regime is further reinforced by the "Impossible Trinity" theory and the "Corner solution" opinion[9]. Particularly, there are cases where exchange rate stability conflicts with the inflation objectives of IT. For example, massive capital inflows lead to a strong appreciation for the local currency, which may tempt central banks to cut interest rates to discourage capital inflows and soften currency appreciation. Nevertheless, this reaction can induce the overdevelopment of domestic markets, and an increase in asset prices, thereby putting pressure on inflation which threatens the price stability objective of the IT framework. At this point, the exchange rate stabilization policy may be tense with the inflation target if it causes the central bank's inappropriate decision to change policy interest rates (McCauley, 2006; Grenville and Ito, 2010). Against this backdrop, a solution is that central banks should employ other tools to smooth out extreme exchange rate fluctuation (e.g., sterilized FX interventions and regulations for short-term capital flows) rather than relying on interest rate policies. In fact, given an increasing financial integration, a flexible exchange rate regime with some FX interventions can ease the trilemma issues (Steiner, 2017). Importantly, transparent communication of FX interventions is needed to let the public see that the central banks only mitigate short-term large and abrupt fluctuations in exchange rates (which can harm the economy) while still allowing the exchange rate to be determined by the market in the longer term.

Nevertheless, the conduct of FX interventions is not without costs (Adler and Mano, 2016). In addition to the costs associated with holding reserves and sterilization, there is also the risk of FX reserves depletion and increasing the structural weakness of the market. Moreover, in the context of the IT regime, the use of FX interventions, along with policy interest rates for objectives other than inflation, could lead to misunderstandings regarding the central bank's goals and the priority of its inflation target, thereby undermining the credibility of the IT framework (Ciżkowicz-Pękała et al., 2019). In contrast, despite its costs, FX interventions seem to be a helpful tool for serving macroeconomic and financial stability objectives, while conflicts that FX interventions cause with IT can be resolved in the case of a credible central bank (Hofman et al., 2020). Similarly, Krušković (2022) confirmed the positive impact of FX

[9] The corner solution for the "Impossible Trinity" is rarely strictly applied in practice. However, the most important note here is that authorities will face a trade-off: greater attainment of one objective means less attainment of both or either of the other two (Corbacho and Peiris, 2018).

interventions in supporting price and output stability in the case of excessive local currency depreciation. Specifically, FX interventions alleviate depreciation shocks, helping to ease a high increase in policy interest rates to combat inflation, thereby reducing the negative impact on output and financial stability. However, the study emphasized that high levels of FX reserves are essential for successful FX interventions without fear of reserve depletion (Krušković, 2022). Besides, FX interventions (if conducted) should be communicated clearly; that case is needed to support price stability and financial stability, thereby preserving the IT framework's credibility. In addition, FX interventions should also be coupled with a proactive policy of FX market development (with hedging tools) and dollarization limitation, thereby reducing the costs and needs of actual interventions (Hofman et al., 2020).

In short, FX intervention costs should be compared with the potential costs of excessive exchange rate fluctuations on the stability of prices, output, and the financial system. For example, in the context of the sharp depreciation of local currencies in many emerging and developing countries, which has increased pressure on inflation and financial stability in the recent post-COVID era, timely FX interventions have certain effects (Singh, 2023). In practice, the view that it is mandatory to apply a free-floating exchange rate regime under IT also has gradually changed. Indeed, most IT emerging countries apply a de facto floating regime, not a free-floating one (IMF, 2023a). That means they still allow FX interventions to a certain extent[10]. As of end-2022, among 34 IT emerging and developing countries, 24 countries follow a de facto floating exchange rate regime, 6 countries follow a de facto crawl-like arrangement, 2 countries follow a de facto stabilized arrangement, and only 2 emerging countries pursue a de facto free-floating exchange rate regime under IT (IMF, 2023a).

2.4.2. Financial Stability Issue

The GFC lesson has emphasized the role of financial system stability besides price stability in overall macroeconomic stability (Corbacho and Peiris, 2018). Accordingly, the surveillance of the whole system's vulnerability is necessary to ensure the safety and effectiveness of the financial system, thereby supporting the transmission efficiency of monetary policy and ensuring macroeconomic stability. However, whether the financial stability objective should be

[10] According to IMF's classification, "a floating exchange rate is largely market determined without a predictable path for the exchange rate, but it does allow for FX intervention to moderate the rate of change and avoid undue volatilities in the exchange rate". By contrast, under a free-floating regime, "intervention occurs only exceptionally to resolve disorderly market conditions and has been limited to at most three circumstances in the previous six months, each lasting no more than three business days" (Habermeier et al., 2009).

one of the obligations of monetary policy remains a matter of controversy (Corbacho and Peiris, 2018). Particularly, under the flexible IT regime, the central banks focus on price stability as the overriding objective and take care of sustainable growth. So, does the financial stability obligation have any conflict with the implementation of IT? In addition, emerging and developing countries are increasingly integrating into global financial markets. Meanwhile, their financial system management capacity is weaker than in advanced countries, making pursuing financial stability in these countries more difficult.

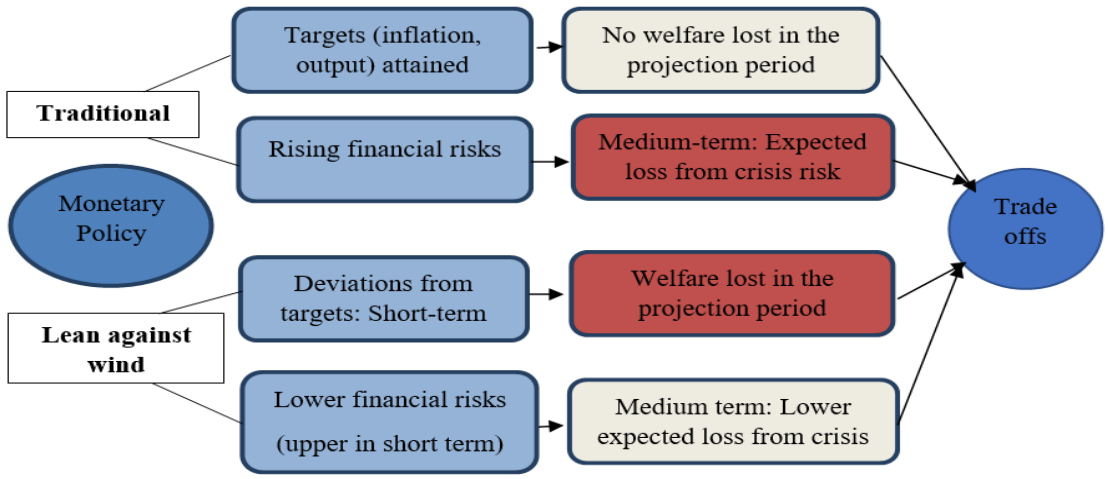
When a crisis occurs, the monetary policy with a lower interest rate will help recover damaged financial sectors. At the same time, the central bank can actively use the LoLR function (Lender of last resort) to address the liquidity shortage caused by the financial crisis. In this circumstance, these policies (of the central bank to deal with the GFC) are not inconsistent with the inflation-targeting regime (Grenville and Ito, 2010).

Under normal circumstances, however, there can be tensions between the financial stability objective and the main monetary policy objectives. Specifically, interest rates high enough to combat asset price bubbles (the leading cause of financial system instability) would be too high for other activities, adversely affecting the economy. More specifically, some suggestions are that central banks can conduct one of two monetary policy strategies (as depicted in Figure 2.1). Accordingly, the "traditional monetary policy" faces the problem of increased financial risks but preserves welfare, while the "leaning against the wind" by raising interest rates can prevent emerging threats from the financial system but faces the issue of welfare loss. Neither of them adequately solves the problem posed because of utilizing only the policy interest rates instrument (Grenville and Ito, 2010; Corbacho and Peiris, 2018). Without other tools, many studies support using the monetary policy of "leaning against the wind" to reduce the possibility of a financial crisis (Woodford, 2012; Ajello et al.,2016). However, the efficacy of this strategy depends much on how effective interest rates are in mitigating risks to the financial system (Corbacho and Peiris, 2018). Indeed, regarding emerging countries, rising interest rates to deal with asset price bubbles may push up excessive capital inflows, subsequently stimulating domestic credit expansion and fostering the buildup of financial imbalances (Sahay et al., 2014; Menna and Tobal, 2018).

In addition, the discrepancies between the monetary and financial stability obligations could undermine the central bank's credibility in conducting monetary policy, which is crucial to ensuring an effective IT regime. When setting policy interest rates based on financial stability considerations, the central bank needs clear justifications and acts without undue influence on

its inflation and growth targets. Failure to do so will severely affect inflation expectations and reduce the effectiveness of the IT regime.

Figure 2.1. Traditional vs. Lean-against-the-wind monetary policy



Source: IMF, 2015

Therefore, a better solution would be to develop other different tools for financial stability. In this case, the macroprudential policy is a prominent candidate for reducing the tensions between financial stability goals and the traditional goals of the IT regime (Grenville and Ito, 2010; Corbacho and Peiris, 2018). Indeed, the conflict between monetary targets and financial stability objectives stems primarily from attempting to attain two different obligations based on a single instrument, the interest rate policy. Therefore, the tensions will be dampened by employing macroprudential tools for financial stability and interest rate tools for monetary stability. Not only that but targeted macroprudential instruments can also be more effective than interest rate tools in handling risks of specific sectors and industries, such as Loan-to-Value (LTV) measures aimed at the real estate sector. Meanwhile, increasing interest rates can cause unnecessary negative impacts on the whole economy (Corbacho and Peiris, 2018).

Furthermore, given that the GFC happened during a period of very stable macroeconomic conditions, history has shown that monetary stability, as well as microprudential soundness alone, is not sufficient to avoid a crisis. To be more specific, monetary policy has a tendency to miss signals showing a risk buildup caused by risk-taking behavior among segments of the financial system, such as a simultaneous growth in housing loans in the banking sector. Meanwhile, because micro-prudential regulations only aim at the individual institutions'

soundness, it is insufficient to detect interconnected risk accumulation in the whole financial system. A macroprudential policy can complement these shortcomings by reducing systemic risk, which is related to the interconnectedness and procyclicality of the financial system, thereby helping achieve financial stability (Hannoun, 2010; Morgan, 2013; Agénor and da Silva, 2019).

Besides, even though monetary policy and macroprudential policy have a certain division of work, there is still a need for joint supervision by the central bank to ensure a certain synergy between these two policies. The macroprudential policy will be much more effective in stabilizing financial markets if monetary policy moves in the same direction (Bruno et al., 2015). Meanwhile, monetary policy will also be greatly supported by a sound financial system, which enhances the transmission efficiency of monetary policy (Agénor and da Silva, 2019). Therefore, the two policies should complement each other rather than replace one another in assisting the central bank in achieving its macroeconomic goals under the IT framework.

In summary, although IT requires certain conditions for successful adoption, this framework can yield tremendous benefits (e.g., enhanced macroeconomic outcomes and institutional improvement), especially in developing and emerging countries (Arsić et al., 2022). However, given limited structural features, these countries face concerns about exchange rate volatility and financial system stability issues, making the implementation of IT complicated. In principle, these challenges can be alleviated by integrating and enhancing toolkits within the IT framework[11].

[11] Practical experiences will be elucidated in Chapter 5.

Chapter 3. Monetary Policy Framework and Performance in Vietnam

Chapter 2 points out the basics of an IT framework, especially its benefits for emerging countries. Moreover, IT is increasingly becoming the choice of many emerging and developing countries in conducting monetary policy. So, should Vietnam pursue an IT framework? To answer this question, this chapter analyzes the characteristics of Vietnam's monetary policy framework and its performance, and evaluates its achievements and limitations, thereby indicating great motivations for IT in Vietnam.

3.1. Macroeconomic performance

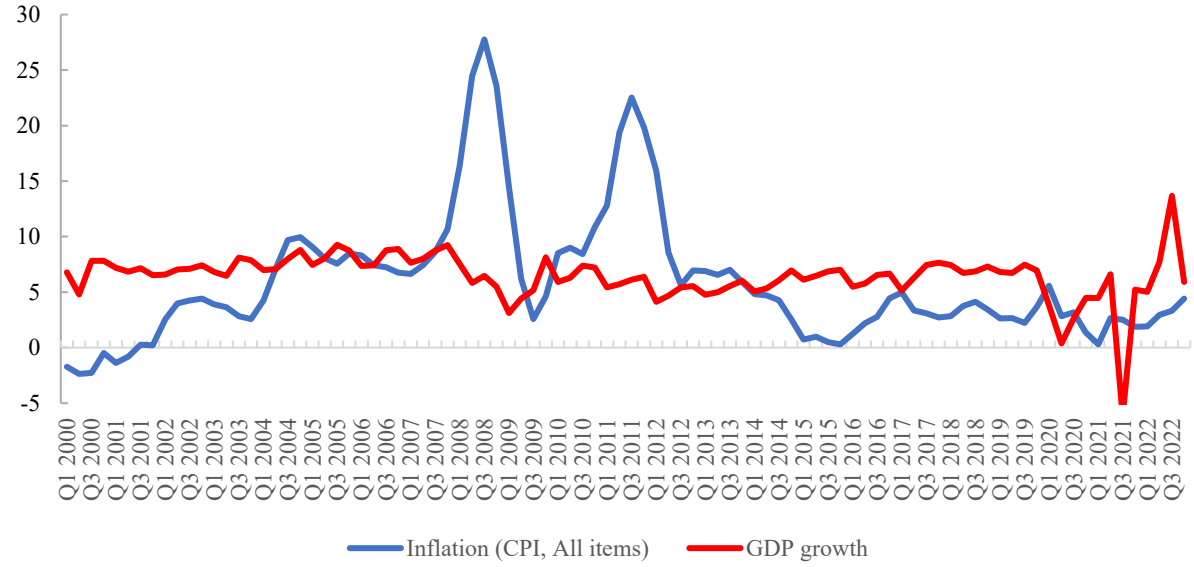
3.1.1. Macroeconomic performance in Vietnam

Since its renovation in 1986, the Vietnamese economy has remarkably changed from a low-income to a lower-middle-income country. According to the World Bank, Vietnam has become one of East Asia's dynamic emerging economies. Particularly, to evaluate macroeconomic performance in Vietnam, economic growth and inflation rates are two common indicators. Also, these are two significantly important variables for monetary policy conduct. Specifically, the inflation rate measured by the changes in CPI will show the performance of the price stability objective of monetary policy. Meanwhile, the movements of the GDP growth rate will be an additional analysis to explain the operating decisions of monetary policy and the trade-off between the goal of price stability and economic growth.

In the late 1990s, the Vietnam economy's development slowed due to not only the AFC's negative effects but also the unsustainable growth structure which had relied heavily on capital-intensive investments made by state-owned enterprises (SOEs) in non-competitive industries. Early in 2000, the economy started to improve, largely because of a resurgence in domestic investment but growth was slower than in the early 1990s (Bhattacharya, 2014). Meanwhile, in 2000 and 2001, Vietnam witnessed light deflation, then inflation maintained low in 2002 and 2003, mainly due to falling commodity prices and excess capacity (Maliszewski, 2010). However, inflation started to pick up in late 2003 and reached 10% at the end of 2004, while the growth remained around 7%.

From 2004 to mid-2008, inflation rose rapidly because of the upsurge in world oil and commodity prices as well as increasing demand due to large expenditures by state-owned enterprises, combined with the impact of huge capital inflows, especially after Vietnam joined the WTO in 2007.

Figure 3.1. Vietnam: Headline inflation and GDP growth in 2000-2022 (year-on-year percentage change)



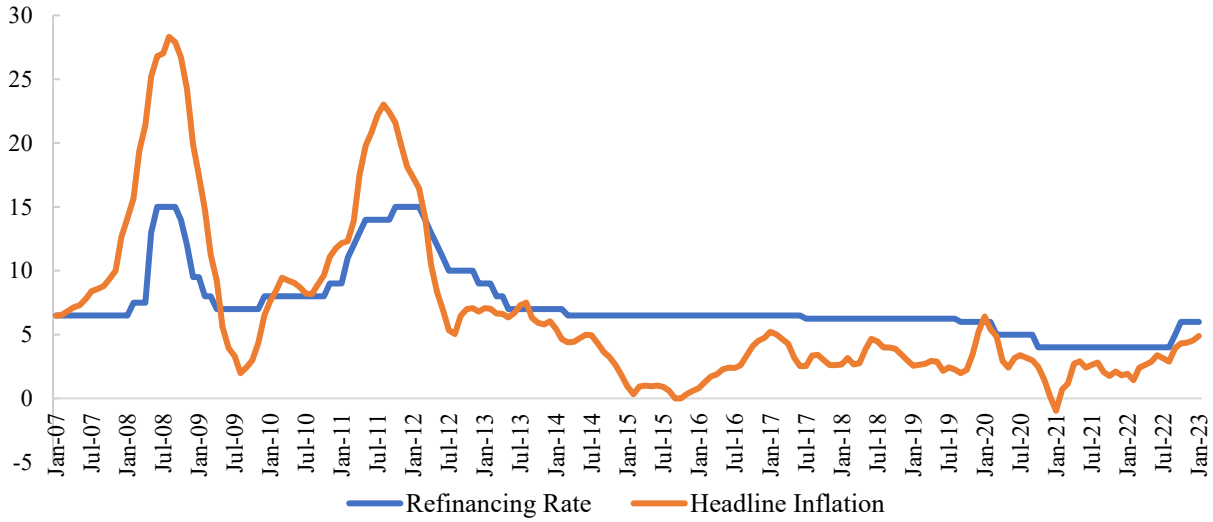
Source: IMF, GSO

It should be clarified that the capital inflows positively impacted Vietnam's economic growth, but the massive capital flows created certain challenges for monetary policy conduct (Pham, 2016). Particularly, given the fixed exchange rate regime, when large capital flowed into the economy during that period, the SBV heavily intervened in the FX market to preserve the nominal USD/VND exchange rate. Consequently, the FX reserves nearly doubled from USD 11.5 billion at the end of 2006 to USD 21 billion at the end of 2007, so a large amount of liquidity was fueled into the market. After that, the SBV increased reserve requirements and step up its selling securities in the OMOs to drain bank liquidity. However, given the undeveloped financial market constraining the effectiveness of OMOs at that time, the SBV failed to fully sterilize the FX intervention and external inflows, which contribute to a rapid increase in money supply in the domestic market, thereby putting more pressure on inflation (Pham and Riedel, 2012; Pham, 2016). The data shows the total money supply (M2) increased by 46.12% in 2007, the economic growth reached 7.13% while inflation increased to 10.67% in the final quarter of 2007 and continued to rise significantly in 2008.

In 2008, the GFC broke out, exacerbating challenges for the Vietnamese economy. Particularly, investment and export activities were severely affected, resulting in economic growth slowing down quickly from an average of 7.13% in 2007 to 5.66% in 2008 while the inflation rate increased significantly and reached a peak of 27.8% in 2008Q3. However, the inflation rate dropped quickly to 2.6% in 2009Q3 due to declining domestic demand and reduced food and

energy prices. Nevertheless, at the end of 2009, headline inflation began to increase once more, mostly because of the influence of economic stimulus policies implemented to respond to the GFC. Particularly, in 2009 the government launched a considerable fiscal stimulus package estimated at 5% of GDP to revive the economy. At the same time, the SBV continuously lowered the policy rates from late 2008 to 2009 (e.g., the refinancing rate was reduced by a total of 8% between October 2008 and April 2009 and remained at 7% until the end of 2009). Moreover, SBV actively injected liquidity into the economy through OMOs and reduce the reserve requirement ratio to stimulate the economy. Consequently, the economic activities weathered well during the GFC and showed signs of recovery, but inflation and macroeconomic stability risks increased (IMF, 2010).

Figure 3.2. Vietnam: Headline Inflation and Policy Rate Movement (percent)



Source: Author's illustration

Note: Database from IMF, SBV

In late 2009 and early 2010, the SBV temporarily tightened its monetary policy to contain inflation. However, it quickly changed the approach and again eased monetary policy in mid-2010 to ensure the economic growth goals (IMF, 2010; Bhattacharya, 2014). In particular, in December 2009, the authorities raised policy interest rates by 100 basis points, devalued the exchange rate by 5.5%, and phased out interest subsidy programs. Moreover, the SBV capped the dollar deposit rate for businesses at 1% in early 2010 and ended controls of the lending interest rate ceiling on medium and long-term commercial loans and short-term commercial loans in February and April 2010, respectively (IMF, 2010). Consequently, the credit growth declined significantly, and higher borrowing costs considerably affected businesses, thereby contributing to a drop in the economic growth from 8.13% year-over-year (YoY) in 2009 Q4

to 5.93% in 2010 Q1. In that context, along with the pressure of achieving the economic growth target of 6.5% in 2010, the authorities changed their policy stance to monetary easing. To be more specific, the government encouraged banks to reduce commercial deposit and lending rates and put downward pressure on short-term interest rates via OMOs, bringing them down to about 7% in April. Despite the mixed impact of these measures on deposit and lending rates, credit growth recovered again, reaching 32.43% in 2010. This has helped Vietnamese authorities attain economic growth of 6.42% in line with the target but pushed the average inflation in 2010 to 9.21%, much higher than the pre-announced targets. In this regard, the SBV admitted that high credit growth could put macroeconomic stability at risk. However, the SBV continued to keep flexibility in monetary policy operation because of its mandate of balance between stability and growth. Meanwhile, the fact that unstable macroeconomic policy stance with tightening and easing approaches in succession, along with delayed reactions to evolving economic situations and the limited monetary policy transmission undermined investor confidence and affected long-term growth and macro stability (IMF, 2010).

In 2011, inflation continued to increase rapidly and reached 23.12% in the year's third quarter. In this context, stabilizing prices and rebuilding credibility were urgent issues. Hence, the government issued "Resolution 11", emphasizing the task of controlling inflation with tight monetary and fiscal policies, instead of the high economic growth goal in the previous years. Accordingly, the SBV continuously rose the refinancing rate by a total of 600 basis points within 2011 and implemented a range of administrative measures to tighten credit (i.e., imposing a cap on the deposit interest rate, a ceiling on lending rates for some priority sectors, and a ceiling on credit growth of commercial banks). Moreover, the government and the state-owned enterprises contained their investment and spending. Eventually, inflation had fallen to around 7% by the third quarter of 2012 because of the stabilization of food prices, the effort of authorities, and base effects (IMF, 2012). At the same time, the exchange rate began to gradually stabilize after the devaluation announcement of the VND against the USD by 9.3% in February 2011 and the following aggressive contraction of monetary policy by the SBV. Meanwhile, GDP growth decelerated to 4.14% year-over-year in 2012Q1 and was at 5.50% for the whole of 2012.

From 2012, because of the government's efforts, the prudent monetary policy of the SBV[12], and a more flexible exchange rate regime, Vietnam has gradually controlled inflation from double

[12] However, it should be reiterated that SBV has used many administrative measures in operating monetary policy, such as imposing caps on deposit and lending interest rates and setting limits on credit growth for commercial

digits to one digit. More specifically, the credit growth rate dropped sharply from 32.43% in 2010 to 8.85% in 2012, leading to a drop in the inflation rate in subsequent years. In 2015, Vietnam witnessed an extremely low level of inflation at 0.63%, which created a fear of deflation. However, this did not happen when inflation gradually increased but was still in control (i.e., 2.67% in 2016 and 3.52% in 2017) because of increased food and administrative prices, along with the accommodative monetary policy. Indeed, very low headline inflation in 2015 was mainly due to the sharp drop in global oil prices, low import prices, the absence of wage pressures, and a modest output gap (IMF, 2016b). From 2016 to 2019, the economy grew at a moderate level of around 6% while the inflation rate was below 4%, partly because of prudent monetary policy. Especially, one of the central tenets of SBV's monetary policy framework is the bank-by-bank and aggregate caps on credit growth (IMF, 2019b).

In 2020, inflation increased significantly to 6.43% in January 2020, but the outbreak of COVID-19 caused inflation to decrease rapidly to 0.19% in December 2020. Specifically, during the first year of COVID (2020), the government was forced to implement strict social distancing and lock-down measures, requiring the temporary closure of many business activities, causing a significant decline in aggregate demand. Particularly, the average GDP growth decreased from 7.15% in 2019 to 2.94% in 2020 but is still at a higher growth level in many other emerging countries[13]. In fact, throughout 2020, the government conducted many financial support policies for people to reduce the consequences of the COVID pandemic, and the SBV also cut interest rates twice (i.e., from 6% in February 2020 to 5% in March 2020, and then to 4% in October 2020) to support the economy. Therefore, average inflation in 2020 increased compared to 2019, at 3.22% but still within the target.

In 2021, the government partially reopened the economy. However, given the complicated development of the pandemic, especially the Delta variant in mid-2021 and the Omicron variant at the end of 2021, many economic activities are limited, so the recovery of the economy was quite slow. Specifically, the average economic growth in 2021 reached 2.59%, accompanied by low inflation at 1.83%.

In 2022, with the wide coverage of vaccination, and the strategy of living with the pandemic not only in Vietnam but also around the world, countries reopened almost all manufacturing,

banks. These measures have prevented the liberalization of market interest rates, harming the transmission efficiency of the policy interest rate tool (IMF, 2019b).

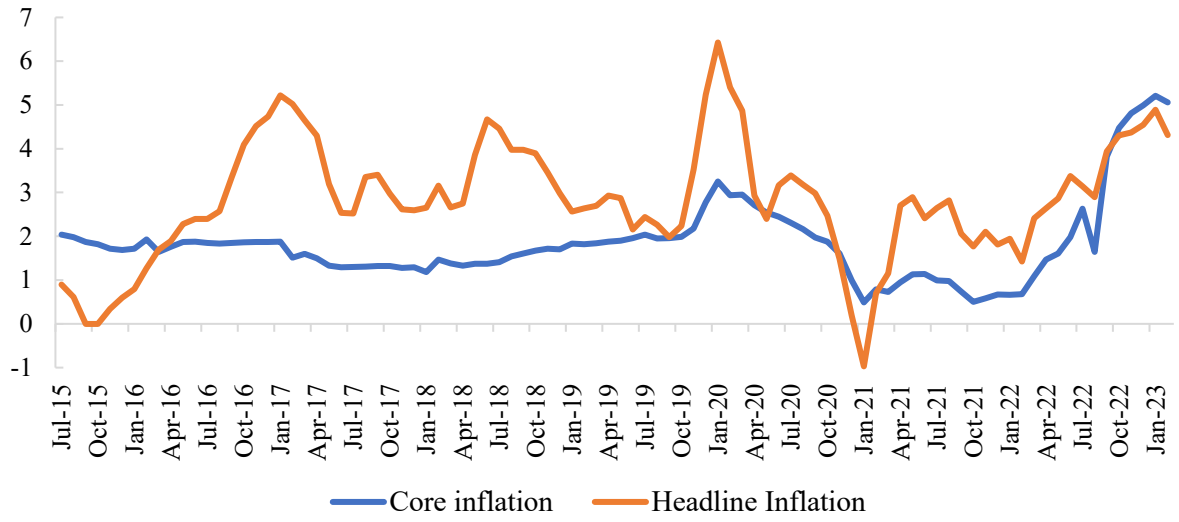
[13] Data from https://www.imf.org/en/News/Articles/2021/03/09/na031021-vietnam-successfully-navigating-the-pandemic

business, and service activities. Since March 2022, Vietnam has fully reopened its economy and actively implemented the government's fiscal stimulus packages, boosting economic growth. Specifically, the average GDP growth in 2022 reached a record high of 8.02%, partly due to the low base effect, domestic and export demand recovery, and the normalization of tourism and other service activities. However, inflation risks have increased amid an uncertain global environment. Specifically, global aggregate demand increased rapidly in the post-COVID period when countries reopened their economies, combined with supply constraints due to the supply chain not fully recovered, China's zero COVID policy, and then the outbreak of the Russia-Ukraine war pushes the global economy into the context of a severe supply shortage amid extremely high of demand. These lead to a surge in global commodity and energy prices, and then a tremendous increase in inflation in many countries. In that context, Vietnam and other Southeast Asian countries were also affected. However, Vietnam was quite fortunate, because the reopening of the economy in Vietnam took place at a slow and gradual pace, so the supply-demand gap was not too big. Besides, given an exporter and producer of agricultural products, Vietnam's economy has coped well with food price shocks (e.g., incredibly high wheat prices). Meanwhile, for the energy price shock, the government has conducted subsidies and controlled prices of electricity and domestic fuel products to ease inflationary pressures. As a result, although inflation in 2022 increased significantly to 3.16% from 1.83% in 2021, it was still under control. However, if looking at the monthly inflation index, the risk of inflationary pressures exists. Specifically, inflation rose continuously from 2.89% in August 2022 to 4.89% in January 2023 due to negative impacts from high global food and oil price shocks. Against this backdrop, the SBV raised the refinancing interest rate by 100 percentage points to 5% in September 2022, and then continue to raise it by 100 percentage points to 6% in October 2022. At the same time, the SBV continuously sold a large amount of foreign currency to drain domestic currency in circulation, aiming at containing inflation.

Besides, core inflation is typically less volatile and often lower than headline inflation, reflecting the volatility and increases in food and energy prices (as shown in Figure 3.3). However, core inflation has consistently risen from 1.64% in August 2022 to 5.21% in January 2023, surpassing headline inflation since October 2022, suggesting the second-round effect of price shocks. Indeed, headline inflation is still under control in Vietnam amid global uncertainty, partly due to stable domestic food prices, considerable subsidy policies, and price ceiling control for many government-administered items (e.g., electricity, water, medical expenses, and education), and the prices of these items are excluded from core inflation.

Meanwhile, core inflation, which represents the long-term trend of inflation, remains high and even higher than headline inflation during shocks, indicating that inflationary pressure still needs to be closely monitored in the post-COVID era.

Figure 3.3. Core and Headline Inflation in Vietnam (percent)



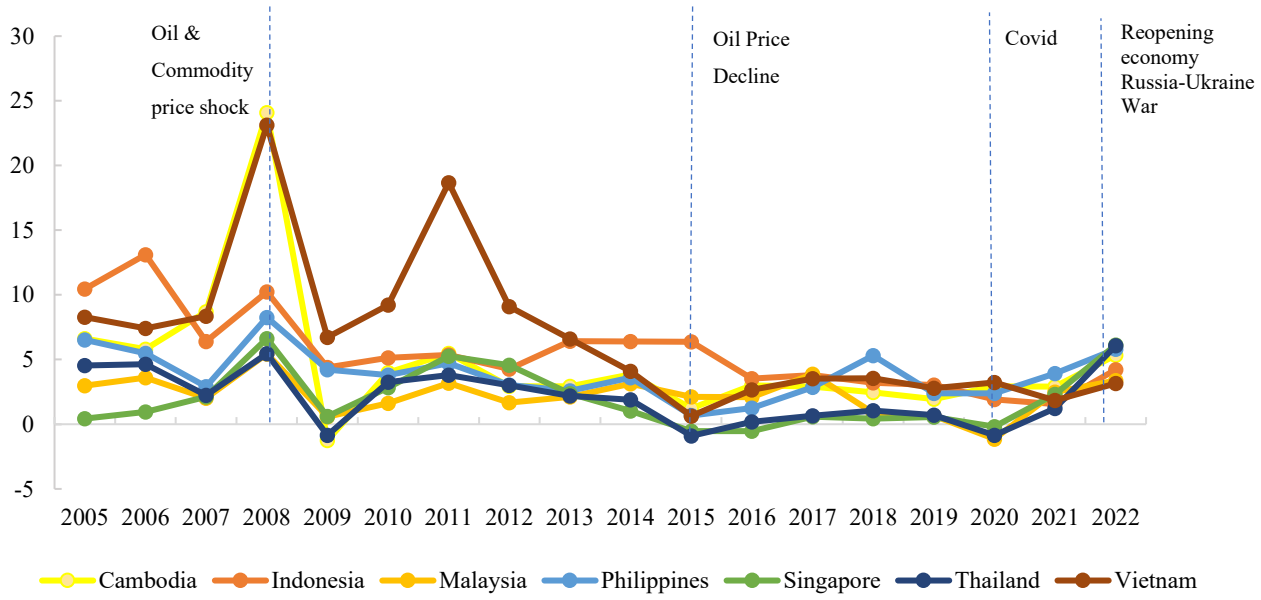
Source: General Statistics Office of Vietnam

Note: Core inflation is calculated by directly excluding 16 groups of food, fresh foodstuff, energy, and administered prices of the government.

3.1.2. Comparison with other emerging Southeast Asian countries

In general, it is worth noting that inflation in Vietnam was more volatile and often higher than that in other emerging Southeast Asian countries (as shown in Figure 3.4). This performance partly reflects the macroeconomic policy framework's shortcomings (Bhattacharya, 2014). In fact, the Vietnamese authorities can blame the loss of inflation control in 2007-2008 on the impact of the oil price shock and the devastation of the GFC but could not use this reason to explain completely the fluctuation of inflation in the following years. Specifically, in 2011, while the inflation rates of other countries in ASEAN were stable, inflation in Vietnam skyrocketed to a double-digit rate of 18.68%, which was over three times higher than the regional average inflation of 5.05% at the same time. In two episodes of high and volatile inflation in 2008 and 2011, headline inflation soared but declined rapidly after only about eight months. Although both periods seem to stem from external shocks, extremely loose macroeconomic policy exacerbated the situation.

Figure 3.4. Headline inflation of Vietnam and Southeast Asian countries (percent)



Source: IMF data

Indeed, the 2008 inflation was partly linked to considerable unsterilized capital inflows after joining the WTO. Meanwhile, the 2011 event was related to sizable stimulus policies to deal with the GFC (IMF, 2012). In addition, there were other reasons for the high and volatile inflation movement in Vietnam compared to other emerging countries, especially in 2011. Firstly, the government's adaptive policies of increasing electricity, fuel prices, and minimum wages have added to inflationary pressures (Lai, 2015). Secondly, another key factor pushing the inflation rate up in 2011 is a loose monetary policy in previous years, especially the high level of credit and money supply growth. The fact that Vietnam's GDP growth was mainly based on bank credit although its dependence has gradually reduced. Credit growth supported GDP growth, but the economic growth rate was not commensurate with the pace of credit and monetary growth. Particularly, the speed of credit growth and money supply growth was remarkably high, at 37.53% and 28.99% in 2009; 32.43% and 33.30% in 2010, respectively. Meanwhile, the economic growth rates were just 5.4 % and 6.4% in 2009 and 2010, respectively. The excess liquidity, so, contributed to the high inflation of 18.68% in 2011 while the GDP growth was unchanged at 6.4%. Furthermore, the responses of the SBV were slow and passive rather than forward-looking to cope with the evolution of inflation (Bhattacharya, 2014). For instance, when inflation showed upward signs since early 2010 but until November 2010, the SBV started to adjust its policy rates (i.e., a 100-basis point increase in the discount and refinance rates while keeping the base rate unchanged). Then, it was not until February 2011 that the central bank made an aggressive adjustment to continuously raise interest rates

until the end of the year to curb inflation. Indeed, the SBV's hesitation in responding to inflation was partly due to the pressure of the economic growth target. In other words, Vietnam's monetary policy lacked consistency and pursued too many goals at once. Thirdly, the extent level of the inertia of inflation also contributed to Vietnam's high inflation. Empirical evidence showed that Vietnam exhibits a significantly greater level of inflation persistence in comparison to other Asian emerging market economies (Bhattacharya, 2014). Also, the sensitivity of inflation expectations to shocks in Vietnam is high. Lastly, the fixed exchange rate policy, coupled with the further opening of the capital account (especially after joining WTO), has made controlling the inflation of SBV more complicated (Pham and Riedel, 2012; Pham, 2016). Particularly, the SBV excessively intervened in the FX market to keep the exchange rate stable, but sterilization operations had not fully offset the FX interventions, causing money supply volatility and then inflation pressure (Pham and Riedel, 2012). After that, Vietnam's inflation performance improved from 2015 to 2019, but it is also a common pattern for other developing and emerging countries, thanks partly to favorable conditions of world oil and commodity prices during that time.

When the COVID-19 pandemic broke out across countries, many governments conducted restriction policies for the whole economy to prevent the spread of the pandemic. Thereby, in 2020, economic growth slowed in Southeast Asia (e.g., many countries had negative growth), accompanied by lower inflation rates than in Vietnam. In mid-2021, countries began to reopen their economies, implement mass vaccination, and live with COVID, along with a series of fiscal stimulus packages and loosening monetary policies, promoting consumption and investment began to increase. Nevertheless, a surge in aggregate demand in the post-COVID period, coupled with supply chain disruptions and energy and commodity price shocks, has accelerated inflation across Southeast Asia in 2022. Notably, the signs of increasing inflation in Vietnam took place later than in other Southeast Asian countries when inflation in Vietnam declined during 2021 and only started to rise from March 2022, while inflation in many countries has increased gradually since mid-2021 and then elevated in 2022 (e.g., inflation in the Philippines increased continuously from 2.39% in 2020 to 3.93% in 2021, and to 5.80% in 2022). One reason is that the economic reopening speed in Vietnam may be slower than that of some Southeast Asian countries (e.g., Indonesia, the Philippines, Singapore, and Thailand) caused of the strict restriction policy to respond to Delta and Omicron variations of the Vietnamese government. So, Vietnam's aggregate demand (especially domestic consumption) increases slowly and gradually. In addition to the slack economy, the administered-price policy

and stable food prices have helped inflation in Vietnam, despite increasing due to the global commodity price and supply shocks, still under control at 3.16% in 2022. However, central banks in Southeast Asian emerging countries have gradually controlled inflation by conducting decisive measures (e.g., raising interest rates). Meanwhile, inflation risks in Vietnam cannot be ignored when core inflation is still high and persistent. Fortunately, the world energy price and the supply bottleneck are easing, so the inflation pressure is gradually decreasing for many countries, including Vietnam.

Especially, although inflation control has been quite good so far, it should be noted that Vietnam authorities have used many administrative measures to control prices[14], causing state-owned enterprises to suffer huge losses due to the restriction on price increases. Notably, the core inflation index in Vietnam has consistently been higher than the headline inflation amid high global price shocks, going against the general trend of other Southeast Asian countries, implying the persistence of inflation in Vietnam[15]. By the end of 2023, when subsidies and price controls of the government are gradually relaxed, inflationary pressures can increase. Meanwhile, monetary policy has been quite passive when the second-round effect of price shocks has occurred. Besides, the SBV's operating policy is jerky, sudden, and lacks transparency and predictability, easily confusing market participants, thereby dampening the monetary policy's effectiveness. Specifically, throughout 2021, the SBV kept interest rates unchanged and committed to keeping interest rates stable during 2022. However, SBV suddenly increased interest rates twice in a row, 100 percentage points each time in just a few weeks from September 2022 to October 2022, causing instability in people's psychology and the market, especially the financial market. Consequently, business and investment activities declined rapidly, and year-on-year GDP growth dropped sharply from 13.67% in Q3 2022 to 5.92% in Q4 2022, further falling to 3.32% in Q1 2023, while core inflation averaged relatively high at 5.06% in Q1 2023. Besides, given a vulnerable small open economy like Vietnam, limited economic structure and inflexible policy framework may exacerbate the negative effects of shocks on the economy (e.g., as recorded in 2008, 2011). Furthermore, although there were reforms and modernization in the banking system, risks exist due to the banking sector's fragility, non-performing loan status, and sluggish bank recapitalization (IMF, 2022e). In that

[14] In Vietnam, the government control over prices of essential commodities. Accordingly, goods and fuels with administered prices constitute 19% of the CPI, while fresh food represents approximately 17% of the CPI basket. Meanwhile, core CPI makes up roughly 64% of the overall CPI (Epstein et al., 2022). Simultaneously, the SBV also applies administrative measures to manage inflation (e.g., impose limitations on each bank's credit growth).

[15] Actually, emerging countries like Thailand and Indonesia also support and manage the price of energy products to reduce pressure on headline inflation. However, their core inflation (after removing these items) remained relatively stable and lower than headline inflation during shocks, following the common pattern.

context, inflation will explode if monetary policy is not well operated (e.g., slowly responding to shocks). Looking ahead, economic growth in Vietnam is expected to slow down as the low base effect fades; meanwhile, inflation risks can remain along with the financial system's vulnerability because of the weak balance sheets of businesses, banks, and households amid global uncertainty. Therefore, in addition to reforming the financial sector and fiscal discipline, the monetary policy framework needs to be further modernized with a more flexible, taking initiative, and forward-looking approach to achieve and maintain price stability, which helps to create an environment encouraging investment, thereby supporting sustained growth in the long term.

From another perspective, despite some shortcomings, the recent improved performance with moderate inflation creates a favorable time to implement some ambitious reforms in Vietnam, including the monetary policy framework toward IT. In this regard, details of the SBV's monetary policy operation will be presented in the next section.

3.2. Characteristics of Monetary Policy Framework

The Vietnamese authorities have adopted a monetary targeting regime. Particularly, to achieve the inflation target, the SBV sets targets for money supply (expressed by M2) and credit growth each year. These intermediate goals may be set in the form of ceiling target or a target range and are published annually.

However, according to the IMF, Vietnam indeed has conducted a monetary framework of exchange rate anchored to the US dollar. Although de jure Vietnam announced adopting a managed floating exchange rate regime according to Clause 2, Article 15 of Decree No. 70/2014/ND-CP in 2014, the de facto regime has been categorized as a stabilized agreement or sometimes as a crawl-like arrangement because the VN dong has been stable versus the US dollar within a margin of 2% band for years (IMF, 2022a).

3.2.1. Institutional Arrangement

Article 3(1) of Law on the SBV of 2010 states that "the national monetary policy includes decisions on monetary matters made by authorities at the national level, covering decisions on the objective of currency value stability, indicated by the inflation rate, and decisions on using measures and tools to achieve the set goals." Particularly, annual inflation targets (along with other macroeconomic targets) are decided by the National Assembly (NA) based on supervising monetary policy's operation and the government's proposal. More specifically, the State Bank

of Vietnam (SBV) submits a proposal on annual inflation targets to the government. The government then evaluates and finally submits it to the NA for official approval. After that, the Prime Minister and the governor of the SBV will together decide on employing monetary policy instruments and measures to attain the set targets (Article 3 of the Law on the SBV, 2010). Lastly, the SBV implements monetary policy in line with government regulations and submits periodic reports to the government.

Most key decisions are coordinated by the NA, the government, and the SBV. Besides, the SBV also has specialized tasks with the position of a central bank as well as a ministerial agency. Among them, based on macroeconomic objectives (e.g., inflation, economic growth) in the annual Socio-Economic Development plans given by the NA, the SBV must plan an annual monetary policy to accomplish the NA's goals, then submit it to the government. In other words, the SBV offers an approach to managing monetary policy and banking systems and sets oriented monetary targets for the year. Furthermore, the SBV analyzes and evaluates solutions for implemented policy tools, while continuously monitoring both domestic and global developments, predicting currency movements, constructing projects, and running monetary policy following the government's direction (Article 4, Law on the SBV 2010).

3.2.2. Objectives of monetary policy

The Law on the SBV and annual orientations of the government and the NA are essential bases for the SBV to set strategies for monetary policy conduct and banking operations.

The Ultimate objectives

The introduction of the Law on the SBV of 2010 marked a vital revision compared to the previous Law on the SBV of 1997 in Vietnam. Notably, in the new law, decisions on the goal of currency value stability, as indicated by the inflation rate, are part of monetary policy. Meanwhile, the concept of "currency value" was not clearly defined in the previous law because it did not mention the phrase "indicated by the inflation rate" as in the new law. This made it difficult to grasp the end goal of monetary policy, whether it is the external value (exchange rate stability) or internal value (price inflation stability) (Lai, 2015). Also, even under an exchange rate targeting strategy, the old law made perplexity of the intermediate objective and final objective of monetary policy. More specifically, it was not straightforward whether the final goal was a stable exchange rate or an aim at the exchange rate level in favor of exports to stimulate growth. Therefore, with the clarity in the definition of the currency value in the new

law, the Vietnamese authorities expressed the view that price stability (inflation) should be the monetary policy's final purpose. A consistent monetary policy with inflation objectives will create an important premise for the SBV to adopt the inflation-targeting framework in the coming years.

However, in addition to the inflation objective, the SBV has other legislated goals, namely safeguarding the efficiency and safety of the national payment system, ensuring the safety of the system of credit institutions and banking activities, contributing to promoting socio-economic development under the socialist orientation (Article 4.1 of the Law on the SBV, 2010). Moreover, given a long list of objectives, the legislation did not specifically outline the top target of monetary policy. Hence, a multi-objective monetary policy can cause difficulties in the operation of the SBV and limits the monetary policy's effectiveness (Lai, 2015; IMF, 2019b). The multi-goal policy was also clearly reflected in the annual directives on the monetary policy conduct of the SBV. For instance, Instructive No. 01/CT-NHNN, issued by the SBV on January 10, 2018, stated that "Managing monetary policy to control inflation rate below 4%, retain macroeconomic stability, support economic growth target of 6.7%, and guarantee the stability of exchange rate and FX markets, and ensure sufficient liquidity in credit institutions."

In fact, the operation of a multi-target policy also revealed certain limitations when the SBV often handles the numerical target of both inflation and output at the same time (IMF, 2017). As a result, the SBV failed to reach the inflation target for some periods, meanwhile, the GDP growth targets often were met, despite having some deviations (as shown in Table 3.1). For example, in 2011, the NA and Vietnamese government set a target for the inflation rate at 9-10%, but the actual rate was 18.58%, nearly twice the target rate. In that context, the inflation objective was strongly emphasized in the socio-economic development plan in 2011 and 2012 by the NA. Also, the government issued "Resolution 11" which put more attention on controlling inflation.

From 2012 onwards, the achievement of the inflation target has been better, partly because the government has not put too much pressure on achieving economic growth at all costs but has paid more attention to price stability to support growth at a reasonable rate. However, in some cases, monetary policy was still accommodative to encourage economic growth as inflationary pressure eased. For example, monetary policy was tightened throughout 2011, with the main objective as price stability, and the SBV was also expected not to change its policy stance in

2012. Nevertheless, in March 2012 and April 2012, when inflationary pressures just began to subdue, along with the pressure of the economic growth target, the SBV immediately cut interest rates twice in a row to encourage growth (IMF, 2012). Consequently, although actual inflation reached the target, it was still high at 9.09% in 2012. Obviously, monetary policy should not focus only on inflation objectives and ignore entirely other goals, especially economic growth, but setting priorities between targets is essential to avoid inconsistency in monetary policy operation (e.g., in case of tension between inflation and growth objectives). After that, amid a high inflation environment, the authorities reduced the GDP growth target from 6-6.5% to about 5.5-5.8% and focused on stabilizing inflation, helping to reduce inflation from 9.09% in 2012 to 4.08% in 2014. Besides, the SBV achieved its inflation targets in 2015-2019 and moderate economic growth.

Table 3.1. Monetary policy Targets and Performance in Vietnam

Year	Inflation (%)		GDP growth (%)	
	Target	Actual	Target	Actual
2000	6	-1.71	5.5-6	6.79
2001	<5	-0.43	7.5-8	6.19
2002	3-4	3.83	7-7.3	6.32
2003	<5	3.23	7-7.5	6.90
2004	<5	7.75	7.5-8	7.54
2005	<6.5	8.28	8.5	7.55
2006	<8	7.42	8	6.98
2007	<8	8.34	8.2-8.5	7.13
2008	<10	23.12	8.5-9	5.66
2009	<15	6.72	5	5.40
2010	7-8	9.21	6.5	6.42
2011*	<7 (15-17)	18.68	7-7.5	6.41
2012	<10	9.09	6-6.5	5.50
2013	8	6.59	5.5	5.55
2014	7	4.08	5.8	6.42
2015	<5	0.63	6.2	6.99
2016	<5	2.67	6.7	6.69
2017	<4	3.52	6.7	6.94
2018	<4	3.54	6.7	7.20
2019	<4	2.80	6.6-6.8	7.15
2020	<4	3.23	6.8	2.91
2021	4	1.84	6	2.58
2022	4	3.16	6-6.5	8.02
2023	4.5	-	6.5	-

Source: SBV

Note: (*) In 2011, the initial target was set at 7%, then in June 2011, the target was increased to 15-17%.

During the outbreak of COVID in 2020 and 2021, monetary policy objectives were implemented flexibly, prioritizing supporting the stagnant economy. This was acceptable because inflation pressure was benign and well below the target at that time while economic growth was slow and sluggish, continuously failing to reach the growth target. However, since 2022, the whole economy reopened in the post-COVID period, combined with global price shocks and supply bottlenecks, causing high inflation risks. This forced the authorities to raise the inflation target to 4.5% for 2023 after years of targeting 4%. In this context, the goal of monetary policy should focus more on stabilizing inflation.

Briefly, the new Law of the SBV of 2010 (effective from January 2011) and the government´s orientation of more focus on price stability were essential steps in the right direction toward the IT framework. However, Vietnamese authorities still need a firm and lasting commitment to price stability (e.g., via an official IT framework) as an overarching objective of monetary policy. In turn, price stability will help to promote sustained economic growth.

Intermediate objectives

In general, the main intermediate objectives of the SBV are credit growth and total liquidity (M2). From 2012 to 2015, besides the targets on money volume (M2 and credit), the SBV has added the price target (i.e., the interest rate and exchange rate) as supplementary intermediate objectives of monetary policy. Specifically, the SBV announces orientations for M2 growth and credit growth, targets gradually reducing deposit and lending interest rates, and stipulates the exchange rate adjustment degrees. For example, Instruction No. 01/CT-NHNN on January 27, 2015, which the SBV issued to implement the government's Resolution, stated that "The SBV carries out monetary policy to attain the set inflation target of below 5%, strengthen the macroeconomic stability, support the goal of economic growth at 6.2%, keep the stable interest rate level, and lower the medium and long-term lending rates by 1-1.5% per annum". Besides, the SBV set "targets for the total liquidities growth at 16-18%, credit growth at 13-15%, and maintain the exchange rate stability with the adjustment degree below 2 percentage points". However, given a new exchange rate mechanism since 2016, the intermediate objective is to keep the exchange rate within a fixed adjustment (e.g., the adjustment level under 2 percentage points) is no longer mentioned, while the SBV only refers to the targets for the total liquidity and credit outstanding as intermediate targets. Specifically, the intermediate targets for 2021 are indicated as follows "In 2021, the goal for M2 growth was set at approximately 12 percent,

while the target for credit growth was around 12 percent, subject to modifications in accordance with actual circumstances" (SBV, 2021).

Table 3.2. SBV intermediate targets and actual performance

Year	M2 growth (%)		Credit growth (%)	
	Target	Performed	Target	Performed
2000	38	38.96	28-30	38.14
2001	23	25.53	20-25	21.44
2002	22-23	17.70	20-21	22.20
2003	25	24.94	25	28.41
2004	22	30.39	25	41.65
2005	22	29.65	25	31.10
2006	23-25	33.59	18-20	25.44
2007	20-23	46.12	17-21	53.89
2008	32	20.31	30	25.43
2009	18-20	28.99	21-23	37.53
2010	25	33.30	25	32.43
2011	15-16	12.07	20	14.70
2012	14-16	18.46	15-17	8.85
2013	14-16	18.85	12 (adjusted to 13%)	12.52
2014	16-18	17.69	12-14	11.8
2015	16-18	13.50	13-15 (adjusted to 18%)	17.26
2016	16-18	18.38	18-20	18.25
2017	16-18	14.97	18 (adjusted to 21%)	18.17
2018	16	12.44	17	13.89
2019	13	14.78	14	13.65
2020	13	14.53	14	12.17
2021	12	10.66	12 (adjusted to 14%)	13.61
2022	12	6.7	14 (adjusted to 15%)	14.5

Source: SBV, GSO

As such, the monetary policy in Vietnam has been considered a monetary targeting framework because to achieve the ultimate goals set by the government and NA; the SBV sets the annual intermediate goals as oriented targets for total liquidity M2 and credit growth rate. However, the SBV found it challenging to achieve its intermediate targets, hindering the attainment of the final inflation goal of monetary policy (Lai, 2015). Particularly, there was a relatively big gap between the goals set for M2 and credit growth compared to the actual achieved, especially before 2011 (as shown in Table 3.2). Since 2011, the SBV has imposed an administrative measure that places caps on credit growth for each bank to ensure the aggregate credit target[16].

[16] However, the credit growth targets were adjusted and raised many times to deal with the credit pressure of banks (e.g., in 2015, 2021, 2022).

Meanwhile, controlling the M2 growth rate has been unstable, and there are still disparities between actual figures and targets. For example, in 2018, the actual M2 growth rate was only 12.44%, well lower than the central bank's target of 16%. Meanwhile, in 2020, the actual M2 growth rate was 14.53%, higher than the set target of 13%.

Notably, the growth rate of M2 in 2022 reached a historic low of 6.7%, significantly below the target of 12%, showing the inefficiency in achieving the intermediate target of the money supply. One of the main reasons is the SBV's unpredictable and suddenly tight monetary policy, combined with the government's slow disbursement of public investment capital. Particularly, the sudden hike in policy interest rates in late September and early October 2022, despite the previous commitment to keep it stable, contributed to instability in the financial market, especially security markets. In the meantime, given that the Federal Reserve raised interest rates, causing the USD/VND exchange rate to increase considerably, the SBV sold about USD 22 billion in the third and fourth quarters of 2022 from FX reserves, reducing the amount of money in the banking system. These led to a decline in the money supply growth.

Besides, the intermediate goal of monetary volume can hardly be guaranteed when the money multiplier is increasingly unpredictable. Specifically, the average money multiplier was relatively stable from 2000-2004 to 2005-2009 (around 4.32-4.49), but jumped to 8.37 for 2010-2014, then quickly decreased to 5.52 for 2020-2022.

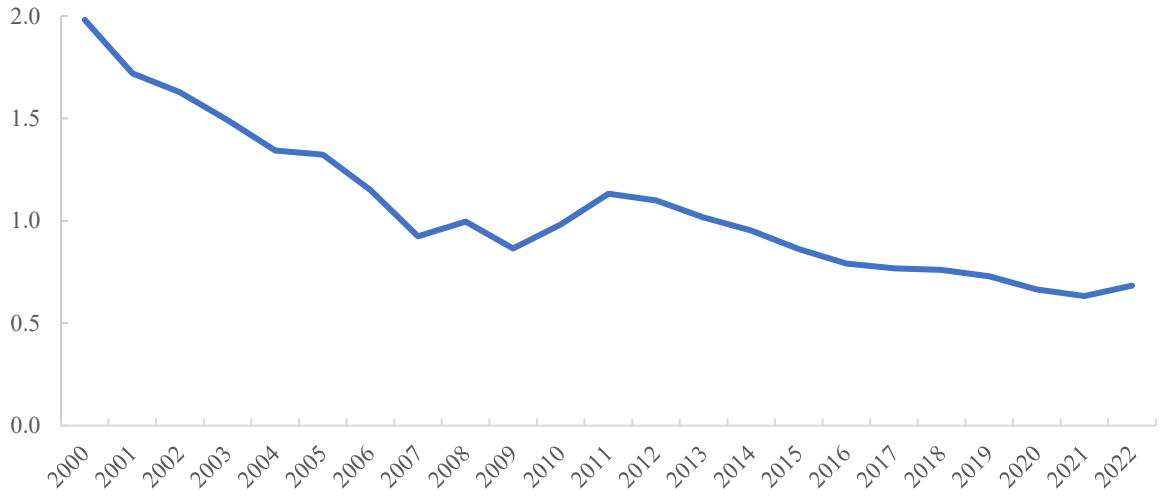
Table 3.3. Average money multiplier index over periods in Vietnam

Period	Average Index
2000-2004	4.32
2005-2009	4.49
2010-2014	8.37
2015-2019	7.50
2020-2022	5.52

Source: IMF, Author's Calculation

Furthermore, the instability of the velocity of money makes the relationship between money supply and macro variables, including inflation and economic growth, increasingly lacking. As seen in Figure 3.5, the velocity of M2 in Vietnam rapidly decreased from about 2.0 in 2000 to 0.86 in 2009, increased to 1.13 in 2011, continuously fell to 0.63 in 2021, then increased to about 0.70 in 2022. Over time, the movement of this index shows a considerable downward trend. This makes targeting the money supply growth as an intermediate goal less reliable.

Figure 3.5. The velocity of M2 in Vietnam



Source: IMF

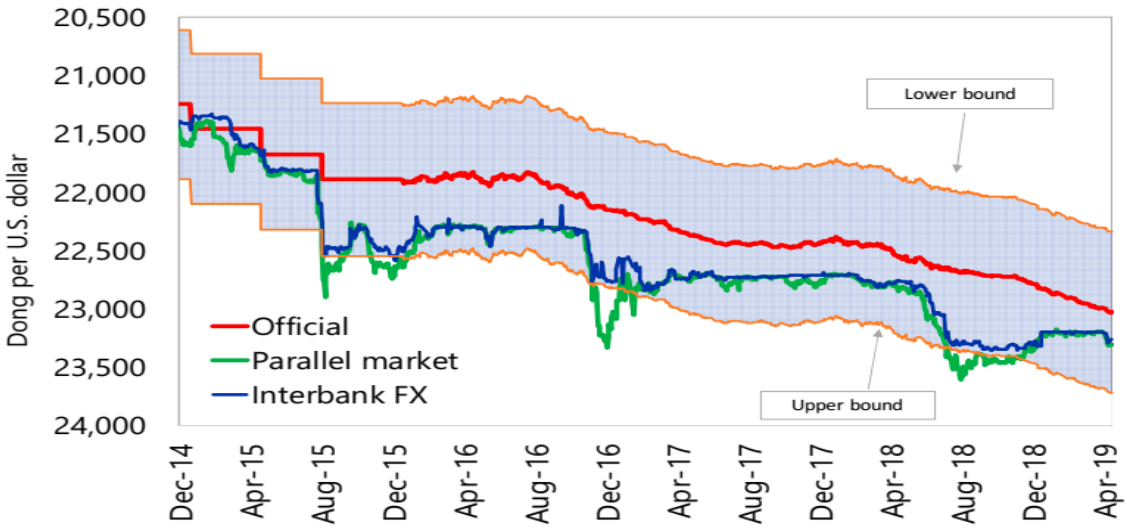
Note. Velocity is calculated by dividing GDP by end-of-period total liquidity (M2).

Meanwhile, the IMF (2022a) has classified Vietnam into a group of countries pursuing monetary policy under a pegged exchange rate regime, although the SBV did not consider itself to follow an exchange rate targeting regime. In fact, the SBV has implemented a cautious monetary policy along with commitments to maintaining a stable exchange rate. Notably, it has announced the reference exchange rate of VND to the USD with a specific transaction band. Besides, the exchange rate's fluctuation band was stipulated based on the socioeconomic situation and the SBV operational plan. More specifically, the trading band was very narrow in 2006-2007, with only +/-0.25% of the official rate, but then gradually expanded. Remarkably, the exchange rate trading band was widened three times in 2015, first from +/-1% to +/-2%, and then to +/-3%, at the same time adjusting the reference exchange rate up by 3% (SBV, 2015). Hence, despite announcing a managed floating exchange rate strategy de jure, the Vietnam Dong (VND) de facto has been pegged closely to the U.S. dollar (USD) with a relatively narrow band. This caused the emergence of an illegal parallel exchange rate market, dampening the effectiveness of the SBV's policies. Besides, the SBV set the target of the annual exchange rate changes below 2% (SBV, 2015). However, due to difficulties in maintaining this target, since 2016, the SBV has no longer specified the target of exchange rate stability as an immediate monetary policy objective.

More specifically, due to the pressure from Vietnam's increasing integration into the global economy with external financial volatilities, a thin FX reserve to defend the exchange rate, pressure from the parallel market and official FX market, and the fluctuations of major

currencies in the international market (especially the US dollar and the Chinese Yuan); the SBV decided to make an important change in exchange rate management. Specifically, a more flexible exchange rate mechanism has been adopted in Vietnam since early 2016 in accordance with Decision No. 2730/QĐ-NHNN dated 31/12/2015. Accordingly, the SBV determines and announces the official central rate of USD/VND daily to closely reflect market movements, replacing the previous system in which the SBV only changed the reference exchange rate a few times per year (as shown in Figure 3.6). This indicates the commended effort of the SBV toward a more flexible exchange rate regime. More specifically, daily announcements of the mid-point exchange rate are made based on (i) the interbank-weighted exchange rate, (ii) evolvements in the exchange rate of some currencies that are key trading, credit, and investment partners of Vietnam, and (iii) monetary and macroeconomic balances, as well as monetary policy objectives. The exchange rate of USD/VND may move around the SBV-announced exchange rate with a daily band of +/3%. Furthermore, instead of releasing only the exchange rate USD/VND as in the past, the SBV additionally announces the cross-exchange rates of VND with other strong currencies (i.e., Chinese Yuan, Euro, Japanese Yen, South Korean Won, Singapore Dollar, Taiwan Dollar, and Thai Baht). This is a crucial step to reduce the reliance on USD fluctuations in exchange rate policy and prevent dollarization in the economy.

Figure 3.6. Exchange rate movement in Vietnam



Source: IMF, 2019b

Note: A downward movement denotes a depreciation of the VN dong.

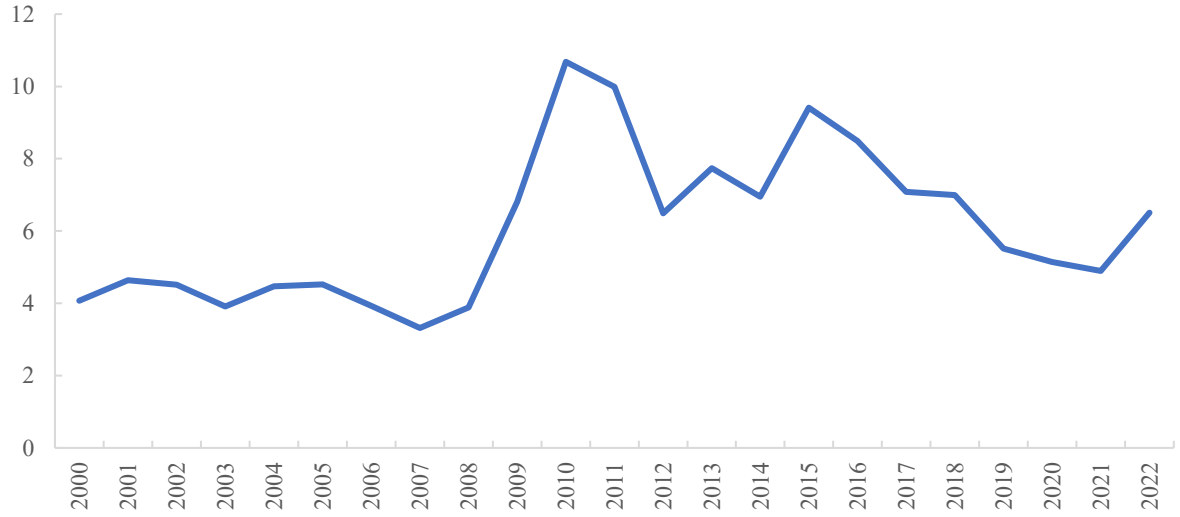
Notably, although Vietnam's de facto regime has been categorized as a soft peg to the USD, it has been gradually more flexible and reclassified from a stabilized arrangement to a crawl-like

one [17]since March 2020 (IMF, 2022a; IMF, 2023a). In July 2021, the SBV adjusted the central exchange rate of USD/VND to allow the local currency to slightly appreciate by about 1.3% against the USD) after years of a constant depreciation trend. In addition, the SBV has utilized more FX forward purchase contracts since 2021 and introduced 3-month forward sell contracts on the FX market in early 2022, after years of using only spot contracts. Besides, in October 2022, it expanded the spot exchange rate trading band from +/-3% to +/-5% by Decision No. 1747/QD-NHNN, facilitating exchange rate flexibility.

Operational Objectives

To control the total liquidity M2 following its target, the SBV controlled the base money as the operational target. Accordingly, the central bank annually submitted to the government for approval of the additional money for the economy and then managed the amount of money through monetary policy operations (e.g., buying foreign currency, refinancing credit institutions, or covering the temporary State budget shortfall) (To et al., 2012; SBV, 2020). These actions changed the monetary base (MB), influencing the money supply.

Figure 3.7. Money Multiplier of Vietnam



Source: IMF, Author´s illustration

However, the practice showed that the SBV's management of the monetary base was ineffective because the link between MB and M2 was not tight. The reason is that the effectiveness of the

[17] According to the IMF classification, although both regimes require that the exchange rate not fluctuate by more than a 2% margin over at least six months, the crawl-like requirement calls for a minimum rate of change that is higher than under a stabilized arrangement. Specifically, the crawl-like regime requires an annualized rate of change of at least 1%, providing that the domestic currency depreciates or appreciates sufficiently and continuously (Habermeier et al., 2009).

operational objective MB depended on macroeconomic and monetary developments and the money multiplier, which was often unstable and unpredictable. Notably, as shown in Figure 3.7, the money multiplier in Vietnam indicated a significant volatile trend over time.

Given the shortcomings of focusing on the monetary base, starting from 2012, the SBV has gradually combined the target of MB with the use of interest rates on the interbank market as an additional operational target. Specifically, from 2012 to 2015, the SBV mainly used open market operations (OMOs) to regulate liquidity, then affect the interbank interest rates, contributing to stabilizing the exchange rate and the FX market (SBV, 2015). Since 2016, given the new and more flexible exchange rate management mechanism according to domestic and international market movements (as mentioned above), the target of interbank interest rates has been set in the direction of supporting liquidity (e.g., interbank interest rates at low levels) (SBV, 2020).

In general, despite a system of the monetary policy sub-objectives of the SBV, the mechanism between the sub-objectives has not been clearly formed. Specifically, the final, intermediate, and operational goals were still inconsistent between periods, and the relationship between the sub-objectives was still lacking.

3.2.3. Instruments of monetary policy

Legally, the Prime Minister and the SBV governor choose tools to implement national monetary policy. Particularly, the monetary policy tools include refinancing operations, interest rates, open market operations, reserve requirements, exchange rates, and other measures following government regulations. In practice, the SBV operates appropriate monetary instruments and administrative measures in each specific period to achieve many monetary policy goals.

(i) Refinancing

Refinancing is a type of credit extension used by the SBV starting in late 1999 to help credit institutions (CIs) access short-term loans and payment facilities. With the enactment of the Law on the SBV 2010, refinancing tools have become more diversified in form (e.g., extending loans with valuable paper guarantees, discounting valuable papers, re-lending based on credit records, refinancing with special bonds VAMC- Vietnam Asset Management Company), facilitating liquidity support for CIs when they cannot access capital through other channels.

In the year 2006 - 2007, although the available capital of the whole system of CIs was excessive, it was concentrated in a few state-owned commercial banks; the interbank market was not smooth, so the SBV still refinanced to support several credit institutions with temporary liquidity shortages, and at the same time, actively limited the pledge of valuable papers to control the M2 growth rate. In 2008, the compulsory issuance of SBV bills, the increase of the reserve requirement ratio, and expanding the type of deposit for reserve requirement to curb high inflation made the liquidity of credit institutions difficult. Therefore, to ensure the system's safety and stabilize money markets, along with the offer to buy valuable papers through OMOs, the SBV refinanced to support liquidity for credit institutions, especially small commercial banks. Entering the 2009-2010 period, the credit growth rate was quite high at 37.53% in 2009 and 32.43% in 2010, some CIs often suffered from a shortage of capital balance. On the Lunar New Year in February 2010 and January 2011, when the economy's demand for payment increased, many CIs faced liquidity difficulties. At these times, in combination with OMOs, the SBV used refinancing as an important tool, actively supporting CIs to ensure liquidity and stabilize the money market (SBV, 2011). Besides, by implementing Decree 41/2010/ND-CP in April 2010 of the government, the SBV promoted the refinancing of CIs to lend to the agricultural and rural sectors. From the end of 2011-2012, implementing the government's resolutions on prioritizing controlling inflation, ensuring social security, stabilizing the macro-economy, ensuring the CIs' liquidity and safety of the credit and banking system, restructuring the system of CIs; the SBV reduced the volume of refinancing, focusing only on refinancing to support liquidity during the Lunar New Year and supporting a number of weak joint-stock commercial banks at risk of insolvency in the process of restructuring (SBV, 2012). The term of refinancing for restructured CIs was usually 3-6 months, longer than the period of liquidity support during the Lunar New Year (1-3 months).

In 2013, given the good liquidity condition, although Vietnam Asset Management Company (VAMC) conducted a repurchase of Non-Performing Loans (NPLs), there was still no need to refinance CIs with special bonds. Instead, the SBV only disbursed refinancing for housing support according to Resolution 02/NQ-CP of the government for state-owned commercial banks. Since 2015, in addition to refinancing to support social housing under the Resolutions of the government, the SBV has refinanced based on special bonds of VAMC for CIs to support their operating capital in the process of NPLs settlement by the provisions of the government with a term of 6 months, and with a preferential refinancing rate (lower than the normal refinancing rate of 2%/year). Meanwhile, refinancing based on credit records was not almost

conducted because CIs almost did not need to borrow through these channels. In the context of the COVID pandemic in 2020 and 2021, the SBV's refinancing programs concentrated on refinancing Viet Nam's Bank for Social Policy to lend to employers for the purpose of restoring production, supporting workers during work stoppages, and refinancing the CIs that lent to Viet Nam Airlines Corporation (SBV, 2021).

In general, the SBV operated the refinancing tool cautiously. Still, the refinancing operations in the past time have not significantly affected the demand for loans from commercial banks.

(ii) Interest rates

The SBV announces refinancing rate, discount rate, base rate, and other rates to carry out monetary policy and avoid high-interest rate lending. Besides, it can specify the mechanism for controlling the interest rates imposed on lending-borrowing transactions between the credit institutions (CIs), as well as between the CIs and the clients and other credit transactions in the event of unanticipated changes in the money market (Article 12, Law on the SBV 2010).

Specifically, the base rate (also called "prime rate") was used as the reference interest rate for banks' mobilizing and lending activities. Accordingly, the lending and deposit interest rates must not exceed 150% of the announced base rate (Article 476 Civil Code, 2005). However, the base rate instrument was ineffective and has been kept unchanged at 9% since 2011 (To et al., 2012; Lai, 2015). Indeed, since March 2011, the SBV has not announced the base rate periodically but switched to imposing the interest rate ceiling. After that, the Civil Code 2015 (in effect from January 1, 2017) officially no longer stipulates the base rate as the reference rate in determining interest rate ceiling. Accordingly, instead of controlling loan rates not exceeding 150% of the base rate as in the Civil Code 2005, the new law has set a precise control number of at most 20 %/year unless otherwise specified by law. Meanwhile, contrary to the base rate, discount rate and refinancing rate have been among the most often employed instruments by the SBV since 2000. Discount facilities and refinancing facilities operate on almost the same basis, but the valuable papers applicable in a refinancing facility are broader (Pham, 2016). In particular, the discount rate is utilized for the primary refinancing operations of the SBV, which is the short-term acquisition of bonds. Meanwhile, marginal refinancing facilities are subject to the refinancing rate (e.g., overdraft permission, short-term mortgage loans, and overnight loans) because of their higher risk. Due to this feature, the refinancing rate is always higher than the discount rate and is implicitly referred to as the ceiling rate, while the discount rate is implicit

as the floor rate of the SBV. In addition to setting policy rates, the SBV has applied some administrative methods to manage lending and deposit rates.

Regarding actual operations of interest rate instruments, in 2006 and 2007, the SBV kept policy interest rates unchanged to stabilize market interest rates and avoid unfavorable impacts on economic growth. In February 2007, SBV lifted the regulation on the interest rate ceiling on USD-denominated deposits and implemented the mechanism of negotiated rates in response to the pressure from the appreciation of VND in the context of sharply increasing foreign capital flows into Vietnam, thereby ensuring to be in line with the domestic capital demand and supply as well as international market interest rates. In 2008, in the context of a volatile domestic economy, high inflation along with a surge in world commodity prices, interest rates in the money market increased sharply. Therefore, the SBV moved from negotiated-rate mechanisms to operating according to the base interest rate[18], combined with the simultaneous increase of operating interest rates to contain inflation. Thanks to the interest rate adjustments combined with other monetary policy tools, from October 2008, inflation began to decrease, creating room for the SBV to gradually reduce policy interest rates to support the economy after the GFC and the global recession.

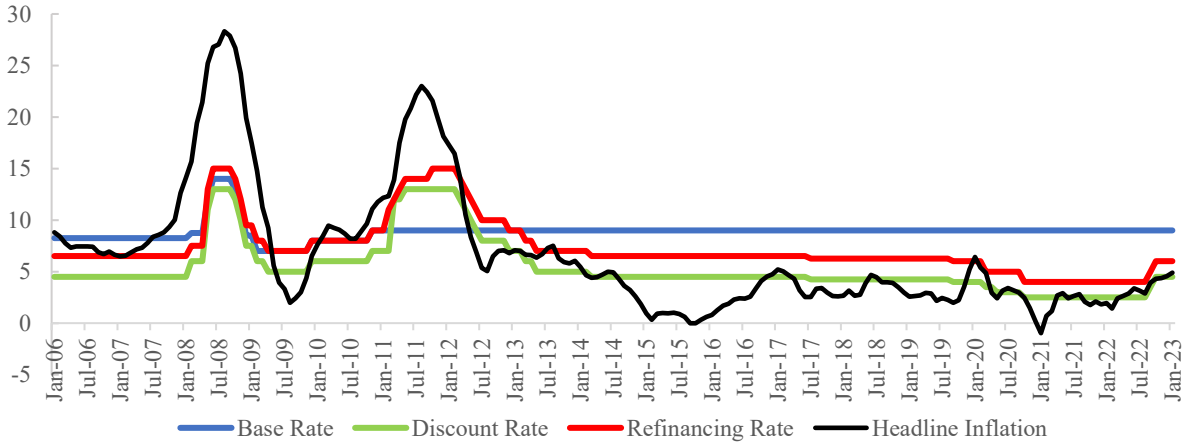
From the end of 2009 to 2011, inflation tended to increase again; therefore, the SBV continuously raised its policy interest rates, set the interest rates ceiling on deposits denominated in VN dong as well as in foreign currency but applied the negotiated mechanism on lending rates to ensure the interest rate differential between VN dong and US dollar at an appropriate level, contributing to limiting foreign currency hoarding, creating favorable conditions for banks buy a large amount of foreign currency and stabilize the exchange rate. Simultaneously, to guide market expectations, the SBV actively increased information transparency on monetary policy, promoted communication, and committed to managing interest rates and exchange rates according to the orientations set out at the beginning of the year. As a result, since May 2011, the market interest rates tended to decrease gradually, and by end-2011, the deposit rates for all terms were close to the ceiling of 14%/year, and lending rates of CIs decreased to 17-19%/year.

From 2012 to 2014, amid decreasing inflationary pressure, the SBV gradually reduced its policy interest rates, mainly refinancing and discount rates to support liquidity for the economy (e.g., cutting the refinancing interest rates nine times with a total reduction of 850 basis points from February 2012 to March 2014), as shown in Figure 3.8. From April 2014 until June 2017, the

[18] As mentioned above, the interest rate for a loan must not exceed 150% of the base rate.

SBV kept policy rates stable due to low inflation and stable interest rates for years. On July 7, 2017, the SBV lowered policy rates by 0.25% to assist CIs, aiming at reducing the lending interest rates according to the government's directions (SBV, 2017). After that, in September 2019, the SBV continued to cut operating rates by 0.25%, including discount rate, refinancing rate, the bid rate of valuable papers in OMOs, and the interest rate applicable to overnight loans in inter-bank electronic payment of the SBV for CIs. This was the first time in 2 years since 2017, the SBV decided to reduce policy rates.

Figure 3.8. The SBV´s Policy Rate Operations (percent)



Source: SBV, IMF

Note: The basic rate has not been updated by the SBV since January 2011, so it is unchanged at 9%.

Besides, the SBV gradually loosened regulations on the interest rate ceiling and gradually shifted to regulating interest rates according to market signals, ensuring compliance with international practices. Since 2019, the SBV has only set interest rate ceilings of 0.8%/year for demand deposits with maturities of less than a month and 5.0%/year for deposits with terms of between a month and six months; while interest rates for deposits with terms over six months are decided by CIs based on supply and demand in the market (Decision No. 2415/QD-NHNN of the SBV on November 18, 2019). At the same time, from the end of 2015, the maximum interest rate of foreign currency-denominated deposits for organizations and individuals has been 0%/year to implement the government's anti-dollarization policy. Regarding lending rates for VN dong, the negotiated-rate mechanism between CIs and customers has been stipulated in the Law on Credit Institutions and Circular No. 39/2016 of the SBV. However, the SBV still stipulates maximum interest rate caps for short-term loans of priority areas to promote economic growth under the government's direction. Particularly, caps for short-term lending rates in VN dong for loans to serve rural and agriculture sectors, supporting industries, exports, high-tech

businesses, and small and medium-sized enterprises was 6.0 %/year; short-term loan rate ceiling in VND of microfinance institutions and the people's credit funds and for these loans was 7.0 %/year in 2019.

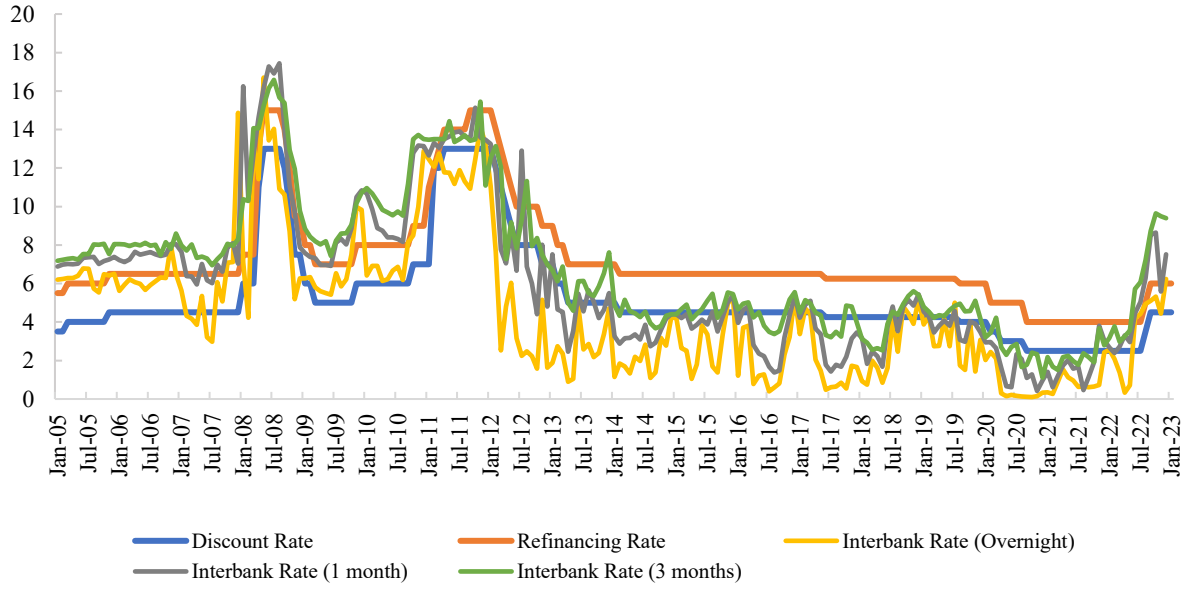
In 2020, amid the COVID-19 outbreak that severely impacted the economy, the SBV took measures to support businesses and households by reducing the policy rates three times in March, May, and October 2020. The total reduction was 150 basis points for the discount rate and 200 basis points for the refinancing rate. It aimed to incentivize banks to lower their market interest rates, facilitating access to credit for businesses and households during the pandemic. Additionally, the SBV decreased the deposit rate ceiling for maturities of less than 6 months by 0.6-1%/ year and the lending rate cap by 1.5%/ year for priority sectors. This resulted in an average decrease of 1% per year in lending interest rates. Moreover, the SBV implemented credit support policies by directing CIs to restructure debt repayment terms, extend payment terms, and exempt or reduce customers' interest and fees. In 2021, the SBV maintained an accommodative monetary policy, keeping the policy interest rates at low levels. Particularly, the discount rate remained at 2.5%, and the refinancing rate remained at 4% during 2021 and until September 2022 to support economic recovery.

Entering 2022, in the face of increasing inflation and exchange rate pressure, the SBV, after many times committed to keeping interest rates stable during the first 9 months of the year, was forced to raise policy rates by 100 basis points at the end of September and continued to raise policy rates by another 100 basis points four weeks later. At the same time, the SBV increased the deposit rate ceiling for terms of less than 1 month from 0.2 %/year to 0.5 %/year, then to 1 %/year in October 2022. The deposit rate ceiling for terms from 1 month to 6 months was also raised from 4%/year to 5%/year, then to 6%/year. This led to tight liquidity and high competition for credit flows, thereby causing certain disturbances to the banking and financial system. Specifically, all commercial banks increased deposit rates by 0.4-1%/year right after SBV's decision in September and continued to raise interest rates by two or three more times in October. Besides, in the interbank market, overnight VND lending rates in early October soared to around 8%/year – the highest rate in the past 10 years, which far exceeds the refinancing rate (which is considered a ceiling interest rate), making liquidity conditions even more difficult. In response, the SBV injected short-term liquidity via OMOs to alleviate liquidity pressures. It can be seen that although SBV's policy rate increase is inevitable under high inflation pressure and substantial exchange rate depreciation, the SBV could have made it

smoother, causing less liquidity volatility if the rate hike was pre-announced and gradual rather than two sudden and sharp increases in a row.

Concerning the evaluation of the operations of SBV´s interest rate policies, the SBV has used interest rate tools more flexibly to stimulate economic growth and stabilize inflation. However, the interest rate management results were not as effective as expected. In particular, the relationship between interbank interest rates and the policy interest rates of the SBV (refinancing interest rate, discount rate) was still loose, sometimes separated (Figure 3.9). Although the refinancing rate was oriented to be the ceiling rate, while the discount rate was referred to as the floor rate of the SBV; they did not form a real interest rate corridor. The explanation is in essence, the discount rate and the refinance rate are similar forms of the central bank's lending facility. Specifically, both facilities (discount and refinancing) employed the bonds or bills as collateral and had similar access requirements.

Figure 3.9. Vietnam: Policy and Short-term Interbank Rates (percent)



Source: SBV, Author´s Illustration

Note. Interest rate data is end-month data.

Moreover, refinancing rates and discount rates did not really promote their role in regulating interbank interest rates because of their operational limitations. Particularly, the subjects of refinancing and discount facilities of the SBV were still limited (e.g., mainly state-owned banks). Meanwhile, small commercial banks hold very few short-term valuable papers or hold long-term papers, so they do not have enough conditions to access refinancing activities of the SBV and then must borrow at high rates on the interbank market because of the urgent need

(Lai, 2015). These reduced the effectiveness of discount and refinancing rates. Therefore, the two interest rates are unable to effectively create an interest rate frame on the interbank market (Pham, 2016). Specifically, as indicated in Figure 3.9, the interbank rates were hardly in the range of discount and refinancing rates. Notably, the interbank interest rates were well below the lower bound of the interest rate corridor from 2014 to 2020. Still, they have skyrocketed since mid-2022, well above the upper bound of the corridor. Lastly, the still use of administrative tools in interest rate management (that is, imposing the interest rate ceilings on deposits for demand and short-term less than 6 months, caps on lending interest rates for priority areas, setting credit growth limits for banks) hampers the liberalization process of interest rate in Vietnam, may distort the market conditions and impair the transmission effectiveness of interest rate channel although the regulations have been loosened than in the past (IMF, 2019b; IMF, 2022e).

(iii) Open market Operations (OMOs)

Open market operation tool has been conducted since 2000 and has gradually become one of the most important tools of the SBV. Particularly, this tool has been increasingly improved from the legal framework to technological infrastructure and diversification of transactional goods over 20 years (e.g., Decision No. 11/QD-NHNN in 2010 on the list of valuable papers for OMOs, Circular No. 42/2015/TT-NHNN in 2015 providing detail regulations on members, bidding methods… for OMOs, Regulation for OMOs procedures No. 01/QT-NHNN in 2016). Accordingly, the valuable papers traded via OMOs include Treasury bonds, Treasury bills, SBV bills, Government bonds, bonds of local authorities, and other valuable papers under the regulations of the SBV. Also, members participating in OMOs have been broadened, ranging from state-owned banks to joint-stock commercial banks, joint-venture banks, and foreign bank branches in Vietnam.

Notably, the SBV has operated the OMOs proactively and flexibly in both directions of buying and selling valuable papers, adjusted the amount of money pumped in and withdrawn via OMOs as well as the bid/ask interest rates offered of valuable papers on OMOs to regulate the liquidity of the banking system and credit institutions, orienting interbank interest rates, thereby contributing to controlling market interest rate fluctuations, supporting exchange rate stabilization, and signaling the operating of monetary policy (SBV, 2020). For example, in the period 2007-2008, amid high inflationary pressures, in addition to raising reserve requirement ratios and policy rates, the SBV flexibly operated OMOs to both achieve the objectives of

controlling inflation and stabilizing the currency while safeguarding CIs' liquidity conditions. In particular, the SBV offered SBV bills with terms ranging from 14 to 364 days to drain liquidity, supporting inflation goals. At the same time, the SBV periodically organized auctions to buy short-term valuable papers (i.e., maturities of 7, 14, 21, and 28 days) to help CIs with temporary capital shortages guarantee solvency, specifically at the moments the SBV increased reserve requirement ratios and policy rates. Besides, the average success volume per session for bid/ask operations was VND 855/767 billion in 2007 and VND 947/305 billion in 2008, respectively. Besides, the number of trading sessions was more than 400 sessions. However, due to the lack of capital, CIs participated in the auction with a high bidding interest rate, so the winning interest rate increased from 8 %/year to 15 %/year, sometimes up to 30.1 %/year in early 2008. Against this backdrop, the SBV switched to applying the bidding method of volume-based, and uniform interest rate-base, so the interest rates in OMOs gradually decreased from 15%/year to 9%/year by end-2008, almost equal to the market interest rates.

Table 3.4. Open market operations in Vietnam

Year	Total purchase (VND billion)	Total sale (VND billion)	Number of sessions
2007	61133	356844	355
2008	947206	88860	402
2009	966980	102	329
2010	2101420	7295	491
2011	2801253	0	431
2012	449922	174000	378
2013	179386	254863	418
2014	101200	353616	484
2015	403490	233350	388
2016	367400	722600	359
2017	578540	642620	383
2018	645572	846112	444
2019	507265	1518784	405
2020	25704	146971	283
2021	61244	0	251

Source: SBV

In the 2009–2011 period, the loosening of monetary policy was implemented to combat the economic downturn and ease the difficult and uneven liquidity of CIs after a period of credit booms. Accordingly, the SBV mainly conducted auctions to buy valuable papers with short-term (i.e., 7, 14, and 28 days) aims at injecting money into the economy, as evidenced by total purchases significantly surpassing total sales as in Table 3.4. Meanwhile, to ease a rebounding of inflation, from July to December 2009, the SBV sold the SBV bills three sessions per week, terms of 3 months and 6 months to absorb money from CIs having excess liquidity. From October 2010 to the beginning of September 2011, inflation showed signs of increasing up to two digits, the SBV cautiously operated OMOs in the direction of reducing the bid tenor from 28 days to 7 days. The bid rate was also adjusted to increase to 15 %/year. From the end of September 2011, inflation showed signs of easing. Therefore, to support liquidity for CIs and facilitate interest rate reduction, the SBV added the bid transactions with a term of 14 days and reduced the interest rate in OMOs from 15 %/year to 14 %/year. Notably, transactions during this period were mainly on the bid side, with a high average success volume per session at VND 3781 billion and VND 4297 billion in 2009 and 2010, respectively, and at the peak of VND 6499 billion per session in 2011. However, monetary policy seemed too loose with significant net injection via OMOs, contributing to high inflation in 2011.

From 2012 to 2019, the OMOs have continued to be a crucial tool to help the SBV regulate monetary policy and stabilize market interest rates (SBV, 2019). Besides, instead of pumping too much liquidity as in 2009-2011, the SBV actively implemented both directions of buying and selling valuable papers to stabilize the money market, control inflation, and maintain exchange rate stability. Specifically, given that the channels to absorb liquidity were still limited, the SBV offered the SBV bills in OMOs to absorb liquidity from the CIs having surplus available capital with a variety of terms ranging from 7 days to 182 days. Meanwhile, given that the system of CIs has been in the process of restructuring; to safeguard the system's liquidity and stabilize interest rates at certain times of increased money demand (e.g., close to the New Year and Lunar New Year), the SBV daily offered to buy valuable papers with a short term (mainly 7 days), the minimum volume was VND 1000 billion per session to signal the stability of the money market and the SBV's willingness to support CIs. Moreover, the bid rate was adjusted down gradually from 14% in January 2012 to 4.75% in February 2018, contributing to psychological stability and interest rate stabilization. Notably, given the new exchange rate mechanism from the beginning of 2016, the psychology of foreign currency hoarding has been gradually reduced, helping to stabilize the FX market. These created

favorable conditions for the SBV to conduct OMOs to maintain abundant liquidity and low-interest rates.

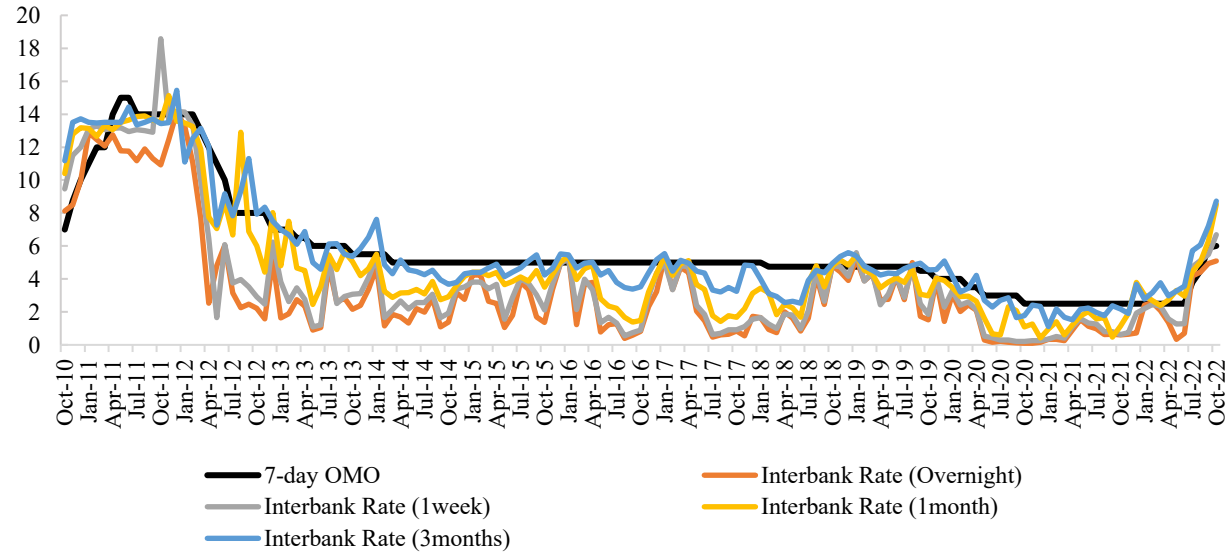
Amid the COVID pandemic, the SBV continuously reduced the 7-day bid rate on OMOs from 4.0 %/year in February 2020 to 2.5 %/year in October 2020 to support the reduction of market interest rates. After that, in 2021, while the interest rate policy was kept fixed, OMOs became the critical tool to help the SBV implement an accommodative monetary policy, supporting the economy during the outbreak of COVID. Specifically, the SBV constantly offered to buy valuable papers at a low rate of 2.5 %/year and, at the same time, did not offer to sell any SBV bills to promote favorable liquidity conditions for the market. Accordingly, the total purchase volume was about VND 61244 billion, effectively helping the economic recovery (SBV, 2021). Consequently, favorable liquidity conditions with consistently low interbank interest rates helped banks manage deposit and lending rates well, thereby supporting businesses and people to withstand the pandemic.

Entering 2022, amid surging inflation and exchange rate pressure, the SBV flexibly implemented both buying valuable papers and issuing bills and gradually switched from net injection to draining money from the market via OMOs. Specifically, the SBV officially reopened selling off SBV bills in June 2022 after 2 years of freezing. Accordingly, the SBV withdrew about 1 trillion VND via issuing bills in early August. This move maintained the interest rate differential between the VND and the USD, reducing exchange rate pressure amid the Fed's interest rate hike. Consequently, the overnight interbank rate increased from 0.3-0.7% in June 2022 to 4.19% in end-July and around 5% in August and September 2022. Besides, the SBV changed the operating mechanism from volume auctions with a fixed rate to competitive interest-rate auctions with a floor rate of 3.5% in August 2022 to better reflect market demand and keep interbank interest rates at high levels. In fact, temporarily changing OMO's regular auction to interest rate bidding aims to limit speculative dealing in the differential between the OMOs rates and the interbank rates, given increasing interbank rate pressure while the OMO bid rate was at a low of 2.5%. At that time, the SBV was trying to maintain the policy rates, so it intervened via OMOs first to regulate the money supply.

By the end of September 2022, due to considerable inflationary pressures and excessive exchange rate depreciation, the SBV decided to raise policy rates, causing the interbank market to be even more volatile, with the overnight lending rate jumping to 8.4% on October 5th - the highest level in the past 10 years. Against this backdrop, the SBV provided short-term liquidity

through OMOs to help the interbank interest rates cool down quickly. Notably, the overnight interest rate dropped to 5.32 %/year in end-November. This movement shows that the liquidity of the system has stabilized again. Since mid-December 2022, inflationary pressure continuously surged, forcing the SBV to switch to net withdrawing in the OMOs with a scale of about VND 75.500 billion, reversing the trend of net injection of nearly VND 72.000 billion in October and November. However, on the side of the money injection, there was still a positive signal from the SBV to support liquidity for CIs in need by purchasing value papers with a term of up to 91 days, a rare action in the past.

Figure 3.10. Vietnam: 7-day OMO bid rate and Interbank Rates (percent)



Source: SBV, Author's illustration

In short, the OMOs instrument is the quickest and most effective processing tool of the SBV. This tool helped to regulate the monetary volume quickly and proactively by buying/selling valuable papers, thereby managing the interbank market. On the bid side, the SBV daily offers to buy valuable papers in the short term (mainly 7 days) to support CIs having a shortfall in available capital. On the ask side, the SBV offers bills in OMOs to absorb liquidity from the CIs having surplus available capital. The volume is adjusted to be suitable for capital situations, and the interest rate in OMOs is also flexibly adjusted in line with market interest rate movements and monetary policy objectives. Furthermore, compared with policy interest rates (e.g., refinancing rate, discount rate), the interest rate in the OMOs has better effectiveness in orienting the interbank interest rates. Particularly, short-term interbank rates often fluctuate around the 7-day bid rates on OMOs (as shown in Figure 3.10). Meanwhile, the issuance of SBV- bills helps to prevent interbank interest rates from falling sharply, strengthening the role

of SBV in regulating interest rates. These are the basis for the SBV to gradually formulate a monetary policy operating framework using interbank interest rates as an operational goal, contributing to stabilizing the monetary market and the banking system.

(iv) Reserve Requirement

A compulsory reserve requirement is a tool of the central bank that requires CIs to deposit a minimum amount of money at the central bank. Besides, to maximize the effectiveness of this tool, the SBV often must combine it synchronously with OMOs and refinancing tools to assist CIs' short-term liquidity, aiming at ensuring liquidity safety for the system.

Table 3.5. Compulsory reserve requirement in effect from June 1st, 2018

Credit institutions	**Deposits in VND**		**Deposits in foreign currencies**		
	Demand and short-term deposits below 12 months	12 months and more	Deposits of foreign credit institutions	Demand and short-term deposits below 12 months	12 months and more
Group 1	0%	0%	0%	0%	0%
Group 2	Government's regulation	Government's regulation	Government's regulation	Government's regulation	Government's regulation
Group 3	3%	1%	1%	7%	5%
Group 4	3%	1%	1%	8%	6%

Source: SBV

Group 1: People's credit funds, microfinance institutions

Group 2: the Viet Nam Bank for Social Policies

Group 3: Vietnam Bank for Agriculture and Rural Development, Cooperative banks

Group 4: Other credit institutions

The reserve requirement ratio prescribed by the SBV depends on the type of credit institution, currency, and the term of deposits. Since February 2008, the SBV has expanded the tenure of deposits required to reserve. Previously, deposits of more than a 24-month term were not required, but now all terms of deposits of customers are subjected to compulsory reserves (Lai, 2015). Furthermore, the latest SBV regulations on reserve requirement ratios valid from June 1st, 2018 (Table 3.5) additionally stipulated the reserve requirement ratio for deposits in foreign currency received from foreign credit institutions at 1%.

A change in reserve requirement will quickly impact the available capital of CIs, thereby affecting market interest rates. This instrument was especially effective during tight monetary policy implementation when inflation was high; credit growth surged from 2007 to 2011 (SBV, 2011). In 2012, the SBV used this tool carefully to ensure liquidity for CIs under a flexible and multi-target monetary policy. However, the management of this instrument has not been flexible since 2012, when the SBV only changed the regulation on the reserve requirement ratio once in 2018 and then has remained unchanged. During the COVID pandemic, the SBV also did not have any adjustments to this tool, reducing its effectiveness.

(v) Exchange rates

The exchange rate is listed as an official policy tool of the SBV[19]. Accordingly, the SBV announces the reference exchange rate of USD/VND and the permitted trading band. At the same time, the SBV buys and sells foreign currencies in the FX market when necessary to stabilize the exchange rate.

In the period 2007 to 2010, given the massive capital inflow since WTO joining and then the adverse effects of the GFC, the demand and supply of foreign currencies were unstable, leading to a significant difference in the exchange rates between the parallel market and the official market (Lai, 2015). Hence, the SBV adjusted the official exchange rate and intervened in the FX market to stabilize the market, causing the FX reserves to decrease sharply to about 9 weeks of imports at the end of 2010.

From 2012 to 2015, the SBV announced annual exchange rate adjustment directions of only 1-2% to enhance transparency in exchange rate management. However, for many reasons (e.g., pressure from parallel markets, thin FX reserves, volatility of USD), since 2016, the SBV has applied a new exchange rate mechanism. Remarkably, the SBV has operated the exchange rate tool more flexibly to allow the reference exchange rate to adjust daily. Simultaneously, it still frequently conducted FX interventions to avoid local currency depreciations, aiming at reducing exchange rate pressure and supporting inflation targets (IMF, 2019b; IMF, 2022e). However, the significant sale of foreign currencies, especially at the end of 2022, caused the FX reserve to drop sharply to below the worth of 3 months of imports recommended by the IMF.

[19] Also, as analyzed above, the exchange rate stability was used as an immediate target variable of the SBV before 2016.

Hence, despite improving exchange rate instrument management, further exchange rate flexibility should be enhanced. Specifically, frequent and extensive FX interventions should be limited to ensure FX reserve adequacy. At the same time, it would let the exchange rate better reflect supply and demand in the FX market, helping to prevent foreign currency speculation in the parallel market.

(vi) Other Instruments

The SBV imposed several administrative tools to conduct monetary policy. Among them, the SBV set the caps for the interest rates on both VND-denominated and USD-denominated deposits. At the same time, the lending rate ceiling is also imposed for prioritized sectors. Besides, after more than 13 years of the discontinued operation, the bank-by-bank credit growth ceiling tool has been re-applied by the SBV in monetary policy management since 2011. Indeed, the explosion of credit growth contributed to inflation and the banking system crisis (with elevated NPLs) in 2007 – 2011 (SBV, 2011). Therefore, the SBV has imposed credit caps on each individual bank to manage the credit expansion, according to the following criteria: good system governance, low bad debt, and priority given to customer groups in fundamental fields under the direction of the government. Particularly, the SBV has directed CIs to lower the speed and proportion of outstanding loans for non-manufacturing sectors (including credit for investment and business on real estate, credit for investment and trading on securities, and consumer credit). Since 2013, the SBV has added "the credit proportion of each CI in the total system" to serve as a basis for assessing the credit expansion ability of banks. In addition, the allocation of credit limits has also been considered separately for CIs being restructured under the Government's Scheme. Particularly from 2018, if CIs can comply with regulations on capital adequacy ratio under Circular No. 41/2016/TT-NHNN, they will be given priority to extend the credit cap.

Although bank-by-bank and aggregate controls over credit expansion are considered a part of the monetary policy strategy in Vietnam, these measures should be gradually phased out to create conditions for the banking system to operate following the market mechanism, thereby promoting the effectiveness of the monetary policy through indirect tools (IMF, 2022e). Meanwhile, the SBV claimed that it was not the appropriate moment to lift regulations of the credit limit for each bank because it is necessary to preserve financial system stability while its macroprudential framework is being constructed. However, in the long term, these administrative measures should be gradually removed for effective credit allocation.

3.3. Evaluation of monetary policy in Vietnam

3.3.1. Achievements

In general, the management of monetary policy has had some positive changes. First, since 2011, the goal of price stability has been given more importance than before. In particular, the government and the NA's directives emphasized that the task of monetary policy is to control inflation, along with supporting economic growth. This contributed to keeping inflation relatively stable from 2015 until now. Second, concerning the intermediate and operational targets of monetary policy, the SBV has gradually combined monetary volume management (expressed in the annual growth target of M2, credit growth, and base money) with price management (interest rate) to help control inflation and stabilize liquidity for CIs. Accordingly, in Directive 01 at the beginning of each year, the SBV has set the orientation to M2 and credit growth and announced the direction to stabilize the deposit and lending interest rates. This helps to reduce over-reliance on money quantity-based objectives and sets the stage for a move to price-based targets and tools in the future. However, many measures are still administrative, such as imposing the interest rate ceiling and limiting the credit expansions of each bank. Therefore, it is necessary to reform the operating framework further to manage monetary policy through the interest rate channel effectively. Third, the SBV has begun to promote information and communication on monetary policy and clearly announce its commitments to build market confidence. Accordingly, the information on monetary policy stance is shown most in two indexes (i.e., interest rates and exchange rates). Fourth, the SBV has tried to improve its analysis and forecasting capacity. Especially, thanks to the support of the IMF, a Forecasting and Policy Analysis System (FPAS) is in the completed process and promises to help improve the technical capacity of the SBV.

As a result, the SBV reduced inflation from a double-digit high of 18.68% in 2011 to 9.09% in 2012 and then below 4% from 2016 to 2022. Besides, the liquidity of the CIs was ensured and markedly improved, and banking operations were moving toward safer and more efficient (SBV, 2021). Moreover, the market interest rates also tend to decrease. Specifically, in previous years, the VND interest rate on the interbank market increased at a high level (e.g., there were even transactions with interest rates above 30% in 2011), but it then decreased sharply (e.g., in the period 2016-2021, the interbank interest rates were often less than 5%/year). Also, lending interest rates declined from an average of 17.0% in 2011 to about 7.7% in 2019; meanwhile, the deposit rates fell from an average of 14.0% in 2011 to around 5% in 2019. In addition, the average credit growth was lower than before, falling from 32.15% in the 2000-2010 period to

14.11% in the 2011-2022 period, and the efficiency of credit flows was improved in the direction of focusing on priority sectors of the economy. Especially, during the COVID-19 pandemic, the SBV operated an active and accommodative monetary policy to support the economy, along with financial policies such as loan forbearance extending, and debt restructuring for customers to remove difficulties for people during the pandemic.

Besides, the exchange rate and the FX market had commendable movements. From the beginning of 2016, the implementation of a more flexible central exchange rate mechanism that followed the movements of the USD in the international market and the supply and demand of foreign currencies in the country contributed to reducing the pressure to use interest rates to stabilize the exchange rate and strengthening public's confidence in the local currency. In addition, the SBV has also developed 3-month and 6-month FX forward contracts for its FX interventions. At the same time, the exchange rate trading band has been widened to +/-5% to enhance the flexibility of the exchange rate.

3.3.2. Limitations

Although there have been significant improvements, the operation of monetary policy in Vietnam still has main limitations.

First, regarding the institutional arrangement, the central bank's legal independence needs to be greater. Moreover, the accountability of the SBV remains weak. Specifically, accountability for monetary policy is currently shared between the SBV with the government. Therefore, further modernization of the institutional framework is necessary to enhance the performance of the SBV.

Second, there needs to be more clarity about the primary goal of monetary policy strategy. Although according to the law on the SBV (2010) and the Resolutions of the government, the inflation target is one of the main objectives, the SBV still must handle many other tasks (e.g., pursuing numerical targets for economic growth, ensuring macroeconomic stability and adequate liquidity in CIs, preserving payment system safety). In addition, there is a lack of a long-term commitment of the authorities to a low and stable inflation target.

Third, the combination of monetary targeting and exchange rate targeting regimes makes it challenging for the SBV to implement monetary policy effectively. In fact, given the unstable and unpredictable velocity of money, the impact of money supply targets on inflation and economic growth will become less sustainable. Furthermore, while the money base is no longer

an effective significant proxy, the SBV needs to focus more on using interest rates as an operational target[20]. At the same time, an exchange rate targeting regime faced challenges due to thin FX reserves and capital flow volatility amid increasingly integrating into the global financial market.

Fourth, the SBV's monetary policy management still uses administrative measures, including assigning credit growth caps for banks, stipulating the interest rate ceiling on short-term deposits (less than 6-month terms) in VND, and the caps on short-term lending rates in VND for priority sectors. This restricts the market-based operation of the money market, where the transmission from the policy interest rates to the interbank interest rates and then to the deposit and lending rates of CIs. Moreover, these administrative measures can prevent efficient capital allocation in the economy.

Fifth, implementing the interest rate tools has not been optimal, especially as the SBV has yet to choose the decisive (policy) interest rate. Notably, although interbank interest rates have recently fluctuated in a similar trend to the bid rates in OMOs, other policy rates (i.e., base rate, discount rate, and refinancing rates) have insignificant impacts on interbank interest rates. Also, there were times when interbank interest rates fluctuated up and down with a wide range (e.g., overnight interbank rates spiked from 0.33% at the end of May 2022 to above 8% at the beginning of October 2022), much larger than the fluctuation range of deposit and lending rates, affecting the psychology of participants in the money market.

Sixth, Vietnam's exchange rate management from 2016 is considerably improved compared to the previous mechanism, but greater flexibility is needed. Significantly, in 2022, capital flows reversed and flowed out of emerging countries, including Vietnam; along with global uncertainty, exchange rate fluctuations forced the SBV to continuously implement FX interventions to stabilize exchange rates, causing FX reserves to fall sharply. Accordingly, the FX reserve decreased by 22.3% during 2022 to about USD 83 billion at the end of 2022. Consequently, the management of the de facto pegged regime will face challenges in the coming years.

Finally, upside risks to inflation should be attended to, especially amid global instability. Accordingly, inflation pressure must be monitored because the core inflation in Vietnam has been constantly high at around 4-5% since October 2022 and still at 4.11% in July 2023.

[20] Currently, although there has been a gradual shift toward the interest rate target, monetary policy still focuses much on the monetary volume targets, while the interest rate target is just an additional target.

Simultaneously, inflation in Vietnam exhibits high persistence, given the characteristics of the SBV's existing monetary policy framework with no explicit IT strategy, a relatively rigid exchange rate, and a track record of high inflation (IMF, 2022e).

In a nutshell, although inflation in the recent period has remained following the set targets, with the above shortcomings, Vietnam's monetary policy regime is not sufficient to keep a low and stable inflationary environment for a long time and achieve sustained growth, especially in the context of uncertainty of the global economic and financial environment. To address these challenges, the monetary policy of the IT framework has emerged as an effective monetary policy strategy for many central banks, especially for emerging and developing countries (Schmidt-Hebbel and Carrasco, 2016; Arsić et al., 2022). Hence, shifting from the current monetary policy to an IT strategy will be a promising solution for Vietnam.

3.4. Motivation for the IT

There are some following implications against the background of the limitations of Vietnam's monetary policy management. First, a long-lasting commitment from the authorities is required to ensure that maintaining low and stable inflation is an overarching goal. Particularly, the resurgence of inflation in 2022 is a stark reminder of the crucial role of inflation targeting in the effective operation of monetary policy.

Second, given that the intermediate variables (e.g., money supply, credit) do not have a strong and stable relationship to the target variable (i.e., inflation) while a fixed exchange rate is increasingly challenging to maintain in Vietnam amid intense capital flow volatility and a thin reserve buffer in the post-COVID era, it is difficult to choose a traditional monetary policy framework that takes monetary volume or exchange rate as an intermediate variable to operate monetary policy. Therefore, an IT framework should be prioritized because it directly focuses on the inflation target without relying on unstable intermediate variables.

Third, inflation expectation is an important determinant of inflation volatility in Vietnam (Bhattacharya, 2014; Long et al., 2021). Therefore, anchoring inflation expectations will play a vital role in the country's monetary policy management. Similarly, IMF (2022e) showed that core inflation in Vietnam is highly persistent and backward-looking, partly due to the lack of an explicit IT strategy and high inflation records in the past. Meanwhile, the practice has shown the success of the IT framework in shaping inflation expectations in many countries, especially in emerging and developing countries (Schmidt-Hebbel and Carrasco, 2016; Kose et al., 2019).

Hence, the IT framework will be helpful in the case of Vietnam to better guide inflation expectations, thereby minimizing the cost of attaining low and stable inflation and reducing trade-offs with the economic growth goal, especially in the context of increasing inflationary pressure (e.g., in the post-COVID period).

Lastly, the macroeconomic context of Vietnam in the coming years may have many changes. In particular, it must be mentioned that the strong development of the financial market as well as the banking system, and the increasing integration into the global market, accompanied by the high volatility of capital flows and global uncertainty, will create more difficulties for the current monetary policy framework in Vietnam. Furthermore, given Vietnam's high level of economic openness and sensitivity to shocks, controlling inflation will face numerous challenges amid global volatility.

Against this backdrop, given the benefits of the IT regime (as discussed in Chapter 2), the shift from the current monetary policy to an IT strategy is expected to boost the effectiveness of Vietnam's monetary policy, provide a better anchor for monetary policy to maintain low and stable inflation for the medium and long term, as well as contribute to macroeconomic stability and sustained growth. Furthermore, there are also some positive signals about the possible transition toward IT in Vietnam. For example, although pursuing many goals, the inflation target has been more emphasized by the monetary authorities than in the past, which is clearly reflected in the annual resolutions of the government and NA. At the same time, given the achievement of the restructuring of the credit institution system from 2011 to the present and the deeper financial integration, the money market in Vietnam will have increasing development, and commercial banks will constantly improve their competitiveness (SBV, 2020; SBV, 20221). Therefore, the transmission efficiency of the interest rate tool (IT's key instrument) will be enhanced. In addition, since 2016, the exchange rate regime in Vietnam began to be more flexible, creating a premise for reforming the monetary policy framework. At the same time, setting goals within a flexible IT framework allows the annual inflation targets to fluctuate within a specific range. This will benefit the SBV's reputation, especially in the background that the SBV's capacity for inflation control has not been sustainable.

All the above things motivate the Vietnamese authorities to move to an IT regime in the coming years. However, certain preconditions are required to adopt IT successfully. Hence, the next section will clarify this issue by comparing the current conditions of Vietnam with the conditions at the time of IT adoption in Southeast Asian countries, given that these countries have many similarities to Vietnam.

Chapter 4. Applicability of Inflation Targeting in Vietnam

As evaluated in Chapter 3, the shift to an IT regime is essential for modernizing the monetary policy framework in Vietnam. However, whether Vietnam is ready for an IT framework is another matter. To address this question, it is crucial to see if Vietnam has satisfied the preconditions for IT adoption, and if not, is there a basis to ensure that Vietnam can improve conditions and fulfill them to introduce IT in the next few years?

Particularly, three critical preconditions, as discussed in Chapter 2, are (i) the priority of the inflation target over other goals, (ii) the central bank's instrument autonomy, and (iii) the absence of fiscal dominance. Besides, the practical fulfillment of preconditions of the IT countries at the time of their IT adoption can be used as the basic standard for other countries. Based on this idea, the countries selected as the comparison standard for Vietnam are the countries pursuing the IT regime in the Southeast Asia region - where Vietnam is located. They are three countries: Thailand, Indonesia, and the Philippines.

More specifically, the dissertation employs the average performance in satisfying the preconditions of three IT Southeast Asian countries (i.e., Thailand, Indonesia, and the Philippines) as case studies to assess the readiness for IT adoption in Vietnam. These countries are all developing and emerging countries in the same Southeast Asian region as Vietnam and have many similarities to Vietnam. In terms of economy and society, all three countries (i.e., Indonesia, Thailand, and the Philippines) and Vietnam are classified as middle-income countries according to the World Bank classification. Accordingly, Vietnam's nominal GDP per capita is comparable to that of the Philippines and Indonesia, while just relatively lower than that of Thailand (Table 4.1). This area also has abundant and cheap labor resources, such as Indonesia, the Philippines, and Vietnam (except for Thailand, which faces difficulties in the aging population). In addition, export and tourism are the key industries driving economic growth in these countries. Furthermore, all four countries are attractive destinations for foreign investors and receive large capital flows every year. Concerning monetary policy and inflation pressure, like Vietnam, all three Southeast Asian countries pursued peg exchange rate regimes, and then a multiple-target monetary policy with a monetary targeting strategy in the past. They then switched to the IT regime, while Vietnam currently maintains a monetary targeting regime. Besides, because they are all small and open countries, inflation in these countries is sensitive to fluctuations in international oil and commodity prices.

Table 4.1. Statistics of Indonesia, the Philippines, Thailand, and Vietnam in 2022

Country	Population (Millions)	GDP Nominal (Billion USD)	GDP Nominal per capita (USD)
Indonesia	275.50	1,319.1	4,788.0
Philippines	115.56	404.3	3,498.5
Thailand	71.70	495.3	6,908.8
Vietnam	98.19	408.8	4,163.5

Source: World Bank

4.1. Preconditions of three Southeast Asian countries at the time of IT introduction

4.1.1. Thailand

Thailand is the first country in Southeast Asia to apply an IT framework. Notably, at the time of IT adoption in 2000, Thailand had followed the BOT Act of 1942 with many limitations. Particularly, regarding the first precondition, the BOT Act (1942) did not clearly stipulate monetary policy objectives. However, the BOT's first Inflation Report stated that monetary policy conduct aimed to achieve price stability in favor of sustainable economic growth under a flexible IT regime (BOT, 2000). De facto, the BOT also emphasized price stability as the key goal, which was essential for growth in the long term. Indeed, the BOT flexibly adjusted its monetary policy stance according to the inflation movement, thereby continuously achieving the set inflation targets (Nakornthab, 2009). Since 2008, the BOT Act has been amended, stating that "the mandate of BOT is to safeguard the stability of the monetary, payment systems, as well as financial system" (Section 5, B.E. 2551 (2008)). Accordingly, maintaining price stability, which is stated as low and stable inflation, is the primary target of the BOT in operating monetary policy (Peerawattanachart, 2015). Concerning the exchange rate objective, the BOT has followed a managed-floating exchange rate regime since July 1997 (Ito and Hayashi, 2004). Specifically, the domestic currency value is mainly determined by market forces, which reflect supply and demand in the FX market. In fact, the BOT did not target a specific exchange rate level, and FX interventions were conducted only to smooth excessive exchange rate fluctuations (IMF, 2000).

Regarding the second prerequisite, the BOT Act (1942) specified that the central bank had no independence as an institution, in which all affairs of the BOT were supervised by the Minister of Finance (Section 14, BOT Act 1942). In other words, in the initial period of IT, the BOT's entire operations were dependent on the government under the law. Nevertheless, the BOT de facto had a certain independence to implement monetary policy and use policy tools to achieve

inflation targets (Hammond, 2012). Indeed, given the establishment of a Monetary Policy Board within the BOT in April 2000 as the policy-making body (then replaced by a Monetary Policy Committee in 2001), the practice of Thailand's monetary policy showed that the BOT proactive decided on key policy rates under the IT regime (BOT, 2000; Nakornthab, 2009). However, a lack of statutory independence still restrains autonomy and can threaten the central bank's credibility, thereby reducing the monetary policy's effectiveness under IT (Ito and Hayashi, 2004). Realizing this weakness, Thailand revised the central bank law in 2008. Notably, the BOT Act of 2008, which includes provisions for legal autonomy, gives BOT more power and explicitly defines the objectives as well as the responsibilities of BOT (Inoue et al., 2012). Therefore, before 2008, Thailand met the second prerequisite for IT adoption to a certain extent in terms of the practical aspect but did not meet it regarding the legal part. However, the institutional framework improved with the amendment of the BOT Act in 2008.

As for the third requirement, the BOT Act of 1942 permitted the central bank to credit the Thai government directly via monetization. Meanwhile, the legislation authorizing the Thai government to draw overdraft money from the central bank was removed by the Prime Minister in 1960[21] (Kirakul, 2006). However, regulations regarding the BOT's directly buying government bonds in the primary market to finance the government budget remained unclear. In practice, to limit fiscal dominance, the BOT had not been involved in the primary government bond market for years (Kirakul, 2006). Besides, concerning the sustainable fiscal issue, although the Thai government's budget balance was in deficit at the time of IT adoption, it was better than other countries in the region (e.g., Indonesia and the Philippines). However, Thailand still witnessed a relatively high public debt-to-GDP ratio during the early 2000s. Specifically, budget deficits in percent of GDP were 2.9%, 2.4%, and 2.1%, with public debt ratios of 56.59%, 57.83%, and 57.47% of GDP in 1999, 2000, and 2001, respectively. After that, thanks to fiscal rules (e.g., a public debt cap of 60% of GDP in 2000 and reset to 50% in 2005) and a quick recovery of the Thai economy after the AFC, the public debt significantly declined from 57.83% of GDP in 2000 to 47.50% of GDP in 2003. Simultaneously, Thailand's fiscal balance improved over time after the IT introduction, with a budgetary surplus of 0.6 % of GDP in 2003. This indicates that the government continuously improved fiscal policy to support monetary policy independence after IT adoption.

[21] An overdraft money can be made if it is allowed by two laws simultaneously: (i) the BOT Act allows BOT to provide such credit to the government, and (ii) the Annual Budget Act allows the government to do so (Kirakul, 2006).

In summary, when applying IT in 2000, in terms of the law dimension, the basic prerequisites for IT were not met in Thailand due to the drawbacks of the BOT Act 1942. In practice, Thailand met the first two conditions (i.e., prioritizing the inflation objective and the actual instrument independence of the central bank), while the third condition was gradually satisfied. It was not until 2008, when the Central Bank Act was amended, along with the improvement of the government's fiscal position, that the preconditions for functioning IT were fulfilled.

4.1.2. Indonesia

With efforts toward a new monetary policy framework, Indonesia enacted a new central bank law in May 1999 (Act No. 23/1999). Accordingly, the sole goal of the central bank is to preserve the stability of the domestic currency, which is reflected by two dimensions: (i) a low and stable inflation and (ii) a stable exchange rate. As such, unlike in the case of Thailand and the Philippines, along with the inflation objective, exchange rate stability is an explicit goal of monetary policy in Indonesia. However, given a statutory free-floating exchange rate regime since August 1997, exchange rate stability could be understood as an intermediate indicator to support the final goal of price stability, especially for an open economy like Indonesia (Inoue et al., 2012; Warjiyo and Juhro, 2019). Hence, this mandate can be justified. In practice, BI closely monitored exchange rate movements and investigated the factors behind the volatility. Nevertheless, BI did not add the exchange rate movement in setting the monetary policy rule but instead considered it in the information set to evaluate before making final decisions (Mariano and Villanueva, 2006; Inoue et al., 2012). Thus, at the time of IT adoption, the reality of monetary policy operations demonstrated that BI prioritized the inflation rate as its primary objective rather than the exchange rate (Mariano and Villanueva, 2006). In other words, the medium-term inflation target is Indonesia's nominal monetary policy anchor.

Regarding the second precondition, BI was granted full authority to formulate and conduct monetary policy (instrument independence) as well as set the inflation target (goal independence) by Act No. 23/1999. Not only that, but this law also prohibited any interference from the government and external agencies in central bank operations (Article 4, Act No. 23/1999). In other words, BI had a high level of autonomy regarding both instrument and goal dimensions. After that, the 2004 amendment to the law resulted in the transfer of goal-setting authority to the government, in consultation with the central bank (BI). Despite this, in terms of tool independence, this aspect has consistently been fully satisfied even before the adoption of IT. In practice, the Board of Governors of the BI has been responsible for regulating and setting monetary policy (Inoue et al., 2012).

About the third prerequisite, the Bank Indonesia Act stipulates the prohibition of BI from extending finance to the government and buying government bonds in the primary market[22] (Articles 55 and 56, Act No.23/1999). Legally, this is considered a necessary regulation to deal with the potential problem of fiscal dominance (Ötker-Robe and Freedman, 2010). However, in practice, indirect fiscal dominance persisted and threatened BI's independence and monetary policy's effectiveness in Indonesia before its IT adoption[23] (Mariano and Villanueva, 2006). This problem occurred due to the huge government domestic and external debt and large fiscal deficits for many years. More precisely, the public debt was at a very high level of 87.44% of GDP in 2000 – the time of the IT announcement. Additionally, the enormous stock of government external debt made it hard for the government to repay debts because of the depreciation of the Rupiah exchange rate after AFC. Besides, a large amount of the government's domestic debt using interest rates equal to those of the three-month SBI (Bank Indonesia Certificate) might undermine BI's autonomy in setting the SBI discount rate, especially making BI hesitant to raise interest rates when the monetary policy is asked (Mariano and Villanueva, 2006). Also, the budget balances continuously were in deficit for many years. Consequently, these matters indirectly limited the independence of BI's monetary policy operation. Thus, although the precondition of no fiscal dominance was guaranteed by law, a de facto presence of fiscal dominance was problematic in Indonesia in the early 2000s (Mariano and Villanueva, 2006). However, the issues of the fiscal imbalance and high public debt in Indonesia improved a few years after announcing IT in 2000 thanks to the authorities' efforts in reforming the fiscal sectors. Especially, State Finance Law No.17/2003 was passed to set the ceiling on government debt at 60% of GDP. Moreover, government Regulation No.23/2003 on the budget balance rule prescribes a maximum fiscal deficit-to-GDP ratio of 3%. Under these rules, Indonesian authorities consistently enhanced the fiscal policies and planning on expenditure to attain fiscal sustainability from central to local levels. As a result, the government debt declined substantially from a peak of 87.43% of GDP in 2000 to 55.64% in 2003, thanks to a reduced fiscal deficit combined with high economic growth (Hermawan and Munro, 2008). In 2005[24] when Indonesia officially adopted the full-fledged IT regime, the public debt was remarkably lower than in the previous period, with only 42.61% of GDP. Furthermore, the fiscal balance strengthened over time with -2.46% GDP in 2001 and improved with -1.04% GDP in

[22] BI can buy government securities on the secondary market to serve monetary operations (Article 55 (4), Act No.23/1999).
[23] Notably, the inflation targets were often missed during this period (2000-2003).
[24] Notably, 2005 is the year when Indonesia officially adopted a full-fledged IT regime, although the country has introduced IT since 2000.

2004 and -0.52% GDP in 2005. Hence, fiscal dominance was no longer a major threat to BI at the time of formal IT adoption.

In short, regarding legal aspects, Indonesia satisfied all three prerequisites at the time of IT adoption. Concerning practice, the first two requirements for a successful IT application were in place, and the third requirement was also gradually met.

4.1.3. The Philippines

Before the time of IT adoption, a substantial amount of work had been done in the Philippines. Among them, the Central Bank of Philippines (CBP), formed in 1949, was replaced by the Bangko Sentral ng Pilipinas (BSP), established in July 1993 according to a new Central Bank Act of 1993 (Republic Act No. 7653).

As for the first precondition, the Central Bank Act of 1993 of the Philippines determined that price stability is the central goal of monetary policy beneficial to sustainable and balanced economic growth. Concerning the exchange rate regime, the Philippines adopted a de jure free-floating exchange rate system in 1984 in which market forces determine the exchange rate. Meanwhile, in practice, sometimes the BSP intervened in the FX market to prevent adverse effects on inflation expectations. Therefore, the question of whether the BSP had a dual mandate of price stability and exchange rate stability arose (Gochoco-Bautista, 2001). In fact, the peso de facto was pegged to the USD between late 1995 to July 1997 to maintain the value of the domestic currency under the pressure of massive capital inflows (IMF, 1998; Arora, 2000). However, after the AFC, the BSP decided to float the peso, restoring the consistency of the exchange rate and monetary policy framework. Moreover, the actual operation of the BSP indicated that it just sterilized sharp exchange rate volatilities to preserve orderly market conditions and only responded by monetary actions if there was considerable potential danger to the inflation targets and inflation expectations (Mariano and Villanueva, 2006; Inoue et al., 2012). Clearly, at the time of IT application, the BSP pursued only the inflation targets for monetary policy implementation. Both in law and practice, the BSP did not target any particular value of the exchange rate between the peso and the US dollar but promoted a market-determined level[25]. Hence, the inflation path was the top concern of the Philippines, both de jure and de facto.

[25] At that time (1998-2003), the de facto exchange rate arrangement in the Philippines was independently floating, according to IMF's classification.

Regarding the second requirement of IT adoption, according to the Central Bank Act, the BSP has a high degree of autonomy, excluding only goal independence[26]. Remarkably, the legislation specified that the BSP has fiscal and administrative autonomy as a central monetary authority, which the CBP did not have. Besides, BSP has full operational and instrument independence in money, banking, and credit policy in which it decides on employing tools to achieve the inflation goal. In practice, the BSP flexibly utilized monetary policy tools, including policy rates, OMOs, and others, to attain the pre-announced targets (Ito and Hayashi, 2004). Furthermore, the BSP's policy-making body (i.e., Monetary Board) had duties for monetary policy decisions (Inoue et al., 2012). Therefore, the BSP had high autonomy, supporting its IT adoption.

As for the third prerequisite, the Central Bank Act of 1993 gives the BSP statutory fiscal independence to minimize fiscal dominance. More specifically, the Act prescribes limits on both the amount and maturity of the BSP financing to the Philippine government. Accordingly, "the BSP may directly advance without or with interest to the Philippine government to cover spending authorized in the annual appropriation, however, the total amount of the advances shall not exceed 20 % of the average annual revenue of the Philippine government for the three fiscal years prior". In addition, the government has to repay these advances "before the end of the period of three months, extendable by another three months from the date of receipt of the advance if the Monetary Board so permits" (Section 89, Republic Act No. 7653).

Nevertheless, despite the provisions preventing the presence of fiscal dominance in law, indirect fiscal dominance still emerged because of the extreme stocks of public debt and high budget deficits, and the possibility of near insolvency of major state firms at the time of IT application in the Philippines (Mariano and Villanueva, 2006). The latter relates to contingent fiscal liabilities that can be hard to estimate but significant. In these cases, the monetary policy's efficiency was harmed. In other words, the BSP would not ensure a stable nominal anchor in the lack of the government's fiscal discipline (Mariano and Villanueva, 2006). To be more specific, the Philippines adopted the IT regime in 2002 when its public debt-to-GDP ratio was high at 78.3%, and its budget deficit was substantial at 5.3% of GDP. Notably, the fiscal imbalance in the Philippines was much worse than in Thailand and Indonesia at the time of their IT application. After that, the Philippines' public debt continued to increase to a peak of 87.26% of GDP in 2004. However, the government's fiscal position in the Philippines improved, with

[26] In essence, the jointly setting inflation targets by the government and the BSP implies the government's active participation as well as consensus on the IT strategy (BSP, 2019).

the public debt decreasing to 67.5% of GDP in 2006. Besides, the budget deficit declined from 5.3% of GDP in 2002 to 2.7% of GDP in 2005. Especially, these performances were gained because of notable fiscal reforms and prudence undertaken by the government. In fact, the government cut its expenditures, together with enacting some new tax measures from late 2004 to 2006. Particularly, the Development Budget Coordination Committee (DBCC) established fiscal targets, including expenditure priorities and main tax, while preventing an unsustainable increase in the public debt (Guinigundo, 2012). The Republic Act (RA) No. 9334, passed in late 2004 and went into effect in January 2005, adjusted the excise tax rates for sin products. At the same time, RA No. 9337, also called the Reformed VAT Law, was passed in the first half of 2005, and went into force in the fourth quarter of 2005. Accordingly, in January 2006, the VAT rate increased from 10% to 12%[27]. Hence, although de facto fiscal dominance still existed at the time of IT adoption in 2022, this situation was gradually improved in the Philippines a couple of years later.

In summary, in the Philippines, while the first two pre-conditions for functioning IT have been satisfied, fiscal dominance was a matter at the time of IT adoption despite regulations limiting fiscal dominance in the Central Bank Act.

4.1.4. Evaluation of the satisfaction of preconditions of three Southeast Asian countries

(i) First precondition

Except for a lack of explicit regulation in the law until 2008 in Thailand, all three Southeast Asian countries met the requirement of the priority of the inflation target at the time of IT adoption. Regarding the de jure aspect, the legislation of Indonesia and the Philippines clearly stipulates that the overriding objective of monetary policy is price stability. Concerning the de facto aspect, all three countries strictly comply with the achievement of the inflation target as the primary target of monetary policy, and their exchange rate policies are flexible, such as a floating or managed-floating exchange rate regime. Thus, Vietnam should also fulfill this first prerequisite for IT adoption if the country wants to pursue the IT framework.

(ii) Second precondition

[27] However, the increase in tax effort was just temporary, only from 2004 to 2006, to deal with fiscal deficits. After that, the tax-to-GDP ratio fell, leading to a fall in the national government's overall revenue from 16.0 % in 2006 to 15.8 % in 2008 (Manasan, 2011). Despite this, the fiscal balance remained stable in 2007-2008, owing to a significant drop in interest payments in those years because of the fall in government debt in previous years.

Prior to adopting IT, all central banks of three Southeast Asian countries had independence in using monetary policy instruments in practice. However, while the central banks of Indonesia and the Philippines were granted high legal instrument independence by the specific legislation at the time of IT introduction, the Bank of Thailand did not have legal autonomy up to 2008. In short, it can be said that the three countries had good performances in fulfilling the requirement of the central bank's instrument independence in law (except for Thailand until 2008), and in practice before the IT application. This implies that if Vietnam wants to apply the IT framework, the SBV should have at least de facto instrument autonomy (as in the case of Thailand).

(iii) Third precondition

As for satisfying the third requirement of the three Southeast Asian countries, there are some points worth noting. Firstly, from the legal aspect, while the Bank of Thailand Act (1942) did not enshrine provisions to prevent fiscal dominance[28], the laws of the central banks of Indonesia, and the Philippines stipulated minimizing fiscal dominance in monetary policy operations. To be more specific, the Philippines mentioned limits on the amount and tenor of credits from the central bank to the government, while Indonesia imposed a stricter legal that outright prohibits credits from BI to the government. Secondly, from the practical aspect, indirect fiscal dominance indeed was a serious problem for the Philippines in the early years of IT due to fiscal imbalances and the substantial levels of both domestic and foreign government debt. Meanwhile, the fiscal situation of Indonesia and Thailand was better improved at the outset of IT despite some previous difficulties. Thirdly, there has been a noticeable improvement in the budget balance and public debt of all three countries to limit the likelihood of actual fiscal dominance several years after applying the IT regime. This demonstrates that even though at the time of IT introduction, fiscal dominance was a matter, especially for the Philippines, they all attempted to enhance fiscal policy to solve it.

Therefore, from the above analysis of three Southeast Asian countries, Vietnam should have explicit provisions to prevent fiscal dominance for monetary policy conduct. Concerning indirect fiscal dominance due to high public debts and budget deficits, Vietnam's government may not need a sound and stable fiscal position right now but must gradually improve the weak fiscal status (if have) after adopting IT as in the case of three Southeast Asian countries.

[28] More precisely, the BOT Act of 1942 permitted the central bank to directly credit the government via monetization; however, the legislation permitting the Thai government to carry on such activities (e.g., overdrawing money from the BOT) was repealed in 1960.

In a nutshell, despite not meeting all preconditions at the time of introducing the IT strategy, some prerequisites were satisfied in all three Southeast Asian countries, including the de facto priority of the inflation target over the other objectives, high degree of central bank's instrument independence in practice, and legal limit on fiscal dominance. Hence, at least these conditions should be in place in Vietnam before the IT application.

4.2. Current conditions of Vietnam and Comparison

This section explores the current performance of Vietnam in comparison with the performance of three Southeast Asian countries at the time of their IT adoption and then answers the question of to what extent Vietnam fulfills the three crucial prerequisites for a successful IT. Finally, it assesses the applicability of the IT framework in Vietnam.

(i) Priority of Inflation Objective

For the first prerequisite, there are significant improvements in focusing more on the inflation target (both in law and practice) in Vietnam[29]. Particularly, the Law on the SBV of 2010 specifically states that the objective of currency value stability is shown by the inflation rate. Additionally, the Vietnamese government's Resolution issued in 2011 emphasized the role of the inflation objective more than before. However, given the multiple goals of monetary policy, a legal definitive prioritization of inflation as the overarching goal of monetary policy remains absent in Vietnam. Therefore, the priority of the inflation target in Vietnam is more clearly defined than in Thailand at the time of its IT adoption, but not as clearly specified as in the laws of Indonesia and the Philippines[30].

In practice, there are considerable changes in the practical goals of monetary policy in Vietnam. Before 2012, the authorities prioritized accelerating economic growth at all costs of high inflation. However, since 2012, there have been some commendable signs in Vietnam's monetary policy operations. Accordingly, the monetary policy direction is toward the goal of stabilizing prices and promoting growth at a reasonable level. As a result, the inflation outcome became more stable, accompanied by a moderate economic growth rate.

Besides the targets of inflation and economic growth, another concern of Vietnam's monetary policy is the exchange rate stability objective. Specifically, Vietnam adopts a de jure managed-

[29] See details in Chapter 3.
[30] As mentioned earlier, the BOT Act of 1942 did not specify monetary policy objectives. Meanwhile, the laws of Indonesia and the Philippines clearly state that price stability is the top objective of monetary policy.

floating exchange rate regime, but in practice, it follows a soft pegging strategy with a stabilized arrangement or crawl-like arrangement. From 2012 to 2015, the SBV set a target of a stable exchange rate with annual adjustments of less than 2%. However, since 2016, the SBV has no longer set this target in its annual orientation. Instead, a new and more flexible exchange rate mechanism has been adopted, which is an important foundation for better aligning with the requirements of the IT regime and moving toward IT adoption. Moreover, since October 2022, the SBV has expanded the exchange rate band from +/-3% to +/-5%, enhancing exchange rate flexibility.

In fact, a flexible IT regime does not require the monetary policy's objective to be only the inflation target. In other words, there is no need for the central bank to be indifferent to economic growth or exchange rate stability, but they should ensure that these objectives are subsidiary while the inflation objective is the main goal. For example, the central bank of the Philippines aimed at price stability with a view to sustainable economic development, but they did not mention a numerical target of growth like Vietnam (e.g., in Vietnam's Monetary Policy Directives, the economic growth target was set at 6.7%), while the Bank Indonesia was concerned about exchange rate stability, but they did not target on specific exchange rate level. Meanwhile, the BOT Act of Thailand even did not prescribe clear monetary policy objectives at the time of IT adoption. However, all of them ensure that the inflation objective is the top monetary policy target under the IT regime. Hence, long-lasting commitments to the inflation target in Vietnam are needed.

In general, Vietnam's fulfillment degree of the first pre-condition is slightly lower than that of Indonesia and the Philippines but better than that of Thailand.

(ii) Central bank's instrument independence

In terms of the legal aspect, the SBV is partly independent in selecting and using monetary policy tools. Article 10 of the Law on the SBV of 2010 prescribes that the SBV's Governor decides the use of national monetary policy instruments. However, Article 3 of this legislation leaves open the possibility of the government intervening in the decision process of policy instruments by indicating that "The Prime Minister and the Governor of the SBV decide to utilize executive tools and measures to implement the monetary policy". It means that by law, the central bank shares rights and responsibilities with the Prime Minister on monetary policy instruments. Hence, the legal instrument autonomy of Vietnam's central bank is not as high and comprehensive as in Indonesia and the Philippines.

Meanwhile, in practice, the SBV is almost active in operating the monetary policy toolkit. Accordingly, the SBV has the de facto authority to decide on interest rates, exchange rate policy, OMOs, reserve requirements, and administrative tools (SBV, 2021). In other words, choices of monetary policy tools were rarely subject to government interference. Indeed, until 2012, the government, via its annual Resolutions, mainly decided on intermediate targets including the growth of credit and money supply. Meanwhile, the selection of which tools and the adjustment level to achieve the goals stated in the Resolution was decided solely by the SBV. Since 2013, the independence in monetary policy conduct of the SBV has been further enhanced, as decisions on (intermediate) targets of money supply and credit are also proactively made by the SBV, and the targets can be adjusted according to the actual situation. Therefore, the SBV has a high degree of independence in de facto operating monetary policy[31].

In short, compared with three IT countries in Southeast Asia, the legal independence of the SBV is not as high as that of the central banks of Indonesia and the Philippines, including instrument autonomy. However, the SBV has much more explicit instrument independence than the Bank of Thailand had in law at the time of its IT adoption. In terms of actual operation, like the three Southeast Asian countries, the SBV is almost free and active to use and regulate policy tools to achieve the desired goals. Therefore, it can be considered that Vietnam's degree of satisfying the second requirement is acceptable in comparison with the three countries mentioned at the time of their IT adoption.

(iii) No fiscal dominance

In terms of the legal aspect, similar to Indonesia and the Philippines, the law of Vietnam has specific provisions to limit fiscal dominance. In particular, the SBV law of 2010 makes it clear that "the SBV only grants advances for the state budget to address temporary deficits" and "these advances ought to be repaid within the budgetary year" (apart from exceptional cases owing to the Standing Committee of National Assembly decisions) (Article 26, the Law on the SBV 2010). Furthermore, the Ministry of Finance is permitted to sell Treasury bills to the SBV only after reaching an agreement with the SBV and obtaining approval from the Prime Minister (Article 2, Circular No. 92/2016/TTLT-BTC-NHNN). In essence, directly selling Treasury bills does not mean borrowing medium and long-term capital from the central bank to finance budget

[31] However, the sharing of decision-making power on the monetary policy tools prescribed in the current law can somehow affect the SBV's operation. For example, if there is a conflict of interest between monetary and fiscal targets, the government may put pressure on the SBV to use monetary instruments. Besides, sometimes the SBV will hesitate to raise interest rates due to the risk of government default. Therefore, although the SBV has a high instrument autonomy in practice, a legal guarantee of the full instrument independence of the SBV is still needed.

expenditures. Instead, it serves as temporary advances (due to the maximum maturity of Treasury bills being 52 weeks) or fulfills the requirements of conducting Open Market Operations for the SBV's monetary policy management. For longer-term bonds, there is no regulation allowing the SBV to buy them directly in the primary market, but it only acts as an agent of the Treasury in organizing the issuance, bidding, depository, and settlement of these bonds.

Table 4.2. Some indicators of fiscal issues

Country	Time of adopting IT	Public debt (% of GDP)			Fiscal deficit (% of GDP)		
		M	S	V	M	S	V
Indonesia (2003-2005)	July 2005	49.86	6.64	0.13	1.09	0.60	0.55
Philippines (2000-2002)	January 2002	73.83	3.87	0.05	4.43	0.75	0.17
Thailand (1998-2000)	May 2000	54.78	4.27	0.08	2.60	0.26	0.10
Average		**59.49**	4.92	0.09	**2.71**	0.54	0.27
Vietnam (2017-2019)		**58.13**	3.35	0.06	**2.74**	0.07	0.02
Vietnam (2020-2022)		47.50	7.28	0.15	4.31	1.08	0.25

Source: Author's calculations

Note. M = Mean, S = Standard deviation, V = Coefficient of variation (S/M)

Regarding the de facto fiscal dominance issue[32], the figure for public debt and fiscal deficit (as shown in Table 4.2) may shed light on the current fiscal position of Vietnam compared with that of three IT countries in Southeast Asia at the time of their IT adoption. Besides, the evaluation focuses on Vietnam's data from 2017-2019 for comparison with three IT countries. This choice is made because it represents the pre-COVID period, providing a more accurate reflection of the fiscal situation during normal times. Meanwhile, the figures for 2020-2022 may represent outlier data amid shocks because, in most countries, fiscal policies became extremely expansionary with huge budget spending packages on health services and other measures to rescue the economy during the COVID-pandemic.

[32] As analyzed above, a high ratio of public debt to GDP and a severe budget deficit to GDP for years caused a threat of indirect de facto fiscal dominance, particularly evident in the Philippines before adopting IT (Mariano and Villanueva, 2006).

Regarding public debt, Vietnam's average public debt as a percentage of GDP for 2017-2019 is better than the average public debt of the three Southeast Asian countries prior to IT adoption. More precisely, the average public debt for 2017-2019 in Vietnam is 58.13% of GDP, which is lower than the average figure of 59.49% of GDP for the early period of IT adoption in the three Southeast Asian countries. Simultaneously, Vietnam's average fiscal deficit for 2017-2019 is 2.74% of GDP, nearly comparable to the average for three Southeast Asian countries (i.e., 2.71%) at the outset of IT application. During the COVID pandemic, Vietnam's fiscal deficit increased significantly to 5.51% of GDP in 2020. However, this is only a temporary situation as the government of Vietnam has been working to restore fiscal discipline, reducing it to about 4% of GDP in 2022. Furthermore, even though Vietnam's budget deficit-to-GDP ratio for the 2020-2022 period is higher than that of Indonesia and Thailand at the start of IT adoption, it remains more favorable than the figures for the Philippines.

In fact, the fiscal position in Vietnam has been improved, thereby reducing the risk of fiscal dominance. This is evident in the significant decline of the budget deficit to GDP ratio, from 4.39% of GDP for 2014-2016 to 2.74% for 2017-2019. Additionally, partly because Vietnam re-evaluated and expanded the nominal GDP scale by 25.4%[33], the ratio of public debt to GDP in Vietnam has declined remarkably. Simultaneously, the Vietnamese government has taken proactive steps to improve fiscal discipline. Specifically, Vietnam has established well-constructed fiscal standards on public debt, budget revenues, and expenditures. For example, the government set a ceiling on public debt ratio to not exceed 65% of GDP from 2016 to 2020, and government outstanding debt to not exceed 55% of GDP, external debt below 50% of GDP by 2020. Moreover, management programs on the medium-term government debt determine limits on fiscal deficit of about 4% for the period of 2016-2020, and an average ratio of 3% GDP after 2020. Besides, the Law on State Budget of 2015 explicitly stipulates the rule for the state budget that the total revenue from taxes, fees, and charges must be greater than the total regular expenditure to reach the balance of budget revenues and expenses. Also, in 2021, the government lowered the public debt ceiling from 65% of GDP to 60% of GDP to reinforce fiscal sustainability (IMF, 2022e). Therefore, although there are remaining problems in public investment and budget spending that could raise fiscal expenditures in the future, the

[33] As a result of improved measurement and expanded coverage of formal businesses, the GDP in Vietnam was upwardly revised by an average of 25.4%. According to the Ministry of Finance of Vietnam, these revised figures have been used since 2021. Details at https://mof.gov.vn/webcenter/portal/vclvcstc/pages_r/l/chi-tiet-tin?dDocName=MOFUCM197849

government's commitments to reform fiscal policy to prevent fiscal dominance are worth noting.

In short, although the COVID-19 pandemic temporarily worsened Vietnam's fiscal position, its public debt and fiscal deficit ratio to GDP in normal times are reasonable and comparable to those of three IT Southeast Asian countries at the time they adopted IT. Therefore, while the risk of fiscal dominance should be monitored, it is not currently a major issue in Vietnam. As a result, Vietnam meets the third prerequisite for IT adoption quite well, with a level of fulfillment equivalent to the average among IT Southeast Asian countries, both de jure and de facto.

4.3. Evaluation of the applicability of the IT regime in Vietnam

Table 4.3 summarizes the fulfillment of the prerequisites in the three Southeast Asian countries at the time of starting IT and the current conditions in Vietnam. Accordingly, Vietnam currently has met the prerequisite conditions for the IT regime to a certain extent.

Table 4.3. The fulfillment of the preconditions for the IT adoption

Pre-conditions		**Thailand**	**Indonesia**	**Philippines**	**Vietnam**
Time of IT introduction		May 2000	July 2005	January 2002	-
Priority of Inflation Target	Law	No (Until 2008)	Yes	Yes	Clearer than before
	Practice	Yes	Yes	Yes	Yes Focused than before
Central bank's instrument independence	Law	No (Until 2008)	Yes	Yes	Partly
	Practice	Yes	Yes	Yes	Yes
Absence of Fiscal dominance	Law	Unclear	Yes (outright prohibition of credits to government)	Yes (restrictions on maturity and the amount of credits to the government)	Yes (only advance to the budget to deal with temporary deficits)
	Practice	Yes	Yes (Public debt improved after 2003)	No (High Public debt and fiscal deficit)	Yes

Source: Author's compilation

Particularly, the fulfillment of prerequisites of Vietnam is better than that of Thailand at the time of its IT adoption, and only less than that of Indonesia and the Philippines in terms of legal aspects of the first two preconditions. However, according to Decision No.986/QD-TTg on the Development Strategy of the Banking Sector in Vietnam to 2025, with an Orientation to 2030,

the Vietnamese government has plans to gradually enhance the independence and accountability of the SBV, while assigning the SBV to modernize the monetary policy framework with the highest goal being to stabilize inflation. Therefore, in the next few years, Vietnam can catch up with Indonesia and the Philippines in terms of meeting the first and second prerequisites (both in law and practice). Regarding the third precondition, Vietnam's degree of fulfillment is comparable to that of Indonesia and Thailand and surpasses that of the Philippines (concerning the de facto aspect). As a result, overall, Vietnam's current performance in satisfying prerequisites for IT is reasonable compared to the three Southeast Asian countries at the time of their IT adoption, thereby allowing it to introduce IT.

In short, based on the comparison with three IT countries, Vietnam can introduce an IT framework. Besides, after the IT adoption, three IT Southeast Asian countries improved their economic and institutional conditions to better satisfy the requirements for functioning IT. Therefore, Vietnam should also continue upgrading its economic, financial, and institutional framework in parallel with IT introduction to ensure effective IT implementation. Furthermore, preparing and successfully implementing a new monetary policy framework are never easy tasks. Hence, it is crucial for Vietnam to draw lessons from these countries' experiences when moving toward an IT framework. This issue will be further clarified in the next chapter.

Chapter 5. Case studies: Experiences of Southeast Asian countries in IT adoption

Southeast Asia is considered one of the world's dynamic economic regions with high potential growth (OECD, 2021), and Vietnam is also in this region. So far, Southeast Asian countries have pursued the IT regime including Thailand, Indonesia, and the Philippines. Specifically, although at the time of IT introduction, these countries did not satisfy all preconditions for the IT framework and faced some difficulties in the process of IT preparation and implementation, they have gradually completed the missing prerequisites, and established and upgraded the IT framework to apply it successfully. Besides, as mentioned in Chapter 4, Vietnam has many similarities with these IT Southeast Asian countries. Therefore, their experiences will be valuable lessons for Vietnam to pursue an IT regime. In this regard, this chapter studies the cases of Thailand, Indonesia, and the Philippines regarding the IT framework to provide lessons learned for developing and emerging countries in general and serve as a basis for comparison with Vietnam in Chapter 6 and policy implications for Vietnam in Chapter 7.

5.1. Thailand

5.1.1. Development of Monetary Policy framework and Motivation for IT

Thailand is the first Southeast Asian country to apply the IT regime after two years of shifting to a managed-floating exchange rate mechanism from a fixed regime. In more detail, the development of Thailand's monetary policy framework can be divided into three stages as follows.

(i) Pegged Exchange Rate (until June 1997)

In the past, Thailand applied a fixed exchange rate regime for many years after World War II, but the pegged exchange rate caused financial instability, the manipulation of monetary speculation, and problems with the free movement of capital (Ito and Hayashi, 2004; Inoue et al., 2012). Besides, pressures from the AFC in 1997 caused the severe devaluation of the Thai baht; so, the government could not control inflation. Consequently, the Thailand authorities decided to follow a managed-floating exchange rate in July 1997.

(ii) Monetary targeting (July 1997 – May 2000)

At that time, Thailand obtained support from the IMF after abandoning a pegged exchange rate to apply the monetary targeting regime in agreement with the terms of the IMF loan program (Nakornthab, 2009). Especially, the monetary policy goal was to re-establish macroeconomic stability and recover public confidence after the AFC. To accomplish the ultimate goals of price stability and sustainable growth, the regime supported ensuring consistency among monetary policy, capital flows, the balance of payments, and fiscal policy. Accordingly, the Bank of Thailand (BOT) determined the daily and quarterly target for the base money to aim at the mentioned ultimate objectives (Nakornthab, 2009). However, after that, this regime was not effective when the connection between money supply and economic growth, and inflation became unstable and unpredictable (Nakornthab, 2009; Inoue et al., 2012).

(iii) Inflation Targeting (May 2000 – now)

Following Thailand's exit from the IMF loan program, the BOT needed to find a new monetary policy anchor that was appropriate for the country. To that end, the BOT conducted a thorough review of both the internal and external conditions, finding that money targeting would be less efficacious than inflation targeting (Nakornthab, 2009). The key reason for this shift was that the link between money supply and economic growth was increasingly unstable. Therefore, in 2000, Thailand decided to pursue the monetary policy of IT to replace the monetary targeting which was no longer appropriate (Ito and Hayashi, 2004; Inoue et al., 2012).

5.1.2. Preparation and Transition toward IT

After the AFC, the banking system in Thailand was severely affected, along with high non-performing loans (NPLs) ratios, which reduced the transmission efficiency of monetary policy (Ito and Hayashi, 2004), given that credit and interest rates were critical transmission channels of Thailand during the 2000s (Grenville and Ito, 2010). Therefore, reducing the NPLs was necessary and urgent, especially in the transition to IT. To that end, Thailand initially introduced an Asset Management Company per bank to respond to the surge in NPLs, but this did not have a meaningful impact. Only until the Thai Asset Management Corporation - a state organization - was founded in 2002, the amount of NPLs dropped drastically (Ito and Hayashi, 2004). Besides, to promote the efficiency of monetary operations and the bond market, the BOT actively launched outright operations in 2000, in addition to repo operations (Chabchitrchaidol and Permpoon, 2002).

In terms of institutions and laws to prepare for the IT regime, BOT set up a Monetary Policy Board (MPB) in April 2000 with the authority to determine monetary policy (BOT, 2000). In particular, MPB had the power to steer monetary policy with price stability as the primary objective, as well as to fine-tune the flexible IT framework to fit the Thai economy (Ito and Hayashi, 2004; Inoue et al., 2012). Immediately after its establishment, the MPB held a meeting to discuss the necessary preparations for the IT framework. Also, at that time, a new BOT Act was being considered, with regulations for legal monetary policy autonomy of BOT, and was likely to be passed soon (Ito and Hayashi, 2004). However, it was not until 2008 that this new law was enacted (Grenville and Ito, 2010).

Furthermore, the BOT has conducted many studies and organized numerous seminars to support IT establishment. In the "Bank of Thailand Economic Symposium" in 2000, the BOT highlighted the work needed to move toward an IT framework. Among them, the BOT decided to use core inflation as an index for targeting inflation and chose the 14-day RP rate as Thailand's primary policy interest rate for introducing an IT framework (BOT, 2000). Moreover, for communication and transparency, the BOT planned to release the first Inflation Report in July 2000, Minutes of MPB meetings, and a Policy Statement in the Government Gazette in end-2000. Regarding technical preparation, Thailand developed forecasting tools, such as a macroeconomic model on quarterly data, setting up the index for inflation and key economic variables, and making inflation projections based on Market expectations and Analysis (BOT, 2000).

5.1.3. Setting and Developing the IT framework

Thailand's IT framework has been relatively well-designed since its inception in 2000 (Ito and Hayashi, 2004; Inoue et al., 2012). However, there were still institutional constraints in the early stages of IT due to the provisions of the BOT Act of 1942[34]. In the following years, Thailand enacted a new Central Bank Act to satisfy the missing pre-conditions for IT adoption. At the same time, the BOT has continuously improved its IT framework to better suit economic conditions, promote growth, and foster resilience to external shocks (Taguchi and Wanasilp, 2018). Currently, the BOT develops an "integrated policy framework" in which the central bank employs several policy instruments to attain three key objectives (i.e., price stability, sustainable economic growth, and financial system stability) under the flexible IT framework.[35]

[34] See Section 4.1.1.
[35] See https://www.bot.or.th/en/our-roles/monetary-policy/about-monetary-policy.html

5.1.3.1. Institutional Arrangement

The BOT operated an IT regime based on the existing institutional framework, in which the MPB was an initial policy decision-making body (Nakornthab, 2009). Particularly, the MPB consisted of 9 members responsible for deciding monetary policy stance under IT (BOT, 2000). Since July 2001, the Monetary Policy Committee (MPC) has been introduced to replace the MPB with the function and power for determining the monetary policy's direction (Inoue et al., 2012).

Besides, as mentioned in Chapter 4, the legislation has officially provided for the BOT power in formulating and implementing the monetary policy since 2008 (Section 5 of the BOT Act 2008). Importantly, the BOT is a state agency, not an agency under government control (Section 5 of the BOT Act 2008). Besides, the MPC and the Minister of Finance jointly decide on the inflation goal, which they subsequently present to the Cabinet for annual approval, according to the new BOT Act (BOT, 2009). This creates a coordination mechanism for setting inflation targets. Currently, the MPC comprises seven members, of which three are from BOT and four are distinguished external experts (BOT, 2022a). Moreover, the MPC convenes every 7-10 weeks (i.e., six times a year) to evaluate economic and monetary circumstances and any risk that may impact inflation and growth. Its goal is to make informed monetary policy decisions based on these assessments.

5.1.3.2. Monetary Policy Objectives

Since the initial stage of implementing IT, the Inflation Reports of the BOT stated that the monetary policy objective is to achieve price stability while promoting sustainable economic growth within a flexible IT framework. Furthermore, the BOT Act, amended in 2008, formally legislates these specific objectives of monetary policy.

Especially when the economy grows slowly and inflation pressure is low, the BOT can implement an accommodative monetary policy to complement the government's fiscal stimulus in supporting economic growth. This has been demonstrated in practice during the recent COVID pandemic (IMF, 2021b). Furthermore, the Inflation Report indicates that factors related to external position stability and financial imbalances are also considered in the design of the

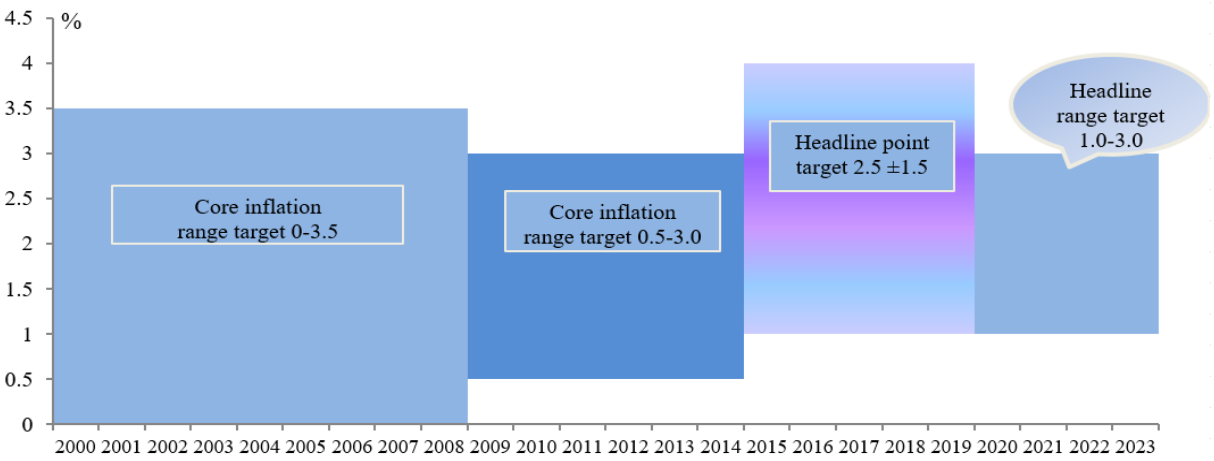
BOT's monetary policy. Over time, financial stability has been added as an objective, in addition to price stability, in the process of developing the IT framework in Thailand[36].

However, in general, the BOT ensures the primary goal of price stability through a series of monetary policy responses not only in the early years of IT but also during IT adoption. Especially, amid increasing inflationary pressure in the post-COVID era, the BOT underscored that its primary focus is to prevent the entrenchment of high inflation, which could otherwise have adverse effects on economic activities (BOT, 2022a).

5.1.3.3. Inflation Target Setting

The inflation target specification in Thailand has been adjusted several times to suit the economic changes, and to promote growth and financial stability.

Figure 5.1. Evolution in setting inflation target in Thailand



Source: BOT website, Author's illustration

-***Target from May 2000 to December 2008***: Thailand's inflation targets for the period 2000-2008 have several remarkable points.

The first highlight is that Thailand used the core CPI which excludes raw food and energy items to pursue its inflation target until 2015. In particular, Thailand chose core CPI because core inflation is less volatile than headline CPI. As a result, the reaction of monetary policy could be more stable so that the interest rate environment will be less volatile (BOT, 2000).

[36] See Details in Section 5.1.4.

The second point is that BOT set up a target range of 0-3.5 percent for core inflation in 2000 and remained at this target level until 2009. The BOT decided on the inflation target level with some considerations. Firstly, the level of inflation target should be reasonable with the inflation rates of Thailand's main trading competitors and partners, to ensure export competitiveness in Thailand. Specifically, in the period from 1990 to 1999, the average inflation rate of those countries was around 3.5 % (McCauley, 2007). Hence, the MPB decided the target for 2000 at 0-3.5 %. Over the next period from 1999 to 2008, the average inflation rate of those countries was about 1.8 % (BOT, 2009). The BOT found that the inflation target of 0-3.5% was still appropriate, so they maintained this target until 2009. Secondly, the BOT also considered the circumstances of vulnerable groups in setting the target. For example, people who depend mainly on savings, and workers who have fixed incomes or little power to bargain wages have often suffered greatly from the high inflation target because their income may not keep pace with the inflation (BOT, 2009). Therefore, the inflation target should be reasonable so let people can adapt to movements in the price level. Besides, the inflation with the target bandwidth of 3.5 percent was reasonable to let more room for BOT to conduct a flexible IT framework and deal with temporary shocks.

The third point is that BOT chose the quarterly–average core inflation as the target for some reasons (Grenville and Ito, 2010). Specifically, the monthly data on inflation was so volatile that it may not reflect the inflation dynamics well. Meanwhile, using an annual average or longer-period target may cause the BOT to be slow in detecting when the actual inflation deviates from its target, and thus fails to respond in a timely manner. Moreover, BOT's macro models were often utilized to make quarterly inflation forecasts. Therefore, from the BOT's view, selecting the policy target as the quarterly average of core inflation was reasonable, especially when it began establishing a basic IT framework (BOT, 2000; Grenville and Ito, 2010).

-Target from 2009 to 2014

Since 2009, under the new Act (2008), the MPC, in conjunction with the Minister of Finance, has determined the inflation target and submitted it to the cabinet's approval. In particular, they unanimously agreed to keep the quarterly average of core inflation as the inflation target but changed the target range. Specifically, the target for 2009 was narrowed to 0.5-3 percent instead of following the target band of 0-3.5 percent. In fact, the modification of the lower bound of the

inflation target to 0.5 percentage points (pp) aims to avoid the possibility of deflation in Thailand. Also, the upper bound was reduced by 0.5 pp respectively (BOT, 2009).

In 2010, the inflation target was still at 0.5-3% for core inflation (BOT, 2010). The Minister of Finance concurred with the MPC that this inflation target range was appropriate and did not change until 2014. Especially, this level of inflation targets helps preserve Thailand's competitiveness in international trade as the prevalent inflation rates of Thailand's majority partner and competitor countries were in line with Thailand's inflation target. In addition, the economy also benefits from low and stable inflation which facilitates investment and consumption toward long-term sustainable economic growth. Thailand maintained the inflation target following a target range for core inflation until 2015.

-Target from 2015 to 2019 and the medium-term

The Minister of Finance and the MPC jointly proposed three significant changes in setting the target for 2015. Firstly, headline inflation was chosen as an index for the inflation target, instead of core inflation. The reason is that core inflation has no longer been able to reflect overall inflation pressures due to an increasing impact on inflation dynamics of changes in energy prices and raw food prices in Thailand, contributing to 27% of the commodity basket in 2014 (BOT, 2015). Secondly, the monetary authorities shifted targeting from a quarterly average of inflation to an annual average target to signal a forward-looking monetary policy. Thirdly, the target range was replaced by the target point with a tolerance band that is clearer, more transparent, and easier to communicate with the public. Specifically, the target was defined for the 12-month change in the headline CPI at 2.5 % with a band of ± 1.5 pp (BOT, 2015). These adjustments may anchor the inflation expectations better, thereby enhancing the efficiency of monetary policy.

The annual average headline inflation target of 2.5±1.5 pp was maintained from 2016 to 2019 and applied for the medium term (BOT, 2019a). In particular, the Thailand authorities stated that this target remains relevant for several reasons. First, the target at this level was in line with Thailand's economic fundamentals and promoted economic growth toward its full potential. Furthermore, the stable inflation target encouraged the public to consume and invest more efficiently and helped to anchor their inflation expectations. Indeed, the data showed the long-term inflation expectations of households and businesses closely followed the mid-point target (BOT, 2019a). Moreover, the midpoint target of 2.5 % was consistent with other IT developing countries, thereby preserving Thailand's price competitiveness. The deviation of ± 1.5 pp from

the target mid-point was appropriate for the Thailand central bank to conduct a flexible strategy and ensure the capacity to accommodate temporary shocks that induce the actual inflation to fall out of the midpoint target. However, it can be noticed that the tolerance interval of ± 1.5 pp in Thailand is quite wide compared to that in Indonesia and the Philippines (i.e., ± 1.0 pp). Besides, according to Schmidt-Hebbel and Carrasco (2016), the deviation band of the inflation target in emerging countries averages ± 1.0 pp.

-Target from 2020 to 2023 and the medium-term

Amid global uncertainty, Thai authorities have shifted from a midpoint target (with a band) to a target range since 2020. This change aims to bolster monetary policy's flexibility to support economic growth as well as financial stability (BOT, 2020). According to Thai authorities, a midpoint target with a band requires the central bank to respond actively when the inflation rate deviates from the midpoint goal in the short term, striving to reach it in the medium time (BOT, 2020). This may negatively impact other objectives (e.g., economic growth or financial stability). Meanwhile, a target range necessitates less policy response if inflation remains within the allowable range. Given global economic volatility, policymakers need more room to stabilize the financial system and achieve sustainable growth objectives. Therefore, switching to a target range may be acceptable for greater flexibility. Nonetheless, it is worth noting that a point target with a band can communicate more easily, serving to anchor inflation expectations toward the midpoint target.

Specifically, although the authorities maintained the use of the annual average of headline inflation as the target index, they changed the specification from the target of 2.5 % with a band of ± 1.5 pp to the range of 1-3 percent for 2020 and the medium term (BOT, 2020). Notably, the upper bound of the target was reduced from 4% to 3%, while the lower limit was kept unchanged. This change was consistent with a downward trend in price levels due to significant structural changes in Thailand (e.g., the development of technology reduces production costs, the evolution of e-commerce leads prices to become more competitive, and domestic demand reduces due to population aging).

During the COVID-19 pandemic period from 2020 to 2021, the 1-3% inflation targets remained appropriate because of weak aggregate demand caused by the restriction measures and the economy's slow recovery. However, the inflation increased significantly in 2022, making it difficult to maintain the 1-3% inflation target for 2023. Despite this challenge, the authorities have kept the target level for the medium term and 2023 at 1-3% instead of raising it to show

their steadfast commitment to the price stability goal (BOT, 2023). This strategy can help reinforce public confidence and anchor inflation expectations within the target range, thereby enhancing the likelihood of achieving the target and supporting sustainable growth. Also, in a time of global volatility and increasing uncertainty regarding inflation, any modifications to the target may perplex the public about the monetary policy stance. Furthermore, a target width of 2% is considered adequate for inflation volatility that may arise while allowing monetary policy to accomplish objectives of medium-term price stability, financial stability, and sustainable growth.

For the commitment to the targets, the MPC has to submit an Open letter to the Minister of Finance to express causes of why inflation breaches the target range, necessary monetary measures, and the expected time to take inflation back to the target if the average headline inflation in the past year or forecast over one year ahead is out of the announced target range, as stated on the BOT website.

Regarding the time horizon of monetary policy, the Thailand authorities initially determined the horizon as the current quarter and changed it to one year from 2015. It can be seen that the target horizon announced officially by the BOT was short because the monetary policy's effect on the economy often has a time lag of one to two years. However, in practice, BOT employed the time horizon of 8 quarters ahead, which is deemed consistent with international practice (Grenville and Ito, 2010). Since 2016, in addition to the annual target, the MPC has announced the medium-term target to conform to the time lags of the monetary policy transmission. Also, the medium-term target enabled businesses and people to effectively plan their investments and consumption (BOT, 2019a).

5.1.3.4. Operational Framework

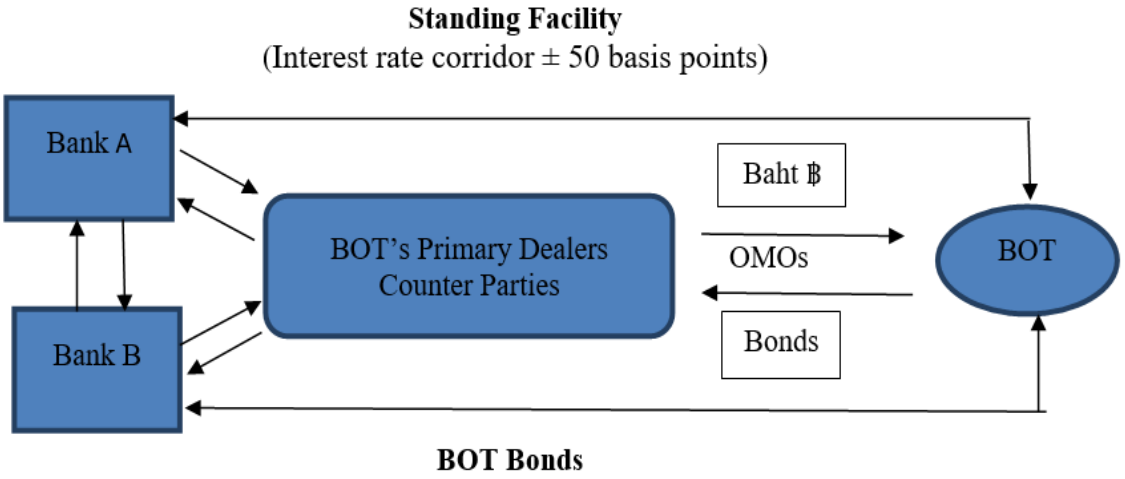
To implement the monetary policy under the IT framework, the BOT set the policy interest rate as a signal for its policy stance. Specifically, from 2000 to 2006, MPC (the policy-making body of the BOT) utilized the 14-day repo rate as the primary policy interest rate (Grenville and Ito, 2010). However, from 2007 onwards, the BOT moved to apply the 1-day Bilateral Repurchase Rate, closed the BOT repurchase (BOT RP) market, and established an interest rate corridor to reform the monetary policy operation framework (BOT, 2008). After announcing the policy rate, the BOT mobilizes its monetary policy toolkit to navigate the short-term money-market interest rates aligned with the change in the policy rate. From there, the BOT's monetary

operations will affect domestic and external demand through the basic transmission channels, thereby influencing inflation and other economic targets (as in Figure 5.4).

(i) Instruments

Regarding the toolkit, the first monetary policy instrument is the reserve requirement. In particular, commercial banks in Thailand are obligated to maintain a minimum reserve on average over a period of two weeks, beginning on a Wednesday and concluding on the second Tuesday after that, currently required at 1% of the average of short-term foreign liabilities and deposits at commercial banks for the preceding period (BOT, 2022a). This averaging arrangement allows banks to keep their reserves below the required amount on certain days and increase their reserves on other days within the same maintenance period, without having to borrow from the interbank market on that day, thereby enhancing the liquidity flexibility for banks and reducing the pressures on short-term interest rates.

Figure 5.2. Monetary Operations Framework in Thailand (since 2007)



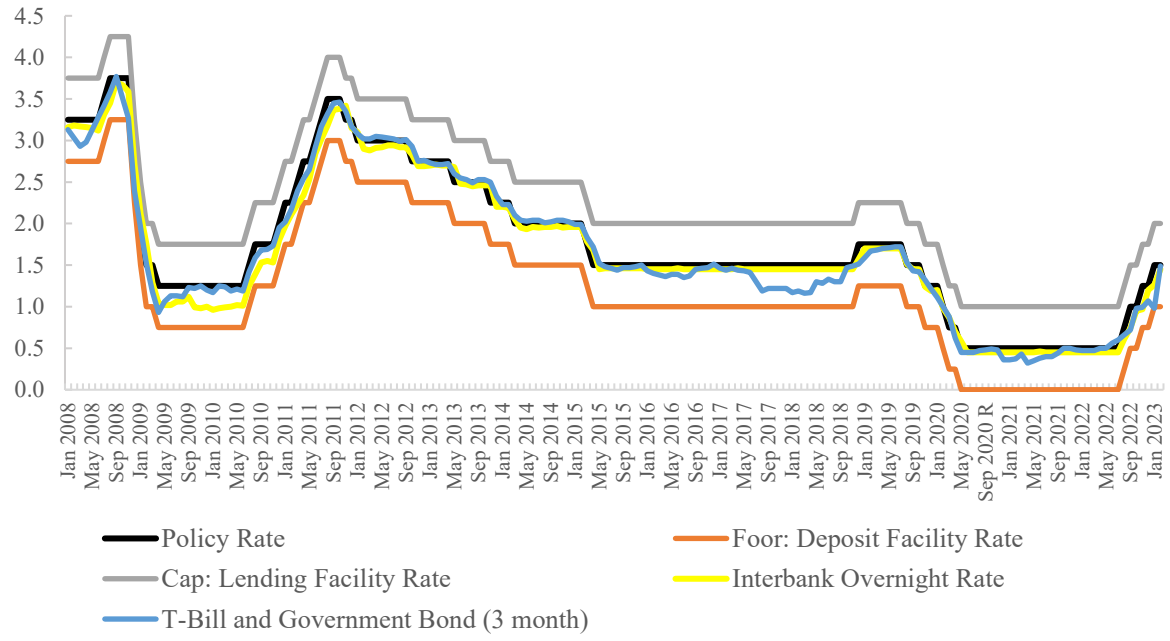
Source: BOT website

Meanwhile, the most used and effective tool of BOT is Open Market Operations, where BOT issues BOT Bills and Bonds, actively conducts Bilateral Repurchase Transactions, operates outright purchases and sales of Public Sector Debt Securities, and implements FX Swaps. Especially, the interest rate applied for 1- day bilateral repurchase transactions is the primary policy rate of the BOT under IT. Besides, since 2013, longer-term transactions (e.g., 7 days, 14 days, 1 month) have applied a variable-rate tender in the form of spreads above (or below) the policy rate (BOT, 2015). This helps ensure that when policy rates change, the interest rates on these transactions also change, thereby enhancing the monetary policy's transmission.

Additionally, to supplement monetary operations, BOT provides Standing Facilities including Deposit and Lending with an interest rate corridor at ± 50 basis points in relation to the policy interest rate since 2007, as illustrated by Figure 5.2 (BOT, 2008). This creates an interest rate corridor system, thereby reducing volatility in the overnight interest rate market.

As shown in Figure 5.3, the interbank interest rate is relatively stable and always within the established interest rate corridor, reflecting the effectiveness of BOT's interest rate policy management. Besides, the short-term T-bill rates and Government Bond Yields also follow the policy rate's movement. Furthermore, adjustments of policy interest rates of the BOT take place gradually. Also, it is announced before the actual rate hike/cut, therefore shaping market expectations, and avoiding sudden fluctuations (IMF, 2022d). For example, during the COVID pandemic in 2020, the interest rate reduction was carried out in several stages, each decrease of 25 basis points, to support the market. In 2021, the policy interest rate was maintained at low levels, combined with targeted financial measures to restore the economy. Amid high inflationary pressure in 2022 and 2023, although forced to raise the key policy rate continuously, the BOT tried to increase gradually by a small amount each time (i.e., 25 basis points each time) to avoid causing shocks to market participants and limit the negative impact on economic growth. Therefore, it can be said that the operation of the BOT's policy instrument is transparent, effective, and smooth.

Figure 5.3. Policy and Short-term Rates in Thailand

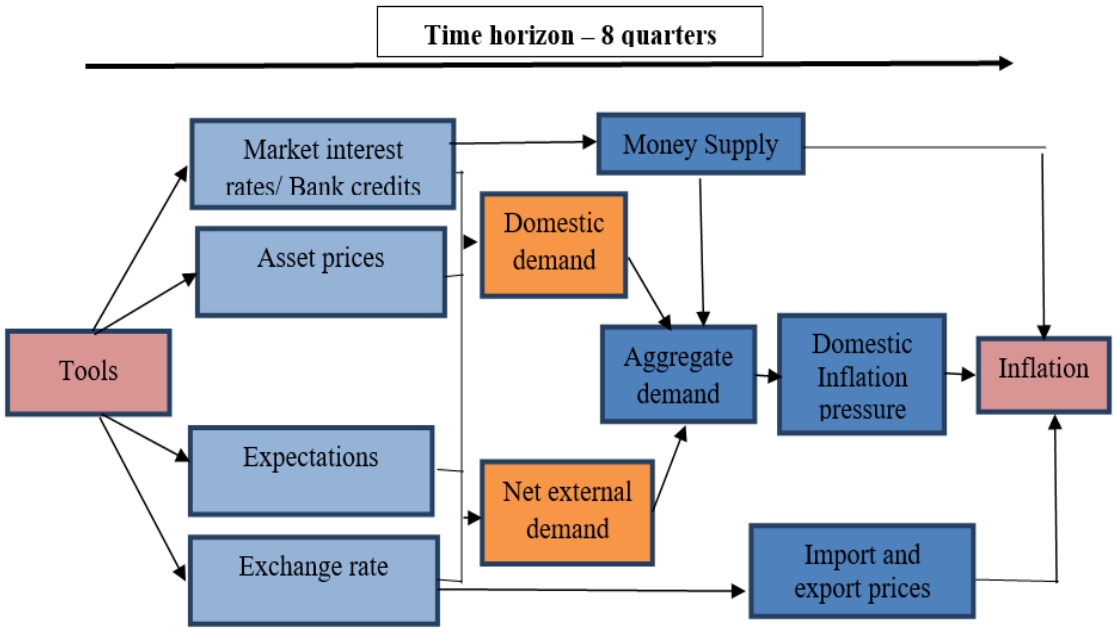


Source: BOT

(ii) Policy transmission mechanism

The influence of monetary policy will be transmitted to the economy by main channels, including interest rate/ bank credits, expectations, asset prices, and exchange rate channels (Figure 5.4).

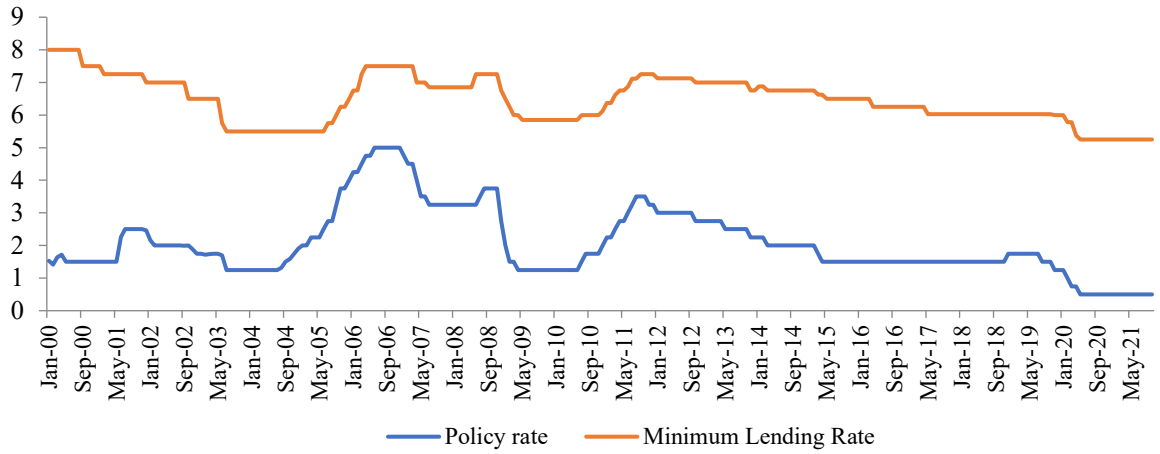
Figure 5.4. The monetary policy transmission mechanism in Thailand



Source: BOT

Notably, the interest rate and credit channels are prominent channels of Thailand's monetary policy transmission mechanism, where households and businesses depend primarily on the bank's credit/ loans (Arwatchanakarn, 2017; Mahathanaseth and Tauer, 2019). Besides, Figure 5.5 shows the development of policy interest and commercial bank retail rates in Thailand. Accordingly, in the first years of applying the IT framework, some divergences between the policy rate and the minimum lending rate (MLR) indicated the interest rate transmission channel was incomplete. After that, the movement in lending rates has tended to follow the changes in the policy rate, suggesting the increased efficiency of the interest rate channel. Especially, when COVID-19 broke out in 2020, the BOT repeatedly cut policy interest rates, thereby contributing to reducing lending rates to support people and businesses during the pandemic. However, the adjustment level of the market lending rate is slower and less than the policy rate change because it also depends on other factors, such as loan demand and operational costs of commercial banks.

Figure 5.5. Policy interest rate[37] and Lending Rate in Thailand (percent)



Source: BOT, Author's illustration

Besides interest rate and credit channels, other transmission channels also contribute to boosting monetary policy effectiveness. Especially for a small open economy like Thailand, the exchange rate channel has some effects on the economy through import prices and capital flows (Wattanakoon, 2013). However, some studies stated that the pass-through from the policy rate to the exchange rate in Thailand was relatively small in comparison to the volatility of the daily exchange rate (BOT, 2008). Moreover, the exchange rate pass-through on inflation in Thailand was low, whereby a 1 percentage point devaluation in the annual exchange rate led to an upward in headline inflation by 0.038% in Thailand (Direkudomsak, 2016). This implies that the effect of the exchange rate channel on inflation in Thailand is not large. In the same vein, Arwatchanakarn (2017) found that the exchange rate channel's role in transmitting monetary policy has become less significant under IT.

In addition, changes in policy rates affect consumption and investment via stock prices and house price channels, thereby affecting inflation. Although the efficiency of the asset price channel in the Thai economy is still relatively modest compared to the credit and interest rate channels, its role has been increasing (Grenville and Ito, 2010). Furthermore, regarding the expectation channel, studies indicate that inflation expectations play a crucial role in the monetary policy transmission mechanism, especially for IT countries (Corbacho and Peiris, 2018; Dany-Knedlik and Garcia, 2018). In turn, monetary operations significantly influence inflation expectations in Thailand both in the short and long term (Luangaram et al., 2015). However, the expectation channel has been weakening in recent years in Thailand, which

[37] Before 2007, the policy rate was the 14-day RP rate. From 2007 onward, the policy rate was the 1-day BRP rate (BOT, 2007).

requires more emphasis on transparency via effective communication in monetary policy operations (Dany-Knedlik and Garcia, 2018).

5.1.3.5. Models for Forecast

Forecast models have been publicly posted and updated in the BOT's inflation report since the first days of IT adoption, later published on its website. Particularly, in the initial period of IT, the BOT employed the core model, also known as BOTMM (the BOT macroeconomic model), including 23 behavioral equations and 12 identities, combined with extensive tests of 14 other equations (BOT, 2000). Accordingly, the BOT highlights the necessity of applying a range of models in the monetary policy analysis process. Simultaneously, BOT is aware of the importance of inflation forecasting and analysis under the IT regime. Therefore, they continuously upgraded the model system to enhance technical capacity, thereby strengthening the monetary policy effectiveness (Corbacho and Peiris, 2018). Currently, the BOT utilizes a sophisticated system of models to formulate monetary policy, including The BOT Macro-econometric Model, a small semi-structural model, a DSGE model, and other different models (BOT, 2022a).

5.1.3.6. Transparency and Accountability

Discussion in Chapter 2 mentioned the importance of transparency and accountability in the IT framework. To that end, the MPC has released Inflation Report quarterly, including inflation projections since 2000. Moreover, they continuously improved the monetary policy communication to the public to increase transparency. In 2013, the MPC renamed the Inflation Report to the Monetary Policy Report, which covers information about the rationale of MPC decisions, macroeconomic outlook, money, and financial stability issues. Furthermore, the MPC has meetings six times a year and holds a press conference immediately at 2:30 p.m. on the MPC's meeting day. Two weeks after each MPC meeting, they also publish the Edited Minutes of the meeting (BOT, 2022a). In general, the BOT has established a good communication system to enhance its transparency, thereby helping to anchor inflation expectations. However, there is still a scope to improve transparency by sharpening the quality of information and increasing publication frequency to a monthly basis.

Regarding accountability, the accountability of the Bank of Thailand has been stipulated explicitly in the law since 2008. Particularly, the BOT must explain to the public the reasons if there is any deviation from the target and measures to bring the inflation rate back to the target

with no escape clauses. In addition to public explanation, the MPC of BOT must write an "Open Letter" to present to the Minister of Finance in cases of the inflation rate being out of the target range according to the MoU between the MPC and the Minister of Finance signed in 2015. Besides, the BOT must report to the Cabinet twice a year on economic and financial conditions and monetary operations (Section 13, BOT Act 2008). However, compared to other IT countries, the frequency of the BOT's report to the Government/ Parliament hearings is to a lesser extent. For example, the central bank of the Philippines must report to the President and Congress quarterly.

5.1.4. Other Objectives and Policy coordination under the IT framework

According to the BOT's mission, its flexible IT framework is implemented in Thailand to meet three objectives: medium-term price stability as the primary goal while promoting sustainable growth and stabilization of financial system (BOT, 2022a; BOT, 2023). The framework is referred to by the BOT as an integrated policy framework, in which it combines a variety of policy instruments to carry out its mandate. Specifically, the policy system includes monetary policy, financial policy, macroprudential policy, capital flow measures, and exchange rate policy. This section will clarify the role of these policies, as well as other objectives, in addition to the BOT's inflation mandate.

5.1.4.1. Exchange Rate and Capital Flow Management

As discussed in Section 2.4, there are discussions about an appropriate exchange rate policy under the IT framework, especially amid capital flow volatility. From a practical perspective, this section shows the implementation of a managed-float exchange rate policy compatible with IT in Thailand.

(i) Exchange Rate Regime

As mentioned earlier, Thailand has shifted to conduct a managed-float exchange rate regime since July 1997.

Throughout IT application, Thailand's de facto exchange rate regime (as indicated in Table 5.1) aligns with the de jure exchange rate regime announced by the BOT. Accordingly, in some cases (e.g., speculative capital flows, disequilibrium of supply and demand, or market disorder), the BOT intervened to avoid the excessive volatility of the exchange rate but did not aim at any specific level for the exchange rate. Moreover, FX interventions of the BOT are not against the economic fundamentals but rather to smooth excessive fluctuations in the exchange rate, which

can cause adverse impacts on the economy, and to preserve the country's competitiveness (Corbacho and Peiris, 2018).

Table 5.1. De facto Exchange rate Regime in Thailand

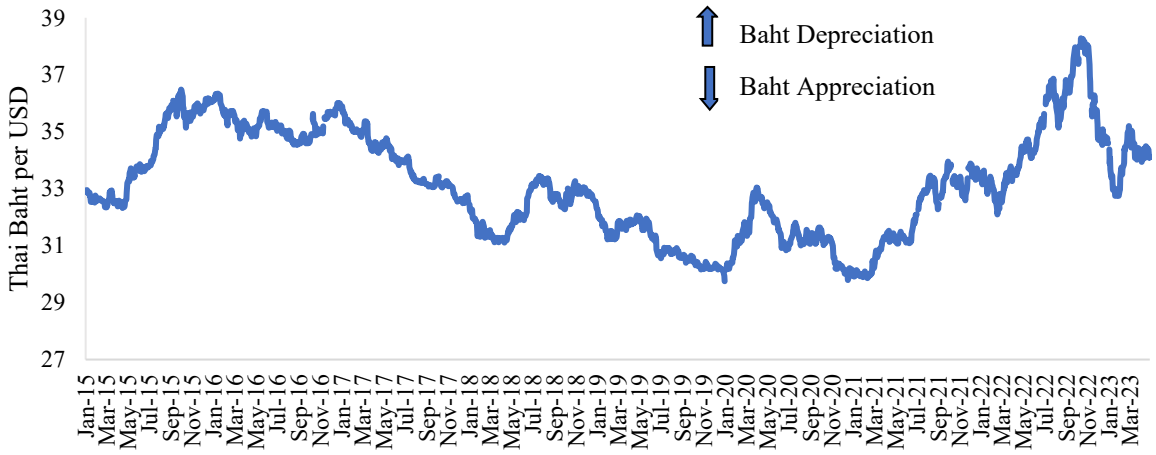
Period	Regime
2000	Independently Floating
2001-2007	Managed floating with no pre-announced path for exchange rate
April 2008*-2022	Floating

Source: IMF, Annual Report on Exchange Arrangements and Exchange Restrictions, 2000-2022

Note: (*) The classification has been changed because of the revision of the IMF's classification methodology, not implying a judgment on a substantive change in the country's exchange arrangement or other policies (IMF, 2009).

Since 2011, the Thai authorities have allowed the exchange rate regime to further greater flexibility to reflect market fundamentals better, thereby assisting structural changes in the economy (BOT, 2013; BOT, 2019b). During the COVID period, the BOT maintained the existing flexible exchange rate regime; meanwhile, interest rate policy focused on supporting the economy. Hence, the de facto exchange rate regime was still categorized as floating, with the Thai baht relatively widely fluctuating around 10% against the USD during 2020-2021 and in line with market forces (IMF, 2021b).

Figure 5.6. Thailand's Exchange Rate movement against the US Dollar



Source: BOT

To be more specific, Figure 5.6 shows the flexible movement of the exchange rate between the Thai baht and the US dollar. Notably, the baht weakened in the first half of 2020 due to the sudden outbreak of COVID-19 affecting investor sentiment, then gradually appreciated at the end of 2020 thanks to the easing of restriction measures and the COVID-19 vaccination

campaign promoting investor confidence. However, the baht reversed to depreciate during 2021 because of new COVID variants and a slow recovery of the economy. In the post-COVID period, given that the volatile global environment put tremendous pressure on exchange rate movements, the BOT has allowed the exchange rate flexibility to serve as a shock absorber (IMF, 2022d). Simultaneously, largely two-sided FX interventions have been undertaken to trim extreme exchange rate volatilities, thereby preventing disorderly market conditions and the substantial adverse effects of undue exchange rate fluctuations on macroeconomic stability (IMF, 2022d). Accordingly, there was significant depreciation by about 12.4% of the baht during the first ten months of 2022 against the USD compared to end-2021. After that, the local currency quickly strengthened and gained about 15.8 % against the USD by the end of January 2023 relative to the end of October 2022, before depreciating slightly in February 2023. Meanwhile, interest rate policy has been emphasized in dealing with inflationary pressures in the post-pandemic period. Overall, the setting of the interest rate of the BOT is hardly bound by the obligation to stabilize the exchange rate, so it is not inconsistent with the IT framework.

(ii) Tools and Strategy: FX intervention and Capital Flow Management

Regarding the general strategy, the BOT lets exchange rate flexibility as the first line of defense against shocks (e.g., large capital flow fluctuations), instead of immediately applying interventions or other instruments (BOT, 2019b).

However, it is required to prevent excessive volatility in exchange rates, adversely affecting the economy[38]. In that context, the main strategies used by the BOTs are occasional FX interventions, capital inflow measures (but some measures were removed or gradually relaxed), capital outflow liberalization, FX hedging encouragement, and continuous FX market development (e.g., FX ecosystem since 2020). Furthermore, macroprudential measures[39] have also been applied to help minimize the risk of financial instability due to sharp exchange rate fluctuations.

FX interventions: Goals

FX intervention is a typical instrument of the BOT. In fact, the initial mission of the FX intervention during the 2000s in Thailand was mainly to prevent excessive currency speculation (BOT, 2013). After that, amid highly volatile capital flows in and out of emerging countries, the key tasks of FX intervention have shifted, aiming at avoiding extreme fluctuations in the

[38] See Section 2.4.1
[39] See Section 5.1.4.2

exchange rate and dealing with huge capital flows, in addition to curbing speculation (BOT, 2019b).

Furthermore, although the exchange rate pass-through on inflation in Thailand is relatively modest, the impact is more significant in the case of local currency depreciation (Nookhwun, 2019). Therefore, FX intervention may be useful to soften excessive domestic currency depreciation caused by an adverse commodity price shock (e.g., in 2022).

Accordingly, the BOT carries out the intervention in both actual and verbal ways, and in both onshore and offshore markets. Especially, the main measures utilized in FX intervention in Thailand are outright spot or forward transactions between the USD and Thai baht (BOT, 2013; BOT, 2019b). The BOT's FX intervention always respects the economic fundamentals, and the BOT will intervene if the exchange rate noticeably differs from the equilibrium established by the economic base. However, the BOT does not notify its data on FX interventions because it argues that data disclosure of interventions may give undesired signals to the market participants, reduce the efficacy of its intervention, and raises the risk of currency speculation (IMF, 2022d)[40]. Instead, the BOT provides data on the status of reserves (e.g., gold, foreign currency reserves, gross international reserves) every two weeks, to preserve its transparency and credibility.

Actual FX Interventions and FX Reserve: Benefits and Costs

Regarding the effectiveness of FX interventions, although there is much controversy about this topic, the FX interventions have contributed positively to the smoothing of USD/THB exchange rate fluctuations in Thailand (BOT, 2013). In addition, the FX intervention also showed a role in lowering the misalignment of the exchange rate (Grenville and Ito, 2010). However, if the central bank intervenes persistently and frequently in the FX market, its impact on shaping exchange rate expectations will decline (BOT, 2013; BOT, 2019b).

Meanwhile, FX interventions have increased the central bank's obligation to offset FX interventions' influence on the money market. Under the IT framework, the BOT must completely sterilize the excessive domestic liquidity resulting from buying USD so as not to affect the money base, ensuring that short-term market interest rates are on track with set policy interest rates. In 2006, the BOT encountered some difficulties in sterilization operations when

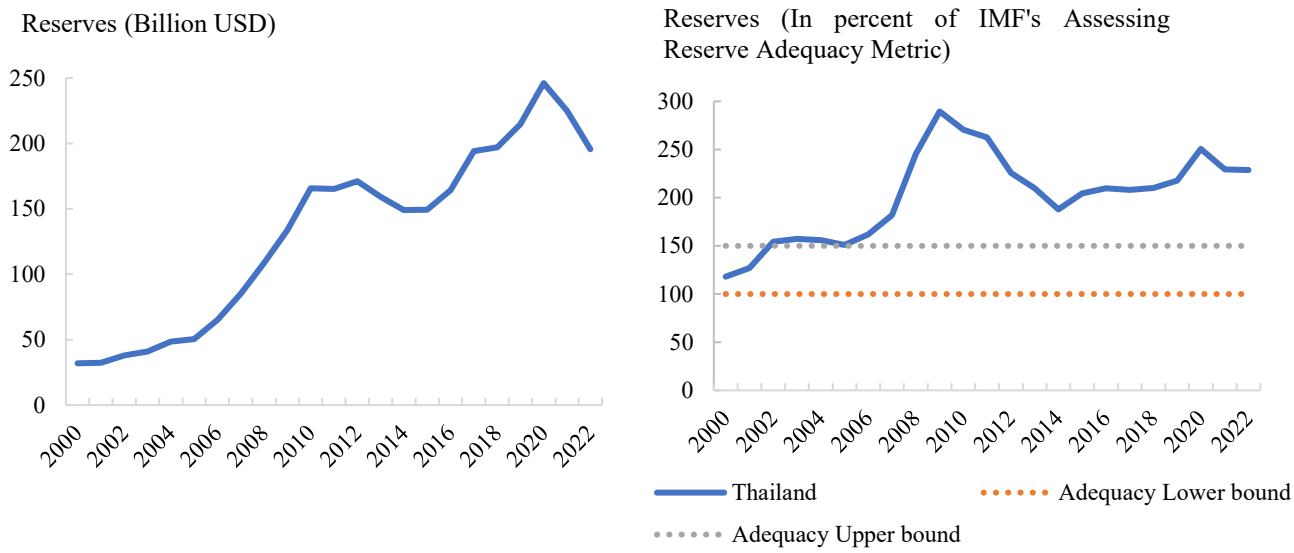
[40] The IMF encourages central banks to increase data transparency on interventions to enhance communication effectiveness under the IT regime. In this regard, however, many other emerging central banks have a similar opinion to BOT (e.g., Bank Indonesia).

there was a shortage of government securities to utilize in OMOs (Grenville and Ito, 2010). However, Thailand has overcome this matter by allowing the BOT to issue its own securities (i.e., BOT bills and bonds) since 2008, thereby enhancing the effectiveness of sterilization in Thailand. In addition, the BOT employs other main tools including bilateral repurchase operations and FX swaps to withdraw excess liquidity caused by FX interventions (BOT, 2019b). Therefore, the diverse and complete sterilization tools ensure that the policy interest rate is unaffected.

Concerning actual FX interventions, in the period before the GFC and the period of conducting unconventional monetary measures by developed countries after the GFC, Thailand's FX intervention policy was mainly one-sided to minimize the strong appreciation of the Thai baht due to large capital inflows (Corbacho and Peiris, 2018). This intervention was accompanied by a sharp rise in FX accumulation (e.g., from USD 50.5 billion in 2005 to USD 171.1 billion in 2012) and the cost of sterilization in Thailand. The cost of holding foreign reserves increases with the size of the reserve and the gap between domestic and foreign interest rates (Adler and Mano, 2016). Meanwhile, others argue that building up FX reserves can be useful in response to adverse shocks, especially during periods of sudden stops in capital inflows, followed by reversal capital flows (Grenville and Ito, 2010). Indeed, adequate FX reserves have helped BOT cope with periods of large capital outflows, such as the GFC period and the taper tantrum in 2013. However, it put pressure on the balance sheet of the BOT. Especially after the GFC, advanced countries continued to maintain low-interest rates to restore their economies, leading to a large interest rate differential against the Thai baht. This raised the cost of holding FX reserves and sterilization operations, weakening the BOT's financial position (BOT, 2013).

However, from 2013 to 2015, as the pressure of capital inflow eased and there were even periods of net capital outflow, Thailand's FX interventions became more symmetric and two-sided. In fact, the BOT allowed its local currency to depreciate in addition to FX interventions to cope with significant capital outflow episodes. Simultaneously, the BOT allowed for more flexibility in exchange rate fluctuations (BOT, 2019b). As a result, FX reserves declined from USD 171.1 billion in 2012 to USD 149.3 billion in 2015, softening the negative effects on the central bank's balance sheets. Still, they rose significantly again from 2016 to 2020 (as shown in Figure 5.7). In fact, huge capital inflows returned to Thailand in late 2018 and throughout 2019 after the sell-off due to US-China tensions in early 2018, causing a significant appreciation of the Baht. In this context, FX interventions were mostly one-sided (buying), combined with tightening capital inflow management (IMF, 2019a).

Figure 5.7. Foreign exchange Reserves of Thailand



Source: IMF, author's illustration

Note. The IMF's Assessing Reserve Adequacy (ARA) metric serves as a gauge to determine the potential FX liquidity requirements of a country during unfavorable situations. The ratio of reserve to ARA metric is evaluated based on specific criteria, such as financial integration, economic adaptability, and vulnerabilities. A ratio ranging from 100% to 150% is deemed sufficient (IMF, 2016a).

In 2021-2022 amid global turbulence causing depreciation pressure on the Baht, exchange rates were highly flexible, and FX interventions were generally two-sided in accordance with changes in capital flows (IMF, 2022d). Besides, the FX reserves moderately decreased from USD 246 billion in 2020 to around USD 195 billion in 2022 but still about 228% of the IMF's ARA metric for emerging countries (Figure 5.7). In other words, Thailand's FX reserves are still significantly higher than the sufficient level indexed by the IMF (a ratio of 100-150% band of ARA metric). Therefore, given a solid external position, the Thai authorities do not need to expand reserves as a precaution. Instead, the exchange rate should continue to be a shock absorber with the limited use of FX intervention. However, in the scenario of excessive baht depreciation causing disorder in market conditions, affecting price stability, and distorting inflation expectations, FX interventions (e.g., FX selling) can be motivated to support a tight monetary policy in achieving the inflation goal and reducing the output cost in Thailand[41]. Accordingly, the BOT combined allowing the Thai baht to be flexible and depreciate with conducting FX interventions to ease the extreme exchange rate pressure amid global uncertainty.

[41] See Annex IV, IMF (2022d).

In summary, the approach of the FX interventions is to smooth excessive short-term instability but generally allow the exchange rate to be flexible. Besides, FX reserves decreased at the end of 2022 compared to the previous period, thereby reducing the cost of holding but still ensuring a high level of FX reserves (well above the sufficient level recommended by the IMF).

Capital Flow Management (CFM)

In addition to FX interventions, some capital flow management measures are applied during periods of massive flow. For example, the Unremunerated Reserve Requirements (URR) were imposed to curb short-term capital inflows from December 2006 to early 2008 (Grenville and Ito, 2010). In particular, the URR measure asked that financial institutions withhold 30% of foreign currencies exchanged or traded for domestic currency (IMF, 2009). The URR exempted for amounts not to exceed $20,000 and FDI. After that, the customers would be fully refunded if proving that the amount had remained in Thailand for at least one year (IMF, 2009). However, the URR just had a short-lived impact and can hinder the development of the financial system in Thailand (BOT, 2013). Therefore, it was lifted in 2008 to support the relaxation of capital flows.

Meanwhile, other measures are still in place to prevent speculative inflows, thereby supporting domestic currency stability (e.g., regulations related to non-resident accounts). Notably, in 2019, given accelerated capital inflow causing the Thai baht to appreciate strongly, stricter restraints on non-resident accounts have been imposed in Thailand. To be more specific, the ceiling on the daily outstanding balance for non-resident baht accounts for securities (NRBS) and non-resident baht accounts (NRBA) was reduced from 300 million baht to 200 million baht while reporting on their debt securities holdings was required to be more stringent. Nevertheless, this policy may lead to rising operational costs and risks for investing in the baht and distorting market conditions. (IMF, 2019a). Therefore, the BOT has begun to relax CFM measures since 2021 to promote baht liquidity. Accordingly, it lifted the NRBA cap for qualified non-resident enterprises, thereby enhancing flexibility in trading and investing in Thailand [42] (IMF, 2022d).

In general, the CFM is only a supporting tool and cannot replace FX intervention in exchange rate management. That said, these two policies can complement each other well in softening

[42] However, this relaxation only applies to qualified non-resident companies. In other cases, the limit for NRBA at 200 million baht is still imposed. Although this policy of limiting capital flows should be eliminated on the recommendation of the IMF, it may be helpful to prevent short-term speculative capital flows by non-residents.

extreme exchange rate changes (Jongwanich and Kohpaiboon, 2012). Meanwhile, the BOT allows the domestic currency to appreciate gradually when the Thai economic fundamentals are strong enough in front of substantial capital inflows (BOT, 2019b).

Capital Outflow Liberalization

The BOT prioritizes rebalancing between capital outflows and inflows to reduce excessive pressures on the exchange rate, rather than adopting strict measures to curb massive inflows. Accordingly, measures related to capital inflows have been gradually relaxed (as mentioned above), accompanied by continuous liberalization of capital outflows since 2010.

Specifically, restrictions on outward direct investment for Thai corporations and individuals were totally lifted in 2010 and 2013 (BOT, 2013). At the same time, the cap for outward portfolio investment of investors (both institutional and retail ones) via local intermediaries was deleted, and the list of legal securities was broadened in 2013. Furthermore, the BOT increased the cap on the number of Thai Baht that domestic financial institutions might lend to non-residents without providing any security, from 300 million to 600 million per non-resident group in 2015. Additionally, qualified investors were allowed to invest directly in foreign securities, but only up to a predetermined level of financial assets in 2016. This regulation was further loosened in 2018 (BOT, 2019b).

In fact, the BOT gradually and prudently enhances capital account liberalization. To be more specific, the BOT has improved the FX regulations since 2017 to make doing business easier (e.g., simplifying the regulations for outflows and FX deposit accounts, easing exporters' requirements for repatriation, and permitting all retail investors to buy stocks abroad up to a certain threshold without need for local intermediaries) (BOT, 2019b).

FX Hedging Encouragement and FX market development

In addition to the above measures, the BOT has promoted the use of FX hedging tools for businesses (especially small and medium enterprises) and has constantly developed the FX market to minimize the need for FX intervention. Specifically, the central bank cooperated with banks to organize seminars and enhance communication on the benefits of FX risk management to businesses, especially small and medium enterprises that are vulnerable to exchange rate fluctuations. At the same time, the BOT offered incentives for these businesses to use FX options. Furthermore, the BOT also asked for transparency and competition in listing FX

forward points of commercial banks to reduce FX hedging costs for small businesses (BOT, 2019b).

Notably, an FX ecosystem has been developed since 2020 to address the current structural problems including unbalanced foreign capital movement, insufficient FX risk management of corporates, considerable costs of FX transactions, and the high effect of offshore markets on the exchange rate (IMF, 2021b). These are also common matters in many emerging countries. In particular, the BOT's strategy package comprises four parts: (i) upgrading an environment for FX investment to balance the capital outflow and inflow (e.g., encouraging outward investment, liberalizing deposit accounts denoted in foreign currency), (ii) reforming the FX regulatory framework (e.g., lowering administrative burden and simplifying procedures), (iii) adjusting the FX service provider to lower FX transaction costs and offer more financial products, and (iv) strengthen market supervision and promote the efficacy of FX management policy (BOT, 2021a). As of 2022, the BOT has already taken some steps to make foreign-asset investment more accessible and adaptable, such as relaxing foreign currency deposit account rules and regulations, streamlining procedures, and encouraging investment abroad in the private sector (BOT, 2022a). The BOT will continue introducing additional measures to complete the new FX ecosystem, which is expected to solve the existing structural obstacles (BOT, 2023).

Although the above structural policies take time and effort to implement, they certainly greatly support the flexible exchange rate regime under the BOT's IT framework while complementing the capital account liberalization process, boosting the FX market and the Thai baht's resilience against external shocks, especially during a period of high volatile capital flows in the post-COVID era.

In short, the BOT has operated a flexible exchange rate policy along with supportive policies (e.g., capital outflow liberalization and FX market development) to ensure consistency with the IT framework. Accordingly, the BOT let the exchange rate flexibly adjust to absorb shocks before applying intervention measures. Besides, FX reserves have always been above adequate, serving as a buffer against shocks. However, when extreme fluctuations in the exchange rate disrupt market conditions and do not reflect the underlying fundamentals or negatively affect the overall macroeconomic stability, the BOT employed FX interventions (mostly two-sided) to minimize sudden short-term exchange rate volatilities and committed to not targeting any exchange rate levels. In addition, the BOT has promoted FX risk management for small and

medium businesses, built the FX ecosystem, and facilitated capital outflows to relieve pressure from excessive capital inflows on the exchange rate. Moreover, some measures to manage capital inflows have been applied but gradually relaxed and often targeted speculative inflows (e.g., non-resident short-term inflows). Therefore, a managed floating exchange rate policy and incomplete capital account openness allow the BOT to attain monetary policy independence within IT.

5.1.4.2. Financial Stability and Macroprudential Policy

Section 2.4.2 presented the importance of integrating the financial system stability objective within the IT framework. This section will elaborate on Thailand's experience in this regard.

Financial Stability Objective and Institutional Arrangement

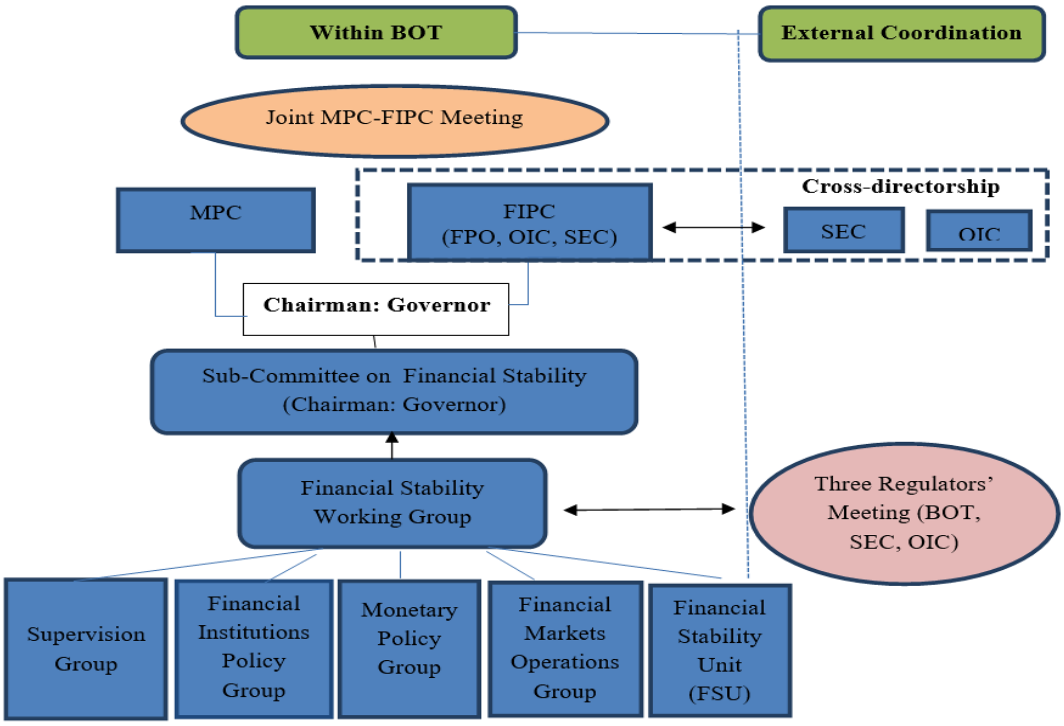
Experiencing the pain of the AFC, Thailand has become aware of the necessity of ensuring financial sector stability for sustainable development (Grenville and Ito, 2010). Hence, the central bank added a section on Financial Stability, which assesses potential financial risks and vulnerabilities, to its quarterly Inflation Report starting in 2003. In 2008, the GFC sounded the alarm about the dangers of systemic financial risks to the global economy. This makes Thailand pay more attention to measures in containing systemic vulnerabilities.

Under the IT framework, maintaining financial stability is also mentioned on the central bank website as one of the obligations of the BOT. Specifically, the BOT emphasizes price stability as a top objective, but it also considers vulnerabilities in the financial sector for policy formulation. Furthermore, although currently there is not any specific law on which agency is in charge of financial obligations, we can deduce the role and responsibility of the BOT in this area from the BOT Act 2485 (1942) and BE 2551 (amended in 2008) (Corbacho and Peiris, 2018). Accordingly, the BOT operates as a leading regulator in the task of ensuring financial stability (BOT, 2017). Also, the BOT has legal supervision for financial institutions, including commercial banks, credit and finance companies, and SFIs- Specialized financial institutions, etc.

In addition to the BOT, there are two other key agencies involved in the task of stabilizing the financial system, namely SEC - the Securities and Exchange Commission (introduced in 1992) and OIC - the Office of Insurance Commission (established in 2007) (BOT, 2017). In particular, the SEC is in charge of supervising institutions in the capital market (e.g., asset management companies and securities companies), while the OIC has a role in overseeing the insurance

industry in Thailand (BOT, 2017). Moreover, the BOT, SEC, and OIC coordinate closely to prevent risks in the financial system through inter-agency forums as well as cross-directorship. Within the BOT, it also established specialized departments for financial safety. Especially, in 2016, BOT set up the Financial Stability Unit (FSU), which is an important point in identifying and monitoring risks of the financial system, as well as a place to connect and share information among regulators in performing financial stability duties (Corbacho and Peiris, 2018).

Figure 5.8. Coordination for financial stability in Thailand



Source: BOT

Note. FIPC - the Financial Institutions Policy Committee (FIPC)

FPO - the Fiscal Policy Office

Macroprudential policy and Monetary policy: Coordination and Tools

As mentioned above, the institutional arrangement allows coordination between the BOT and other government agencies in implementing financial stability policies. Indeed, inter-agency meetings and cross-directorship among regulators are essential mechanisms for collaboration. At the same time, the arrangement lets the BOT set monetary policy, macroprudential, and micro-prudential in a holistic manner via joint MPC-FIPC meetings to achieve price and financial stability under the IT framework while also incorporating harmony with the fiscal policy via the FIPC, where the Fiscal Policy Office is a member.

Moreover, given that Thailand's financial system is still primarily bank-based while the financial market is increasingly developing, the credit and interest rate channels (via bank lending) remain critical monetary policy's transmission channels (Mahathanaseth and Tauer, 2019; OECD, 2021)**.** Therefore, financial system stability can support the efficiency of the BOT's monetary policy transmission. At the same time, this opens the door for deploying the monetary policy to address concerns about financial stability (BOT, 2017). Hence, macroprudential policy is viewed by the central bank as a supplement to monetary policy, rather than a substitute. In particular, the macroprudential policy framework is fairly well designed with a series of measures, which helps the BOT ease the contradiction between the price stability objective and financial stability obligation under IT. Until now, the BOT has utilized three key tools in conducting the macroprudential policy including Loan-to-value (LTV) ratio measures (first applied in 2003), Maximum credit limits on personal loans and credit cards (since 2004), and most recently, Dynamic loan loss provisioning (imposed since 2012) (BOT, 2022b).

Particularly, Table 5.2 provides an overview of the BOT's implementation of macroprudential tools to achieve the financial stability objective. Accordingly, when the GFC broke out, although Thailand was not directly affected as advanced countries, the BOT and other Asian central banks still applied an accommodative monetary policy by cutting policy interest rates to restore the economy (Grenville and Ito, 2010). Also, to support the monetary policy, the BOT loosened LTV measures in 2009 to stimulate the real estate market in Thailand in the aftermath of the GFC (BOT, 2009). Meanwhile, in normal times, macroprudential measures are used properly based on thorough assessments of systemic risk and early warning indicators.

During the COVID pandemic, although the Thai financial system remained resilient and robust, financial vulnerability increased and needs to be monitored as the pandemic severely deteriorated the debt serviceability of households and businesses. Especially, household debt, which was already high before the pandemic (i.e., at 79.8% in end-2019), increased up to an average of 90% of the GDP in 2021. Against this backdrop, in addition to the government's expansionary fiscal policy, the BOT implemented an accommodative monetary policy, and financial support measures to support vulnerable groups through the pandemic. Particularly, proactive and targeted financial measures have been applied, such as temporary relief for personal loans, digital personal loans and credit cards, and debt restructuring schemes for borrowers. Besides, liquidity support measures for small and medium enterprises such as

Special Loan Facility, soft loan programs, and debt restructuring packages are also implemented to reduce the debt burden for enterprises (BOT, 2021b).

Table 5.2. Macroprudential policy in Thailand

Year	Macroprudential Policy	Note
2003	Introduce LTV cap: 70% on high-value residential properties to discourage speculation in the property market, prevent the risk accumulation	Removed
2004	Tighten regulations on maximum credit limits	Removed
2009	Loosen Macroprudential policy to support property market in the aftermath of GFC Increase LTV cap, impose a greater risk-weighted capital charge on high-value mortgages	To combine with lowering policy rates (monetary policy) and expansive fiscal policy to support the economy
2011-2013	Tighten policy: LTV measure - impose a risk-weighted capital charge on high-rise property (in 2011) and low-rise property (in 2013)	Still in place
2012	Introduce Dynamic loan loss provisioning	Still in place
2017	Further tighten regulations on personal loans and credit cards because of high levels of household debts	Temporarily Removed
2020-2022	Loosen policies to stimulate the economy during COVID pandemic: -Relax regulations on LTV measures -Relax regulations on credit card, personal loan and digital loans temporarily	

Source: BOT, and Author's summary

Additionally, the BOT temporarily loosened macroprudential tools to support economic recovery. Specifically, the cap on LTV ratio for resident mortgages was adjusted up to 100%, applicable from October 2021 to December 2022. Furthermore, the BOT also doubled the allowable credit limit for private loans and credit cards, increasing the term and credit limit for digital loans from September 2021 to December 2022. In fact, these easing of macroprudential policies will not increase financial risks as the relaxation is only temporary and the economy still recovers cautiously (BOT, 2021b). At the same time, the BOT always closely monitors changes in the financial system via stress testing and beware of emerging risks to promptly adjust policies, if necessary, based on the existing risk detection and warning system (BOT, 2022b).

In the post-COVID era, inflationary pressures have amplified, and the economy has not fully recovered; the BOT has applied a tightening monetary policy in combination with actively using

macroprudential policies to ensure financial system safety. Moreover, the BOT is in the process of setting up a debt-service-to-income ratio instrument to add to its macroprudential toolkit to mitigate the risks posed by high private indebtedness (IMF, 2022d). However, existing initiatives to support private debt restructurings must be further accelerated.

Overall, the policies implemented by the BOT have been carefully coordinated to minimize the financial system's vulnerability and promote financial stability throughout the pandemic and beyond.

Communication

In addition to macroprudential tools, the BOT emphasizes the role of communication strategy in enhancing the effectiveness of both monetary as well as financial stability policy. In particular, the central bank added a section on Financial Stability, which assesses potential financial risks and vulnerabilities, to its quarterly Inflation Report starting in 2003. Since 2013, a specialized publication called the Financial Stability Report has been published annually to give a comprehensive view and thorough evaluations of the financial market and financial risks, thereby enhancing communication channels on financial stability concerns. In addition, press releases outlining conclusions of joint MPC-FIPC meetings state critical financial risks and stability judgments. Regarding matters that require timely announcements, BOT leaders might express immediate concerns during speeches or to the media. Each Committee meeting is often followed by a press conference (BOT, 2017). In other words, the BOT pays great attention to the communication strategy to strengthen its policy efficacy.

The BOT, in general, demonstrates flexibility in combining various instruments and consistently recognizes macroprudential policy as an essential component of the overall macroeconomic policy to proactively complement monetary policy, thereby supporting price and financial stability objectives within its IT framework.

5.1.4.3. The Government's Coordination

The study has covered many monetary policy goals under Thailand's IT regime. However, we also need to mention the role of government (with its fiscal discipline and administered-price policy) in cooperating with the BOT's policies. Furthermore, sustainable economic growth is the crucial goal of fiscal policy, which is also considered in setting monetary policy of the flexible IT framework. Therefore, monetary and fiscal policies should work closely to achieve

macroeconomic goals. To do that, the government should maintain a healthy budgetary foundation and policies that harmonize with monetary policy.

(i) Fiscal Policy and Fiscal Sustainability

In Section 4.1.1, the study showed that the Thai authorities set fiscal rules and improved budgetary balance to meet the precondition of no fiscal dominance[43] for IT introduction in the 2000s. However, many shocks occurred after that, forcing the government to implement extraordinary fiscal measures. So, amid global uncertainty, it is worth considering whether fiscal sustainability will be upheld as rigorously as in the initial stages of IT introduction.

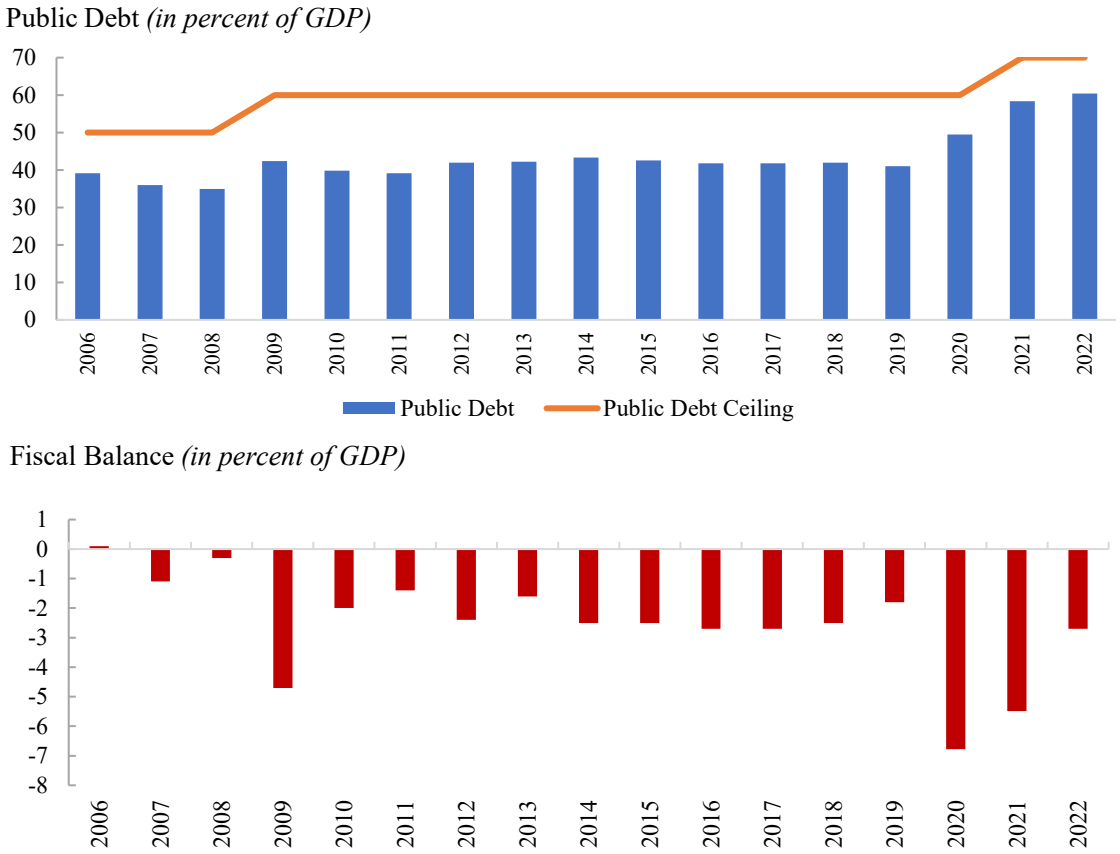
In this regard, the Thai government generally ensured that public debt was below the ceiling and maintained reasonable fiscal deficits (except for 2009 and the COVID period), as depicted in Figure 5.9. These efforts helped preserve the BOT's autonomy and the effectiveness of the monetary policy. Nevertheless, in some periods, the budget deficit was allowed to increase temporarily but only in the short term, and the public debt ceiling was raised to support the economy against shocks. Meanwhile, in normal times, fiscal principles were strictly followed.

Specifically, during the GFC period, the Thai government took fiscal stimulus packages and tax measures to support the economy. The fiscal stimulus package (SP) consisted of two phases: SP1, with a total amount of THB 117 billion spending for 2009, and SP2, with a total amount of THB 1.43 trillion expenditures from 2010 to 2012 (BOT, 2012). Consequently, the budget deficit reached 5.6% in 2009, along with increased public debt. In addition to the government's fiscal policy, the BOT conducted an accommodative monetary policy to facilitate economic growth by lowering the policy interest rate from 3.75% in 2008 to 1.25% in 2009 and supporting liquidity for the economic sectors. However, after the economy recovered, the government gradually withdrew its fiscal stimulus packages to improve its fiscal position, thereby ensuring fiscal sustainability.

From 2010 to 2019, well-observed fiscal discipline combined with enacting the Fiscal Responsibility Act in 2018 further reinforced the policy's effectiveness and provided clear guidelines for fiscal policy implementation. As a result, the low ratio of public debt to GDP was around 40%, and the budget deficit was only about 2-3% of GDP during the 10 years since 2010, creating a fiscal cushion to deal with shocks in the period thereafter.

[43] See section 2.3 for the harmful effects of fiscal dominance on the IT framework.

Figure 5.9. Public Debt and Fiscal Position in Thailand



Source: Ministry of Finance of Thailand, author's illustration

Indeed, during the COVID-19 period in 2020 and 2021, given the terrible devastation of the pandemic on the people's health and the economy, the government was able to launch massive fiscal stimulus packages (worth up to a total of 15% of GDP) thanks to the solid fiscal position accumulated during pre-pandemic (BOT, 2022c). At the same time, the authority temporarily allowed high budget deficits and raised the public debt ceiling to overcome the pandemic. Accordingly, the budget deficit ratio to GDP reached a high level of 6.8% in 2020 from 1.8% in 2019, thereby contributing to pushing the public debt to 58.38% of GDP in 2021 from 41.06% of GDP in 2019. In that situation, the Thai government revised the public debt cap from 60% to 70% of GDP to increase fiscal space. Simultaneously, the BOT lowered the policy rate by 75 basis points in 2020 to a historically low-interest rate to synergize the fiscal policy's effectiveness in supporting the economy. In fact, the interaction of loose monetary and fiscal policies was a reasonable approach, given the pandemic's heavy impact on the economy and the low inflation environment in Thailand.

Since 2022, the pandemic has subsided, and the economy has been in a recovery process, but the increasing inflation rate has shown upward risks. In that context, Thai authorities combined

a more targeted fiscal policy and a normalized monetary policy amid high inflation pressure. More specifically, the Thai government gradually lifted universal COVID-related measures, and decreased medical spending, while targeted financial supports have been maintained for vulnerable groups. In other words, fiscal policy remained expansionary but less so than during the pandemic, thereby keeping a crucial role in restoring economic growth (IMF, 2022d). Meanwhile, monetary policy focused on its top priority goal of stabilizing prices through constant interest rate hikes. As a result, the consolidated fiscal deficit narrowed from 5.50% of GDP at the end of 2021 to 2.72% at the end of 2022. Furthermore, despite a still high public debt at 60.41% of GDP as of 2022, it has minimal risks for several reasons. Firstly, the average remaining time until maturity is up to 10 years. Secondly, most public debt is denominated in domestic currency and almost foreign currency debt is hedged against foreign exchange risks. Lastly, the majority of public debt has fixed interest rates (BOT, 2022c). This also shows the government's efforts in building fiscal buffers in pre-COVID and restoring budgetary consolidation in the post-COVID era, thereby ensuring the independence of the interest rate policy of the BOT.

However, given the risks to fiscal sustainability in the medium and long term amid global uncertainty, Thailand should focus more on public investment (especially in infrastructure and digital transformation), enhance fiscal transparency and governance to boost policy efficiency, and promote structural policies (e.g., upskilling of the workforce) to help the economy quickly recover after the pandemic, thereby contributing to reducing the ratio of public debt to GDP (currently at 60.41% of GDP in 2022). Furthermore, when the economy grows well, tax revenue automatically increases, which helps to rebalance the budget deficit. Moreover, The BOT and the government can further enhance information sharing to achieve high efficiency in conducting coherent macroeconomic policies.

(ii) Administered-price policy and its implications for the IT regime in Thailand

In emerging and transition countries, government policies on essential commodity prices can impact the achievement of the central bank's inflation targets. Indeed, there is a debate about whether the government's price controls undermine the efficacy of monetary policy under the IT regime in Thailand (Grenville and Ito, 2010; Peerawattanachart, 2015). Some studies believe that the government's administered-price policy can support the monetary policy under IT to achieve the inflation goal, while other studies show that the market mechanism can be distorted

in the presence of price controls, causing adverse impacts on monetary policy conduct under IT (Aissa and Rebei, 2012; Peerawattanachart, 2015).

Particularly, when supply-side shocks occurred in 2005 and 2008 with a surge in global oil prices and commodity prices, the Ministry of Commerce (representing the Government) heavily implemented price management policies. The measures mainly focused on subsidies for the energy and transport sector and decrees to impose price-control measures on producers (Grenville and Ito, 2010). The government tried to restrain the price elevation, preserve the cost of living for the public, and indirectly assist the BOT to gain the inflation target against supply-side shocks. However, universal subsidies and price caps can be highly regressive and costly, often funded by quasi-fiscal and extra-budgetary operations. Hence, the extensive use of subsidy policies and direct price controls is unlikely to last forever. When these policies are unwound, prices can significantly increase causing shocks to the overall price level. As a result, this makes it difficult for the central bank to manage inflation. Not only that, in some periods, the extensive administered-price management was one of the reasons leading the inflation rate to deviate from the target range. For example, in 2009, the government implemented free education programs across the country and various measures to support the cost of living, resulting in an inflation rate below 0%. This may have sent misleading signals to the public about the actual price level (Grenville and Ito, 2010).

Furthermore, the administered-price items made up nearly 30% of Thailand's CPI basket[44] much higher than in other IT countries (Peerawattanachart, 2015). It means that many prices calculated in the CPI basket are beyond the control of the BOT. Besides, the central bank faces more difficulty in determining the actual demand level in the presence of administered prices (Grenville and Ito, 2010). Hence, given the discretionary feature of government price-control policy, this poses a challenge in operating monetary policy under IT in Thailand (Peerawattanachart, 2015).

Against this backdrop, the Thai government attempted to reduce the limitations of its price management policy, especially amid severe energy price shocks in 2022. To be more specific, broad-spectrum price control measures (e.g., price ceilings on gasoline, oil, and electricity; subsidies for producers) have been still applied but gradually cut. Besides, instead of heavily relying on price caps which can distort the market price setting, more targeted subsidy policies

[44] As of 2022, around 26 percent of the CPI basket is composed of prices for goods and services regulated or controlled by the Thai government (IMF, 2022d).

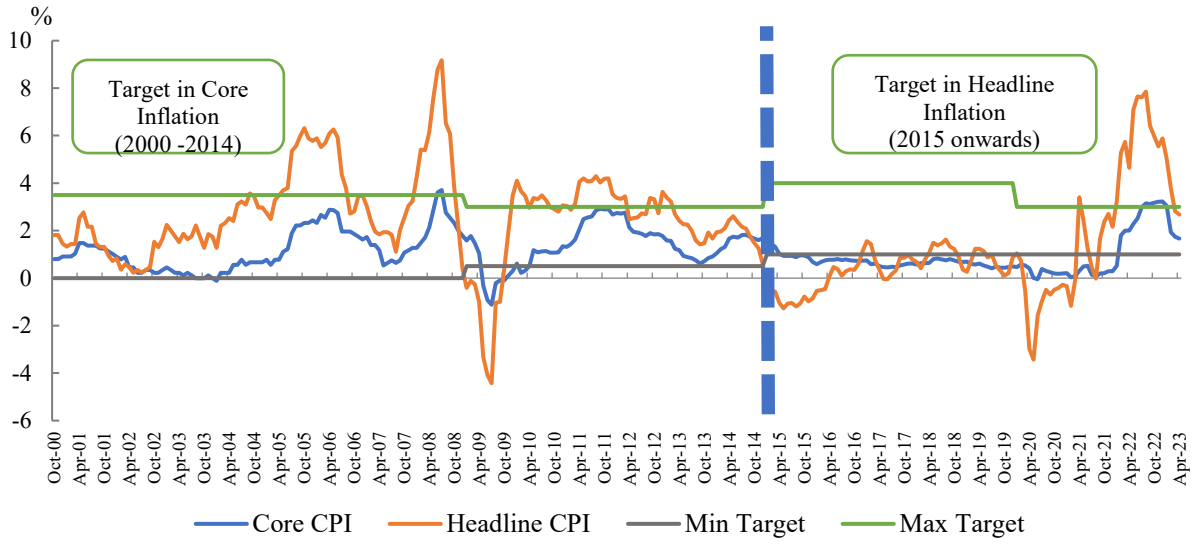
have been introduced, such as cash transfers and aid for electricity and fuel bills for vulnerable groups (e.g., the poor, motor taxi drivers), thereby mitigating the effects of rising living costs (IMF, 2022d). At the same time, temporary tax reductions on energy products have been deployed to ease the burden of energy costs, without affecting the BOT's monetary policy setting.

However, there are several suggestions for Thai government policy. First, the government should limit interference and control over insignificant items. Specifically, the proportion of administered prices in the CPI basket decreased slightly from 30% in 2015 to 26% in 2022 but is still high. Second, in the long term, price caps and other administered-price measures should be gradually relaxed to enable market-driven pricing, thereby allowing the BOT to accurately assess price pressures in making proper monetary policy decisions. Third, given the current presence of the administered-price policy, strengthening communication and information sharing between the BOT and the Ministry of Commerce is especially important. Accordingly, the BOT needs to be regularly updated on changes in the administer-price policy to let it anticipate the plans of the Ministry of Commerce, thereby calculating inflation forecasts more accurately to conduct monetary policy more appropriately.

5.1.5. Performance under the IT regime

Figure 5.10 depicts the core and headline inflation movement in Thailand since the introduction of IT. Accordingly, from 2000 to 2014, when Thailand used core inflation as a policy target, actual inflation rates were mainly within the target range, except for 2009. In fact, core inflation fell below the target's lower bound in 2009 mostly due to government programs, including free education for 15 years and the six major measures to support living costs, but then quickly returned to the allowable range after 2010Q1 (Grenville and Ito, 2010). Meanwhile, from 2015 onwards, when Thailand employed headline CPI as a measure of the inflation target, the BOT failed to achieve the announced target many times partly because of the higher volatility of headline CPI compared to core CPI. Especially, headline inflation plummeted to negative rates in the early period of COVID-19 in 2020 because of sharp decreases in aggregate demand and supply caused by strict containment measures. After that, the inflation rate soared to 7.86% in August 2022, while core inflation increased to about 3%, reflecting global energy price shocks. In that context, the BOT continuously increased policy interest rates to cope with inflation. Thus, given the timely action of the BOT and the easing of supply shocks, inflation dropped significantly starting August 2022 to 2.67% in April 2023, falling within the target range. Also, core inflation declined to 1.66% in April 2023.

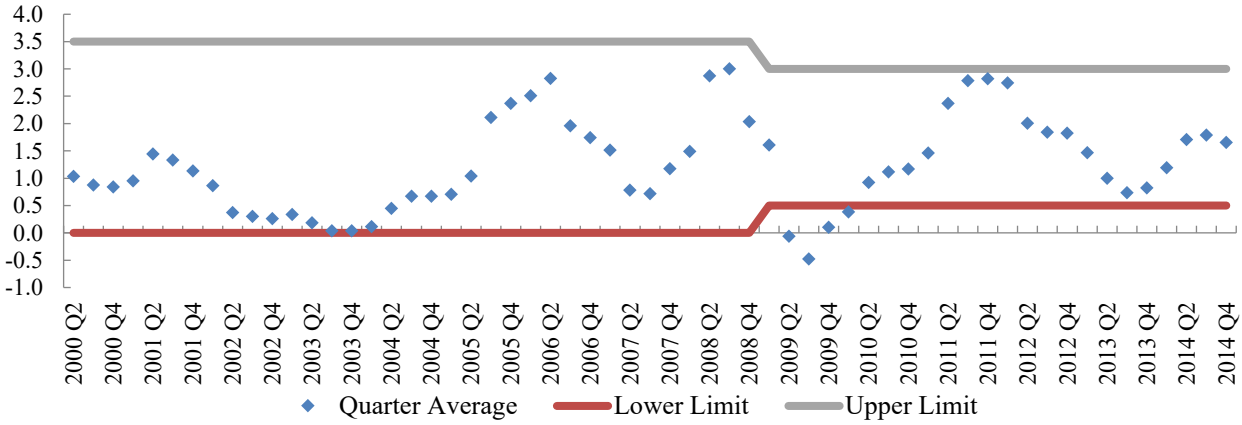
Figure 5.10. Core Inflation and Headline Inflation in Thailand



Source: BOT, Author's illustration

Besides, we can calculate how often Thailand has achieved the inflation goal since IT adoption in 2000. This is considered a simple, perceptive, and popular approach to evaluating monetary policy performance (Grenville and Ito, 2010). Over the period from May 2000 to December 2014, the actual rate was in the target range for 158 months out of 176 months, or 89.77% of the time. Regarding the official target, which was the quarterly average annual rate, core inflation was inside the target range for 55 quarters out of 59 quarters, accounting for 93.22% of the total. This is also clearly seen in Figure 5.11, where there were only four quarters in which inflation was out of target. This is an excellent performance, but it must be noted that during this period, Thailand used a wide target range and selected the core CPI target, which is more stable than the headline CPI used by most countries.

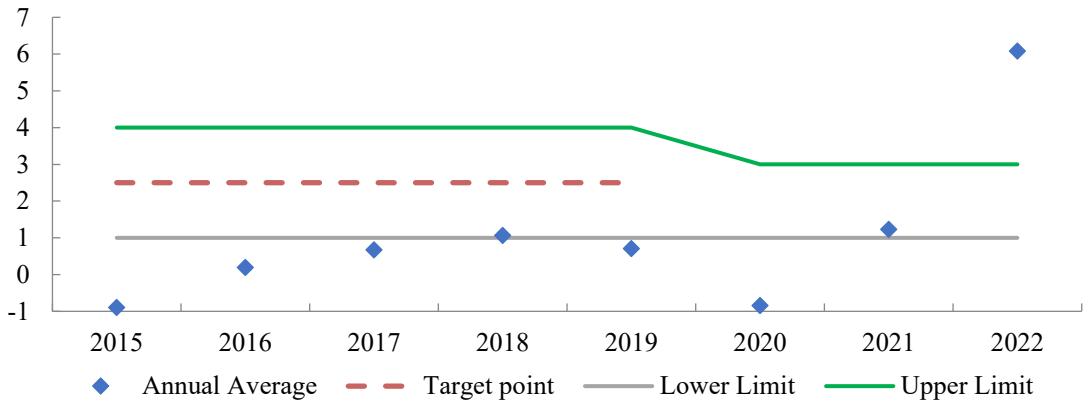
Figure 5.11. Quarterly Average Core Inflation in Thailand (Percent)



Source: BOT website, author's illustration

However, the BOT's performance in hitting targets since 2015 is not good. In particular, the number of times Thailand met the inflation target decreased significantly compared to 2000-2014. From January 2015 to April 2023, the actual headline inflation was only within the target range for 22 months of 100 months, or 22% of the time. Regarding the annual targets, we also should consider the average yearly inflation. Specifically, there was only 2018 and 2021 during the eight years between 2015 and 2022; the headline inflation was within the pre-announced target band (Figure 5.12).

Figure 5.12. Annual Average Headline Inflation in Thailand (Percent)



Source: BOT website, author's illustration

Several technical and economic reasons exist for not reaching the inflation targets during this stage. First, the central bank shifted the target measure from the core CPI to the headline CPI, which has higher volatility. Second, the inflation target bandwidth was narrower than before 2015 (from a wide range of 0-3.5% of core inflation in 2000 to a tolerant band of ±1.5% for headline inflation from 2015 to 2019, then further narrowed to a band of 2% since 2020). Third, the Thai economy faced many adverse factors (e.g., structural changes in the domestic and global economy, the slowdown in the trade-partner economies, the US-China trade tension in 2018, Covid-19, etc.), making the inflation rate often below the target range from 2015-2020. Meanwhile, inflation was too high compared to the target in 2022, which can be temporarily accepted because of the overwhelming and unexpected impact of the global supply shocks, and missing the target is only temporary. Indeed, the target of 1-3% is achievable in 2023 and the medium term, reflecting the BOT's efforts in fighting inflation[45].

[45] The IMF forecasts Thailand's 2023 inflation rate at 2.8% (Data at https://www.imf.org/en/Countries/THA).

Furthermore, some statistics for the inflation rate (e.g., average, standard deviation, maximum, and minimum value) also help to assess Thailand's monetary policy performance because attaining low and stable inflation is the primary goal of the IT framework (Inoue et al., 2012). Accordingly, Table 5.3 compares the inflation outcomes of Thailand before and after the IT introduction. It can be noticed that the mean and the standard deviation decreased significantly after the IT application. In other words, inflation is lower and less volatile for both core and headline CPI than before IT. For example, the average inflation rate dropped from 4.84% before IT to 2.03% after IT, and the volatility index also declined from 3.33% to 1.96%, suggesting IT's success. Especially even during the COVID period and global price shocks after that, although average inflation increased and was much more volatile than in the pre-COVID period, it was still lower and more stable than before IT adoption. However, it should also be noted that inflation has been negative several times, partly reflecting weak demand.

Table 5.3. Inflation performance in Thailand

Inflation Rate	Before IT (1/1990-4/2000)	After IT- Pre COVID (5/2000-2/2020)	COVID- Post COVID (3/2020-2/2023)
Average	4.84	2.03	2.35
	(4.81)	(1.11)	(1.12)
Standard Deviation	3.33	1.96	3.23
	(1.74)	(0.80)	(1.22)
Min	-1.21	-4.41	-3.44
	(0.23)	(-1.12)	(-0.05)
Max	10.58	9.17	7.86
	(8.54)	(3.71)	(3.23)

Source: Author's calculations

Note: The numbers in parenthesis were calculated on core inflation.

Given global volatility and the prevailing structural changes in Thailand (e.g., aging population, weakening domestic demand), the central bank's credibility and effective communication are crucial to help shape inflation expectations, thereby supporting inflation performance. In general, the above analysis has shown that a relatively mature, well-designed, and continuously upgraded flexible IT framework in Thailand has created an effective IT, helping Thailand to withstand shocks.

5.2. Indonesia

Unlike Thailand, the transition from the previous regimes to the IT regime in Indonesia is much bumpier. Specifically, in the early years of IT introduction (the 2000s), the monetary policy

framework in Indonesia was not a full-fledged IT like many other countries (e.g., Thailand) and Indonesia took a long time to become an IT country officially; but what Indonesia has achieved so far, is worth learning. Therefore, in addition to studying the setting of an IT framework in Indonesia, the section also covers the country's transition to IT.

5.2.1. Development of monetary policy framework and Motivation for IT

Before 1997, Indonesia pursued a multiple-objective monetary policy in which the main anchor was a nominal exchange rate with a narrow crawling band of the rupiah against the US dollar (McLeod, 1997). At the same time, base money was used as an operational instrument to control inflation. However, base money as an operating tool was no longer effective because the velocity of money became unstable, stemming from international financial deregulation and innovation (Alamsyah et al., 2001). Meanwhile, the exchange rate regime faced enormous challenges amid huge capital flow volatility. Therefore, Bank Indonesia (BI) tried to shift to the price (interest rate) targeting strategy, replacing quantitative (money volume) targeting, and gradually broadened the exchange rate tolerance band from +/- 2% in 1992 to +/- 5% in June 1996, to +/- 8% in September 1996, then to +/-12 % in early 1997 (before the AFC) (IMF, 1998). However, due to the turmoil caused by the AFC, the effort to transition to a price-targeting mechanism was delayed, and monetary base targeting was retained as a temporary remedy after the crisis (Mariano and Villanueva, 2006). In August 1997, the BI finally floated the rupiah because of the pressures from the AFC. The local currency was seriously depreciated, and inflation escalated. At the same time, the banking system was seriously affected, so BI injected a large amount of liquidity to support the banking system. Still, this action put tremendous pressure on the exchange rate as well as the inflation rate. In that context, BI targeted the monetary base to drain surplus liquidity (Alamsyah et al., 2001).

Moreover, the difficult circumstance prompted the Indonesian authorities to enact a new banking law in 1999, which is an important step forward in institutional development in this country. Accordingly, BI first announced the target for inflation in early 2000. However, the regime in this period was seen as a monetary policy with an explicit inflation target rather than a full-fledged IT framework (Sarwono, 2008; Kenward, 2013). Indeed, BI was only in the process of rolling out a full-fledged framework. In particular, BI still used base money as its operating instrument and an anchor under the IMF-supported program until 2005. Also, BI kept track of money aggregates as well as interest rates at the same time. Therefore, despite announcing explicitly the inflation target in 2000, Indonesia has only officially adopted a full-fledged IT regime since July 2005 (Inoue et al., 2012).

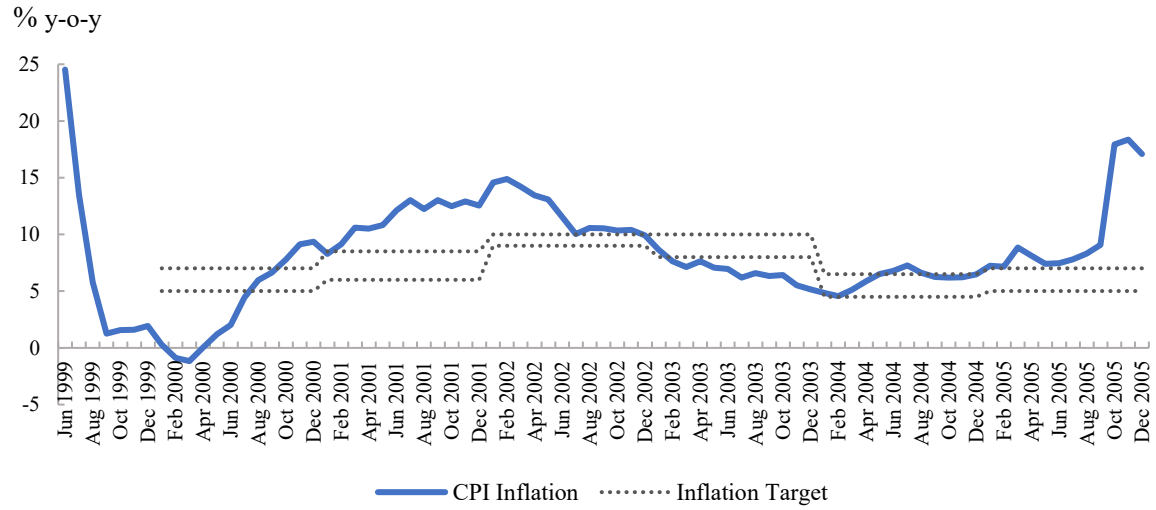
5.2.2. Preparation and Transition toward IT

The transition to an IT framework in Indonesia went through many stages before officially adopting IT in 2005. Significantly, the actual inflation rates were mainly outside the target range during the IT transition (Figure 5.13).

2000 – 2001

BI began announcing its annual inflation target in 2000, and a monthly board meeting was held to assess and set the monetary policy's attitude and direction (BI, 2000). The outcomes of the meetings were widely disseminated to the public using a variety of media, namely the central bank's website, press releases, and conferences. Besides, BI submitted reports four times a year to the Parliament on monetary policy analysis and banking and payment system situations (BI, 2001).

Figure 5.13. Inflation and Inflation Target Range in Indonesia 1999-2005



Source: Bank Indonesia and Author's illustration

Note. BI targeted core CPI in 2000 and 2001. Hence, for targets 2000 and 2001, the headline target was assumed to be the core inflation target plus 2% (BI, 2000; Kenward, 2013).

Initially, core CPI, which eliminates the effects of income policies and administered prices of the government on the CPI, was used to calculate the inflation target for 2000 and 2001. Particularly, the goals for core inflation were 3-5% for 2000 and 4-6% for 2001 (BI, 2001). The target time horizon was set as one year, deemed short due to the lag between policy actions and their effect on inflation in the Indonesian economy (Ito and Hayashi, 2004; Kenward, 2013). Both years´ targets were missed, with the actual rate well above the target, partly due to the rupiah´s unanticipated depreciation (Ito and Hayashi, 2004).

Therefore, the BI's initial inflation-targeting system was in jeopardy after only two first years**.** In practice, it is not uncommon for countries to struggle to meet inflation objectives in the early years of the IT regime, but the central bank's credibility can be harmed (Roger, 2009). This is in line with Indonesian history, but these early failures paved the way for the major changes in the following period (Kenward, 2013).

2002 – 2003

After initial failures, the central bank made some adjustments in setting policy beginning with the 2002 target. Particularly, BI has switched to announcing headline inflation targets (total CPI inflation) since 2002 to achieve greater transparency, and easier communication with the public while using core inflation as a basis for determining monetary policy (BI, 2002). Besides, a medium-term target was also announced to reduce inflation to 6-7% within the 5 years from 2002 to 2006, replacing a one-year horizon[46] (Sarwono, 2008; Kenward, 2013). Also, BI reduced the target width from two to one percentage point. It could be claimed that few emerging countries utilized such a tight target range (Hammond, 2012, Schmidt-Hebbel and Carrasco, 2016). Furthermore, with the targets missed in 2000 and 2001, a broader inflation target range would be preferable (Kenward, 2013). Fortunately, despite those limitations, the year 2002 was the first time BI achieved its inflation target, and the success was maintained throughout 2003 but we must notice that the targeted level of 9-10% for 2002 and 9% with a 1% error margin for 2003 were quite high to preserve the export competitiveness (Ito and Hayashi, 2004). Moreover, the accuracy and consistency of the inflation target level were a matter of concern (Kenward, 2013). For instance, despite maintaining a long-term outlook of 6-7% for 2006, BI lowered the target horizon to four years from five years. Additionally, the BI´s report in 2002 was vague about the 2003 target´s width. According to BI (2002), the target was 9% with a 1% error tolerance for 2003. Whether this refers to a range of 8.5% to 9.5% or 8% to 10% was uncertain. The former appears more feasible, as it would have been in line with the range width of 1 percentage point for 2002 (9-10%) and 2006 (6%–7%). However, according to BI (2003), the aim for the start of 2003 was 9% with a +/– 1% band. This is odd since it indicates that the desired width narrowed from 2003 to 2006.

2003-2005

Indonesia made numerous reforms to its institutions and policy processes to establish a more effective IT mechanism (Table 5.4). Specifically, Law No. 17/2003 was promulgated, requiring

[46] However, this target dropped out in 2004.

the government of Indonesia and BI to coordinate fiscal and monetary policies toward achieving macroeconomic goals. Besides, the amendment to Law 23/1999 in 2004 authorized the government (in consultation with BI) to set monetary policy targets. Thus, since 2004, BI no longer has goal independence, but only has instrument autonomy. However, this was not a setback but a significant development that promoted the coordination of the government with the central bank to achieve better results within IT (Sarwono, 2008). Indeed, the government's policies encouraging production and increasing labor productivity can help alleviate supply-side inflationary pressures. Also, administered-price policies and minimum wage policies notably influence the CPI index in developing countries (e.g., Indonesia, Thailand, and Vietnam). Hence, coordination can enhance the performance of the IT framework in Indonesia.

Table 5.4. Important Institutional changes toward full-fledged IT framework in Indonesia (1999-2005)

Year	Institutional Development
May 1999	Parliament passed Law 23/1999, giving BI more autonomy to achieve its goals.
January 2000	BI released its first official inflation targets.
April 2003	The government and BI must coordinate their fiscal and monetary policies under Law 17/2003 on State Finance.
July 2003	The authorities decided to terminate the IMF assistance program (after AFC).
January 2004	An amendment to Law 23/1993 transferred the task of setting the inflation targets to the government (with BI)
July 2004	A Memorandum of Understanding (MOU) was signed between the government and BI on the process of setting targets, monitoring, and controlling inflation.
September 2004	The Ministry of Finance's Decree on the government's first inflation targets was issued.
July 2005	By switching from base money to interest rate as the operating tool, BI officially adopted its new IT framework (a full-fledged IT).

Source: Bank Indonesia (BI)

The next step taken is the signature of a memorandum of understanding (MoU) between BI and the Ministry of Finance – representing the government in July 2004 on the coordination of setting, controlling, and tracking inflation targets in Indonesia (BI, 2004). The MoU substantially affected subsequent developments in the IT framework in Indonesia. Indeed,

following the agreement's signature, BI and the government formed an interdepartmental Inflation Control Team (Tim Pengendalian Inflasi, TPI), which started to operate in 2005 (BI, 2005). Accordingly, the TPI was responsible for enhancing technical integration between BI and the Ministry of Finance. To be more specific, its tasks consist of suggesting inflation targets, assessing potential sources of pressure on inflation and its consequences for the targets, giving advice on actions to meet the objectives, and distributing information to the public. Besides, Regional Inflation Control Teams (Tim Pengendalian Inflasi Daerah, PIDs) were added to the TPI in 2008 to enhance policy efficiency further (BI, 2010).

Additionally, a significant shift occurred when BI switched to using interest rates for its operational target. Accordingly, BI Rate was employed as the primary rate to indicate monetary policy stance under IT in 2005. There were several reasons in favor of this change. Firstly, base money had long ceased to be an effective monetary policy index owing to the increasingly unstable link between base money, inflation, and output. Secondly, it was tough for BI to keep track of base money because of the unpredictable nature of money demand in Indonesia. Thirdly, the interest rate is a more transparent tool and easier to communicate regarding the monetary policy stance due to the difficulty for the public in understanding the concept of base money (Sarwono, 2008). Therefore, this decision was appropriate. Since that time, BI has officially adopted a full-fledged IT framework.

5.2.3. Setting and Developing the IT framework

When starting IT, BI's challenge was controlling inflation without hindering economic growth and building its credibility in operating a new regime (Juhro and Goeltom, 2015). To this end, the IT framework applied in July 2005 had some notable changes compared with the previous framework. First, BI used the policy interest rate in place of the base money as its new operating target. Second, monetary policy was implemented in a forward-looking direction based on forecasts. Third, BI developed and strengthened communication channels that enhance transparency and accountability, thereby building credibility. Finally, the new framework promoted policy coordination between BI and the government in achieving goals (Sarwono, 2008; Juhro and Goeltom, 2015). Simultaneously, the designs for the IT framework have constantly been updated, and most of them are now consistent with the best practice.

Notably, BI has upgraded its original IT framework into a flexible IT framework (so-called "enhanced" IT framework) since 2010, based on the existing core elements of an IT framework (Juhro and Goeltom, 2015). In particular, inflation targeting remains the mainstay of monetary

policy strategy, combined with several other elements: (i) synergy between macroprudential policy and monetary policy to enhance the transmission and sustain macro stability, (ii) the supporting role of exchange rate policy and capital management policy within IT framework to contribute to macro stability, (iii) further enhanced coordination between the government and BI to contain inflation and preserve financial stability (iv) the critical role of communication strategy as an effective tool of the IT framework. Indonesia's experience proved that establishing a central bank policy mix is superior to relying solely on its previous basic IT framework (Warjiyo, 2022). Significantly, the flexible IT framework helped BI cope with the continuous shocks in the COVID and post-COVID era.

5.2.3.1. Institutional Arrangement

As mentioned in Section 4.1.2, while the government (in coordination with BI) sets the inflation target, BI has complete independence to formulate and conduct monetary policy to achieve the target under IT. During IT implementations since 2005, this mechanism has been unchanged. More specifically, the Board of Governors, which includes the Governor, Senior Deputy Governor, and 4-7 Deputy Governors, is the decision-making body responsible for regulating and setting monetary policy stances (Hammond, 2012; BI, 2021). Besides, the Board of Governors convenes at least monthly to make decisions on monetary policy tools to attain the inflation targets set by the government in coordination with BI. Each meeting is held for two days, with the first day discussing thorough assessments of economic, monetary, and financial developments and the second day determining policy actions (BI, 2023). So far, the decision-making body has consisted only of internal members, not external members[47].

5.2.3.2. Monetary Policy Objectives

As mentioned in Section 4.1.2, before and in the early years of IT application, the legal foundation (Act No.23/1999) stipulated that Bank Indonesia's mandate is to achieve Rupiah stability. The legal Act No.23/1999 was revised several times during IT development. In particular, the revisions in 2004 and 2009 left the central bank's mandate intact. Nevertheless, the latest amendment of the BI Act in 2023 has officially legalized financial system stability as an additional objective[48] besides domestic currency stability. Even so, inflation is still the

[47] The institutional arrangement in Indonesia is slightly different from that of Thailand, where the monetary policy's decision-making body consists of both internal and external members.
[48] De facto, the goal of financial stability has been integrated into BI's policymaking process since 2010 (Warjiyo, 2022).

predominant goal of BI's monetary policy under the IT regime. Hence, the institutional arrangement and tasks stipulated by current laws are appropriate to the IT strategy.

In practice, BI pursues a flexible IT framework (Kenward, 2013; Warjiyo, 2022). Therefore, BI weighs the gains from reduced inflation against the costs of ignoring other issues. Specifically, the design of monetary policy to support the economic recovery is clearly shown during the COVID period. At that time, BI continuously lowered the policy rate and then kept it at a low level for a long time to minimize the damage caused by COVID to the economy. Also, the exchange rate and financial stability issues have been added to macroeconomic forecasting and policy analysis models for monetary policy responses in the enhanced IT framework since 2010. Simultaneously, FX intervention and macroprudential tools have been employed to supplement the interest rate tool to improve policy effectiveness (Warjiyo, 2022). In the context of increasing inflationary pressure after the COVID period, BI has consistently committed to returning inflation to the predetermined target level by continuously increasing policy interest rates to signal a tight monetary policy (BI, 2023). In short, when BI formulates monetary policy, the balance between inflation and economic growth, stability of the exchange rate, and the financial system are considered. However, if a conflict arises among these factors, priority is given to the inflation target (Warjiyo and Juhro, 2019; Warjiyo, 2022).

5.2.3.3. Inflation Target Setting

In September 2004, the government began to set the inflation target for the first time (in consultation with BI) instead of BI's previous full authority to set the target (BI, 2005). The target is determined using headline CPI measurement. Notably, during the early years of IT, the inflation target level in Indonesia was relatively high, unstable, and adjusted regularly. For example, the government initially determined the target for three years from 2005 to 2007 at 6% (±1%), 5.5% (±1%), and 5% (±1%), respectively. However, because of the oil price shock, the government raised the target to 8% for 2006 and 6% for 2007. Also, there was an ambiguous announcement of the inflation targets in some periods (Kenward, 2013). For instance, both the Ministry of Finance (MoF) and BI published the targets for inflation for 2010 and the later years, but they were not identical. While BI tended to publish the target ranges in the governor's speech, MoF (representing the government) often released the targets as a point with a tolerance band. In recent years, inflation targets have been published more consistently based on the official announcement through a regulation issued by the Minister of Finance and set every

three years. Accordingly, the announced inflation target is in the form of a central point with a tolerance band of ± 1 percentage point (pp).

Table 5.5. Inflation Target in Indonesia 2005-2023

Year	Headline Inflation Target
2005	6.0±1%
2006*	8.0±1%
2007*	6.0±1%
2008	5.0±1%
2009	4.5±1%
2010-2011	5.0±1%
2012-2014	4.5±1%
2015-2017	4.0±1%
2018-2019	3.5±1%
2020*	3.0±1%
2021-2023	3.0±1%

Source: Ministry of Finance, Indonesia

Note: (*) The target for 2006 and 2007 was revised from the previously announced target of 5.5% (±1%) and 5% (±1%), respectively. The target for 2020 was revised from 3.5% (±1%) to 3% (±1%).

Besides, while the set inflation target from 2005 to 2009 was sometimes up and down erratically (Table 5.5), it has been set more reasonably since 2010 with a gradual downward path toward a low and stable target in the medium term and line with the domestic economic development and global conditions. In 2020, given a low inflation environment due to weak demand caused by the COVID-19 pandemic, the government lowered its initial inflation target for 2020 from 3.5±1% to 3.0±1% (BI, 2020). This was proper, given that the eventual inflation rate was only 2.03% in 2020.

In 2022, high inflation pressure because of the global supply shock, combined with the unexpected increase in aggregate demand after COVID-19, made it difficult to achieve the set target. Against this backdrop, BI was quick to tighten monetary policy. Moreover, to anchor inflation expectations, instead of raising the target as in the oil price shock of 2005-2006, the government and BI mutually decided to keep the inflation target unchanged as a message showing a solid commitment to price stability. As a result, although the inflation target in 2022 was not achieved, inflation in 2023 is forecasted to be within the set target of 3.0±1% (BI, 2023).

Concerning the target horizon, it has been extended from one year to the medium-term of three years (Decree of the Minister of Finance No.93/PMK.011/2014). To be more specific, the time horizon was continuously adjusted from 1 year (e.g., 2000, 2001) to 5 years (e.g., 2002-2006), shortened to 3 years (e.g., 2005-2007), reduced to 2 years (e.g., 2010-2011), and then 3 years from 2015 onwards. The current time horizon in Indonesia is reasonable and consistent with international practice (Schmidt-Hebbel and Carrasco, 2016; Niedźwiedzińska, 2018). Indeed, the one-year horizon was often criticized for being too short, as there is always a lag effect of monetary policy transmission. Besides, a rational policy horizon gives monetary policy authorities sufficient space to implement a flexible IT strategy regarding additional tasks such as economic growth and financial stability.

5.2.3.4. Operational Framework

As mentioned earlier, one of the most critical decisions in the operational mechanism of BI under IT was the switch to utilizing the interest rate as the operational target, replacing the base money since July 2005.

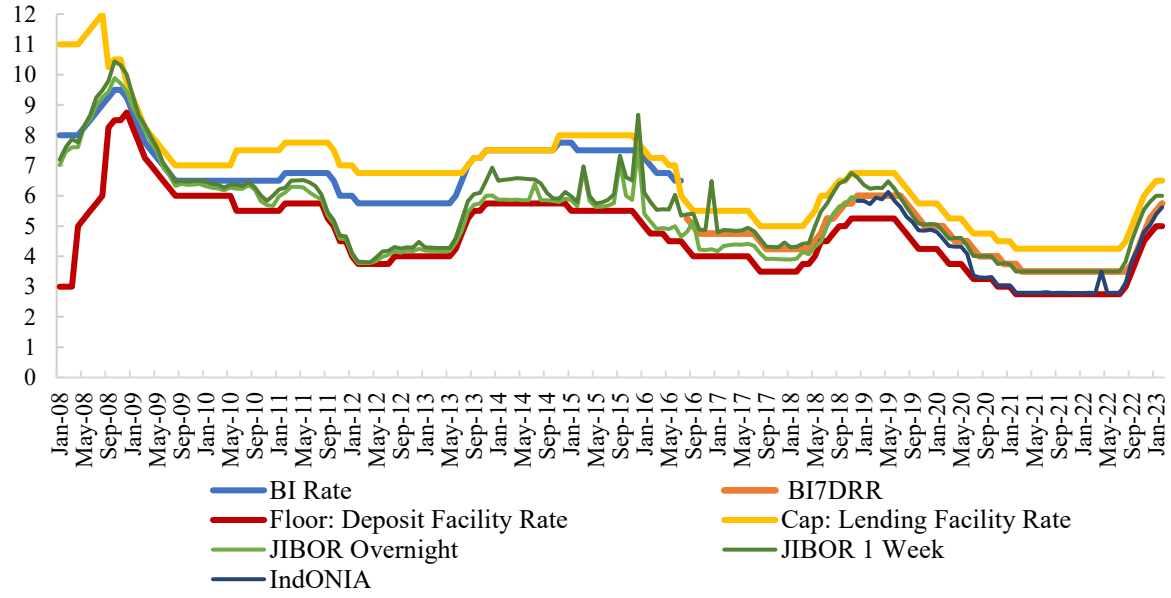
Accordingly, the BI Rate (equivalent to a 12-month interest rate in monetary operations' term structure) was employed as the primary tool, and the 1-month SBI (Bank Indonesia Certificate) rate in OMOs temporarily served as the operational target in the initial period of IT (BI, 2005). Specifically, the BI Rate was set monthly by the Board of Governors based on comparing the forecasted inflation path against the target (Kenward, 2013). Additionally, the weekly OMOs were the main parts of the operational framework for attaining the desired BI Rate level. At the same time, daily FTO (Fine-Tuning Operations) also utilized government bonds and one-month SBI as tools to improve the efficacy of liquidity management (Sarwono, 2008).

Since 2008, the overnight interbank rate has been used as the operational target, replacing the 1-month SBI rate to strengthen the effectiveness of monetary policy (BI, 2008). Besides, BI has utilized the Deposit Facility and the Lending Facility (or Financing Facility) to form the floor and the cap of the interest rate corridor under IT. As a result, via monetary operation tools, changes to BI Rate were reflected in the overnight interbank interest rate, subsequently in other market interest rates, and eventually, economic activity and inflation.

However, given a relatively long-term structure (equivalent to the 12-month rate), the BI Rate showed weakness in effectively guiding the interbank interest rate from end-2010 to 2016, especially amid massive capital inflows after the GFC. Specifically, the interbank interest rates

often remained close to the interest rate corridor's lower bound until the end of 2015, well below the benchmark interest rate (BI Rate). Subsequently, in 2016, the interbank interest rates exhibited significant fluctuations, surpassing the interest rate corridor's upper bound (Figure 5.14). These highlighted the inefficiency of the BI rate in steering the interbank interest rates. In response to this situation, BI has shifted to employing the BI 7-Day (Reverse) Repo Rate (BI7DRR) as the primary policy rate, replacing the BI Rate since August 2016 (BI, 2016).

Figure 5.14. Policy Rate, Interest Rate Corridor and Interbank Rates in Indonesia (percent)



Source: Bank Indonesia

Note: JIBOR is Jakarta Interbank Offered Rate. Since January 2019, BI no longer announced overnight JIBOR. Instead, BI announced the IndONIA rate (Indonesia Interbank Overnight Index Average) rate.

Especially when compared to the previous policy interest rate (BI Rate), the maturity of the monetary instrument has been reduced to 7 days through the implementation of the new policy rate (BI7DRR). This change was necessary to speed up monetary policy transmission efficiency via the banking and financial system, thereby driving inflation toward the target. Furthermore, this reform boosted the financial market depth, particularly in developing interest rate structures with terms of 3–12 months in the interbank money market (BI, 2017). As a result, since 2017, interbank interest rates have closely fluctuated around the BI7DRR and consistently remained within the established interest rate corridor (as shown in Figure 5.14).

Furthermore, open market operations and reserve requirements have been deployed along with the policy rate. Thereby, a change in the monetary policy stance will affect the inflation rate

through multiple channels (e.g., credit and interest rate, asset price, exchange rate, and inflation expectation).

5.2.3.5. Models for Forecast

Within the IT framework, a variety of data consisting of model-based projections, expert opinions, surveys, risk analyses, and uncertainty assessments have been employed during the BI's board meetings to make monetary policy decisions (Warjiyo and Juhro, 2019). Hence, economic models, including specialized models for forecasting, are an integral part of making appropriate policy decisions.

In Indonesia, the central bank has gradually improved its technical capacity, developed economic models to enhance forecasting accuracy, and communicated their use to the public through reports (e.g., Monetary Policy Report, Economic Report), in support of shaping inflation expectations (Warjiyo, 2014; Corbacho and Peiris, 2018). Since 2010 along with the upgrade in the monetary policy framework into a flexible IT framework, a FPAS (Forecasting and Policy Analysis System) has been applied including modern models and the most advanced techniques. Compared with the past, the forecasting and analytical models have been expanded to add macro-financial linkages. Put more technically, external default risk has been used as a representative for a sudden stop capital reversal and credit gaps to account for financial system pro-cyclicality. Particularly, the FPAS of BI includes a core model, which is a DSGE-type consisting of 10 key behavioral equations, accompanied by a medium-term model (MODBI), and several small-scale economic structural models (Warjiyo, 2014). In addition, BI also has conducted comprehensive surveys and data collection to complete the database supporting its analysis system. These evolutions in technical and model issues are particularly essential for the policy formulation process in Indonesia, especially under the "enhanced" IT framework (Warjiyo, 2022).

In general, the comprehensive model system has provided a good path for BI's policy framework, including four key tools: interest rate tool, exchange rate policy, capital flow management measures, and macroprudential policy for the effective policy mix (Warjiyo, 2022).

5.2.3.6. Transparency and Accountability

The transparency and accountability were specified and provided for in Act No. 23/1999 and subsequently amended by Act No. 3/2004, Act No. 6/2009, and Act No. 4/2023. Accordingly, BI is an independent institution that balances transparency and accountability.

Transparency and Communication Strategy

Transparency and communication are vital for the efficacy of monetary policy in Indonesia, where public inflation expectation is one of the key drivers of inflation under IT (Dany-Knedlik and Garcia, 2018). Moreover, BI can directly control short-term interest rates, but long-term interest rates are affected more by forward-looking expectations of monetary policy, which can be steered via communication strategy.

In the early stages of IT adoption, BI's communication and transparency were mainly accomplished through press releases, formal exchanges with economic observers and the public, as well as reports to the House of Representatives each quarter (Mariano and Villanueva, 2006; Hammond, 2012). At that time, the central bank's website, although still in the development and completion stage, was enough to provide the public with basic information on monetary policy, the banking system, and payment (Mariano and Villanueva, 2006). In August 2005, BI first published the Monetary Policy Report to strengthen communication efficiency, transparency, and consistency. To this day, the Monetary Policy Report has remained one of the BI's most important publications. It has been published quarterly, which comprises the Board of Governors Meetings' comprehensive assessment of inflation projections, the most prominent economic and financial changes, and key monetary policy decisions to steer inflation toward its target (Hammond, 2012; BI, 2023).

Currently, BI has developed various communication means to promote transparency and accountability, which are crucial components of a practical IT framework. Specifically, in addition to press releases, BI holds press conferences after meetings. Furthermore, numerous publications are released, including the monthly Monetary Policy Review, the quarterly Monetary Policy Report, the annual Economic Report on Indonesia, and the Annual Report (reissued back in 2020), among others. Besides, the BI website has increasingly improved in both technical and content terms, while social media means have been employed to facilitate public understanding of Indonesia's monetary policy stance. Additionally, talk shows, seminars, and regional dissemination on monetary policy have been regularly organized.[49]

In general, BI expects that by improving its communication strategy, media, and coverage, it will be able to lead market expectations toward the target better while increasing its credibility (Warjiyo, 2016*)***.** Therefore, since 2010, a proactive communication strategy has been

[49] See Details on the BI website.

recognized as a vital instrument for the efficiency of a flexible IT framework in Indonesia (Warjiyo, 2022).

Accountability

The accountability provision in the execution of budget, duties, and responsibilities at BI is outlined in Act No. 23/ 1999, as latest amended in 2023. Accordingly, a central bank's high independence necessitates high accountability. Each year, at the start, the central bank is obligated to announce news via the media about the conduct of monetary policy over the last year, the inflation targets, and the monetary policy strategy for the next year. At the same time, BI must submit quarterly and annual reports on its policy operations to the People's Representative Council (DPR) and the President (Warjiyo and Juhro, 2019). These reports are evaluated and discussed at parliament as part of the annual examination of BI's and its board's accomplishments.

5.2.4. Other Objectives and Policy coordination under the IT framework

The deep integration into the global economy, accompanied by heightened fluctuations in foreign capital inflows, has made macroeconomic policies' implementation in many emerging economies, such as Indonesia, increasingly complex (Juhro et al., 2022). Under this circumstance, a mixture of central bank policies has been employed in Indonesia, including interest rate, exchange rate, macroprudential measures, capital flow policy, synergy with the government, and communication. Especially the COVID-19 pandemic and post-COVID periods have further emphasized the importance of policy integration to deal with shocks.

In this regard, interest rate policy and communication strategies within the IT framework have been detailed in the previous section. Hence, this section focuses on analyzing the remaining elements in BI's policy mix and other objectives under the IT framework in Indonesia.

5.2.4.1. Exchange Rate Objective and Exchange Rate Policy

As mentioned in Section 4.1.2, the priority target is inflation, and the policy rate is the primary tool under the standard IT framework. Hence, despite being mentioned as a statutory goal, the exchange rate variable was merely viewed as an information factor in formulating the monetary policy during the early stage of IT in Indonesia (Mariano and Villanueva, 2006). Moreover, the central bank should not attempt to manage the exchange rate but let it float freely.

However, given the increasing capital flow volatility amid global uncertainty, the exchange rate path in Indonesia does not always align with the economic fundamentals (Warjiyo, 2022). Besides, investor risk perception, which prompts capital fluctuations, is one of Indonesia's major drivers of exchange rate dynamics (Juhro and Goeltom, 2015). Therefore, although the rupiah should still be flexible and has room to appreciate or depreciate, it should not be wholly free-floating but be adjusted to reflect economic fundamentals and avoid excessive volatility jeopardizing the economy and the financial system. This is an appropriate strategy since it considers that undue exchange rate volatility can harm the economy (especially since GFC), and the pass-through of the exchange rate on inflation should be monitored (Juhro and Goeltom, 2015). Hence, since 2010, BI has officially considered exchange rate management policy as a component of its flexible IT framework to attain price and financial stability (Warjiyo, 2022). This section will clarify this issue.

(i) Exchange Rate Regime in Indonesia

As mentioned earlier, Indonesia has de jure adopted a freely floating exchange rate arrangement since August 1997. Meanwhile, during IT application, the de facto Indonesia exchange rate regime categorized by the IMF is slightly different from the de jure one (as shown in Table 5.6). For example, Indonesia's strategy was sometimes classified as Stabilized Arrangement (e.g., from 2010 to early 2011, and in 2017) or Crawl-like Arrangement (e.g., in 2012).

Table 5.6. De facto Exchange Rate Arrangement in Indonesia

Period	Regime
2001 – 2007	Managed floating with no preannounced path for exchange rate
April 2008* – 2009	Floating
Jan 2010 – Feb 2011	Stabilized Arrangement
Feb 2011	Floating
June 2012	Crawl-like Arrangement
Aug 2013	Floating
Jan 2017	Stabilized Arrangement
Jan 2018 - 2022	Floating

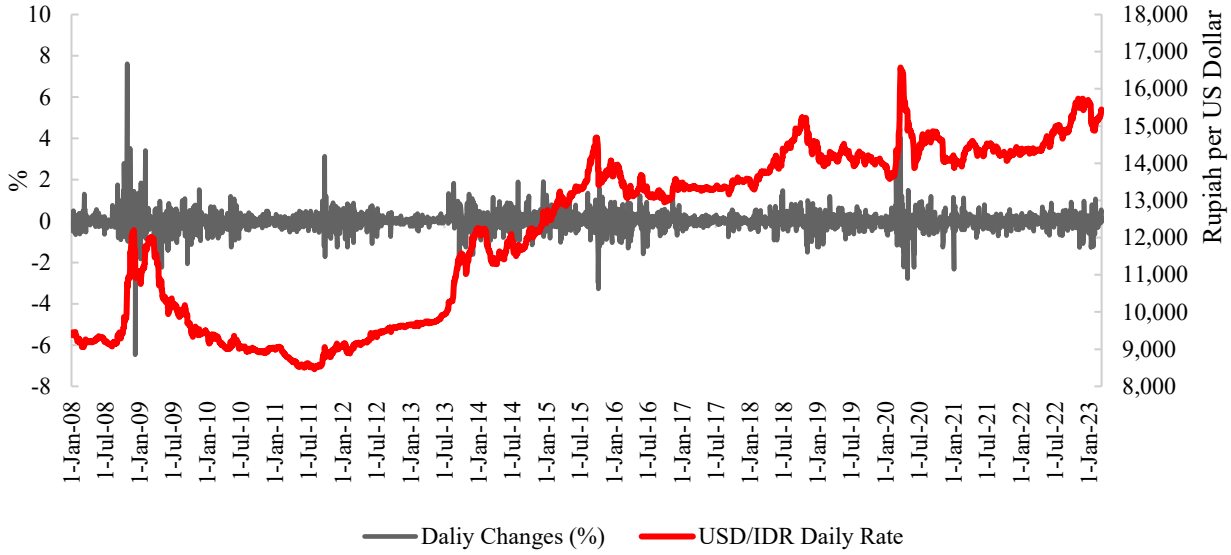
Source: IMF, Annual Report on Exchange Arrangements and Exchange Restrictions, 2001 – 2022.

Note: (*) The classification has been changed due to the revision of the classification methodology (IMF, 2009).

However, BI mostly follows a de facto floating exchange rate regime, which is more consistent with the statutory regime, especially since 2018. Accordingly, the exchange rate movement has been flexible (as shown in Figure 5.15) and mainly determined by market forces, but sometimes

BI intervened to smooth excessive exchange rate volatility, thereby supporting the price and macroeconomic stability. For instance, in the early stages of the COVID-19 outbreak, the Rupiah had significantly depreciated by about 16.24% against the USD in March 2020 relative to December 2019 due to panic sentiment in the market. At that time, BI conducted FX interventions to minimize market disturbances, preserving monetary and financial stability (BI, 2020). In the following period, amid the positive economic recovery, the Rupiah was strong again and then fluctuated relatively stable following market conditions.

Figure 5.15. Exchange Rate Movement in Indonesia



Source: BI, Author's illustration.

(ii) Exchange Rate Policy: Tools and Strategy

Over the policy horizon, the exchange rate policy of BI aims to support price and financial stability. Also, BI's interventions help minimize the impact of extreme domestic currency depreciation on the economy, thereby enhancing IT performance (Juhro and Goeltom, 2015; Warjiyo, 2022).

To implement the exchange rate policy, a conventional FX intervention tool had been employed, as in many other central banks, which involved purchasing or selling foreign currencies (mostly USD) via spot transactions and sometimes via FX swaps and forwards. Then, this strategy evolved into a dual intervention approach from 2011 – 2017 and then a triple intervention since 2018. In particular, the dual intervention included interventions in the secondary government bond market and the spot FX market. In fact, BI's dual intervention brought positive aspects in both ensuring sufficient domestic liquidity and supporting the

stability of the financial and monetary system (Warjiyo, 2016). In addition, sterilization through buying government bonds of BI in the secondary market could address the underlying causes of exchange rate pressures (e.g., capital reversal) and support financial stability. This helped to avoid the drawback of FX interventions (e.g., in 2008), which were intended to protect the Rupiah from strong depreciation due to the severe impact of the GFC but caused a domestic liquidity shortage in the country, building up pressures on banks (especially small banks) (Warjiyo, 2013).

Furthermore, by introducing the Domestic Non-Deliverable Forward (DNDF) tool in 2018, the dual intervention has been upgraded to the triple intervention tactic, which involves simultaneous interventions in three markets: the spot FX market, the secondary market for government bonds, and the domestic FX futures market (BI, 2018). Especially, empirical research showed the effectiveness of BI's comprehensive intervention strategy in stabilizing the excessive exchange rate, thereby supporting the IT framework for addressing the increasing challenges of maintaining money and financial stability (Juhro and Azwar, 2021). Not only that, but BI has also provided "FX term deposits" to banks with temporary excess FX liquidity via weekly auctions since 2012. Moreover, to ensure that any operations affecting domestic liquidity are handled and compatible with interest rate policy, BI implements sterilized intervention, in which FX interventions are combined with domestic monetary operations (Juhro and Goeltom, 2015; Juhro and Azwar, 2021).

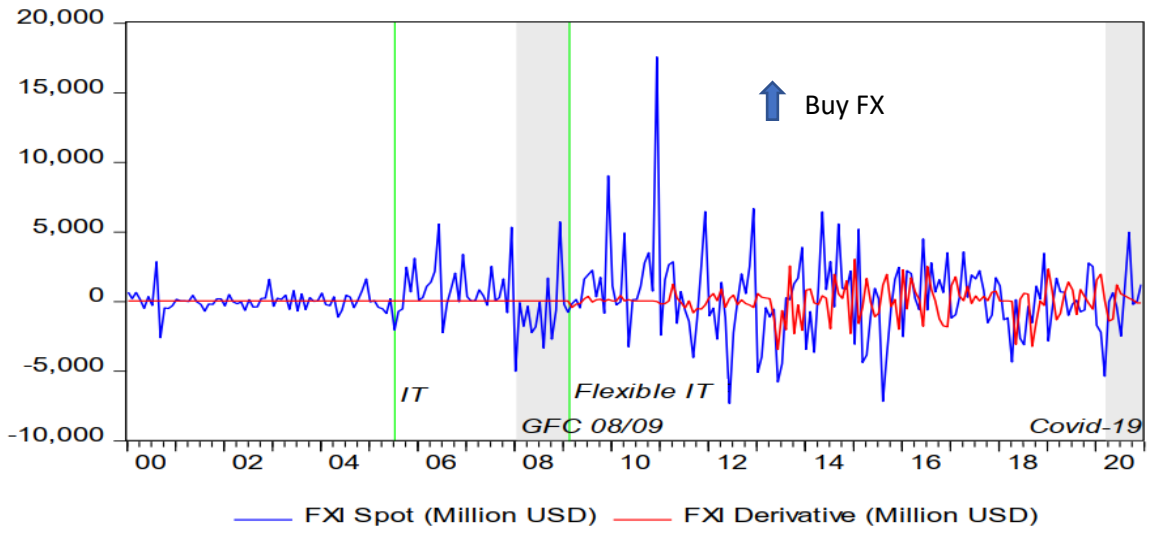
(iii) FX Intervention and its integration within the IT framework

Figure 5.16 shows (estimated) BI's interventions in the FX spot and derivatives markets to prevent excessive exchange rate fluctuations and disorderly market conditions. Accordingly, major FX interventions took place in the post-GFC period. Also, the graph indicates the combination of spot and derivative interventions since 2011.

In particular, from the post-GFC to 2011 period, the rupiah appreciated continuously (Figure 5.15) due to a surplus of current accounts as well as large capital inflows (Warjiyo, 2016). Specifically, the domestic currency appreciated by about 16.49% in 2009 and 4.55% in 2010. In fact, although the appreciation may be useful in reducing imported inflation amid high global commodity prices at the time, the issue was how to manage enormous capital inflows to minimize risks to the financial system (Warjiyo, 2016). Against this backdrop, BI cut interest rates from 6.5% in 2010 to 6% in 2011 (BI, 2011). At the same time, BI heavily intervened in the FX market to curb capital inflows while also attempting to limit exchange rate appreciation,

with some (estimated) FX purchases of up to USD 18 billion in 2011 (Juhro and Azwar, 2021). Consequently, FX reserves more than doubled from USD 49.33 billion in 2008 to USD 103.61 billion in 2011. In fact, FX reserves after that became a significant buffer against a strong capital flow reversal during the Taper Tantrum. Meanwhile, the reserve requirement ratio was increased from 5% to 8% in November 2011, aiming further to sterilize FX intervention's influence on domestic liquidity (BI, 2011).

Figure 5.16. Estimated FX Interventions in Indonesia



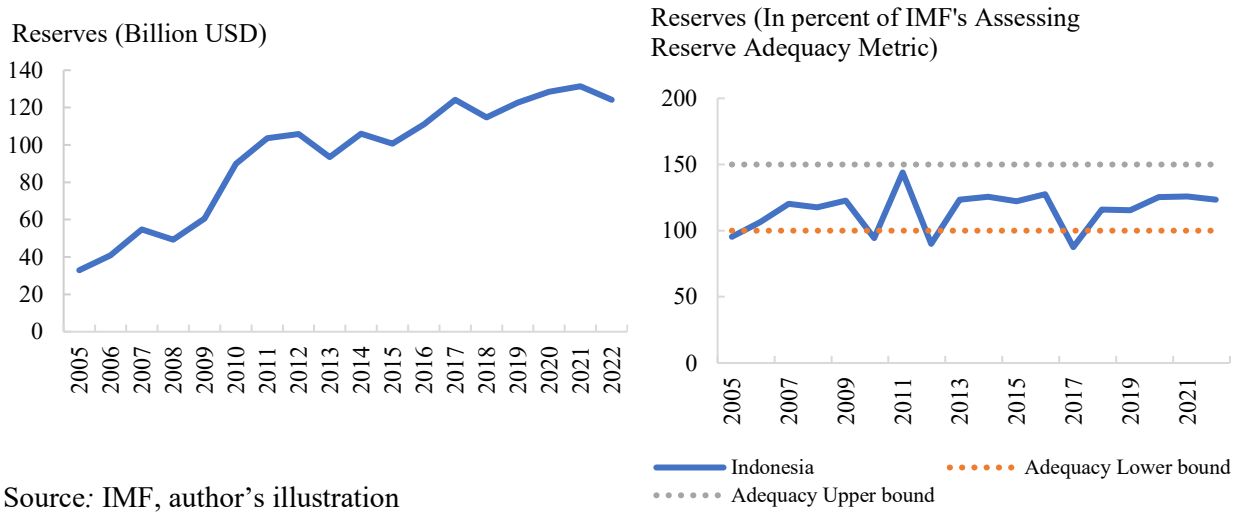
Source: Juhro and Azwar, 2021

Note. Data used in the figure are based on IMF staff estimates.

After that, the circumstance shifted from the end of 2011, owing to the downgrading of the US ratings and the European public debt crisis, in addition to the Taper Tantrum event in mid-2013, massive amounts of capital outflow from Indonesia (Warjiyo, 2016). As a result, the exchange rate between USD and IDR jumped, jeopardizing the overall economic and financial stability as well as growth momentum. Particularly, the Rupiah depreciated rapidly by 6.23% and 20.67% against the USD in 2012 and 2013, respectively. Simultaneously, inflation sharply increased from 4.13% in January 2013 to 8.4% in September 2013. Faced with that situation, the key policy of BI was based on the foundation of the IT framework through increasing policy interest rates (BI, 2013). However, the interest rate response alone was insufficient to deal with strong fluctuations in the monetary, exchange rate, and financial markets; hence, sterilized FX interventions were also implemented by selling and buying foreign currencies (BI, 2013). Given relative net selling, FX reserves declined from USD 105 billion in 2012 to USD 93 billion in 2013. Besides, most pressures stemmed from external shocks, such as global investors' shift away from government bonds. Therefore, the conventional FX intervention was enhanced

by buying government bonds of BI from the secondary market (Warjiyo, 2013). Additionally, capital flow management and macroprudential measures were employed to complement the overall policy mix. Regarding capital flow management, BI loosened the minimum holding period for SBI to one month (instead of six months) and enlarged the transaction scope excluded from the computation of offshore borrowing in the banking sector (BI, 2013). Furthermore, despite loosening capital flow management, BI tightened macroprudential measures (especially loans in the real estate sector), given the very high bank credit growth. As a result, BI's policy mix helped stabilize the economy, leading to a relatively stable rupiah in 2015 and a slight appreciation of 2.67% against the USD in 2016. Besides, inflation declined to 3.35% in December 2015 (BI, 2015). Also, FX reserves built up from USD 100.63 billion in 2015 to USD 124.14 billion in 2017. Subsequently, policy measures were gradually relaxed.

Figure 5.17. FX Reserves of Indonesia



Source: IMF, author's illustration

Note. The IMF's Assessing Reserve Adequacy (ARA) metric serves as a gauge to determine a country's potential FX liquidity requirements during unfavorable situations, thereby indicating the country's level of susceptibility (IMF, 2016a).

During COVID-19, BI's FX interventions were relatively two-sided (as shown in Figure 5.16) to prevent extreme exchange rate volatility amid global uncertainty. Besides, net capital inflows achieved stability throughout 2021 after experiencing significant fluctuations at the beginning of the pandemic in 2020, thereby contributing to the rupiah exchange rate stability in 2021 (IMF, 2022b). Generally, BI just intervened during periods of heightened market volatility (via both spot and forward FX, accompanied by acquisitions of rupiah government bonds, aimed at sterilizing the effects) but let the exchange rate movement align with the external position, consistent with medium-term fundamentals (IMF, 2022b). Thus, the FX reserve was stable and

around 125% of the IMF's ARA metric. Meanwhile, monetary policy was loosened to support the economy in the context of benign inflationary pressure.

Notably, throughout IT application, Indonesia's FX reserves were often within the adequacy level recommended by the IMF (from 100% to 150% of ARA metric), ensuring a sufficient cushion in adverse situations, as depicted in Figure 5.17.

Furthermore, to support the FX intervention's effectiveness, BI paid attention to understanding investors' behavior, which is critical for implementing FX intervention because of the significant impact of international investor behavior on the nature and magnitude of capital flows and exchange rate fluctuations (Warjiyo, 2013; Warjiyo, 2022). Firstly, it is necessary to consider the types of investors, whether they are long-term investors or hedge funds. Secondly, the nature of the elements influencing their behavior changes must also be investigated. With the above issues, thanks to functions of settlement, custody, and sub-registry of the government bond transactions in the secondary market, BI can thoroughly assess investment behavior. Besides, BI also regularly communicated with international investors through many channels (e.g., seminars, meetings, websites, etc.) via the Investor Relation Unit (IRU) to support FX interventions (BI, 2021). Furthermore, other efforts to moderate short-term and volatile capital flow, macroprudential regulations, and continued attempts to develop domestic financial markets bolstered exchange rate policy efficacy to support price and financial stability objectives (Warjiyo, 2022).

5.2.4.2. Capital Flow and Capital Flow Management (CFM)

Capital inflows are an essential resource, stimulating economic growth in emerging and developing countries (Koepke, 2019; Juhro et al., 2022). However, massive capital flow volatility, particularly speculative and short-term capital flows, threatens the stability of the financial and monetary system in small open economies like Indonesia (Juhro et al., 2022). In particular, enormous capital inflows can cause asset bubbles and over-indebtedness at times, whereas massive capital reversals jeopardize illiquidity markets and induce the risk of asset price overcorrection at other times. For example, after the GFC, advanced countries implemented expansionary monetary and fiscal policies, causing capital flows massively to emerging countries but then quickly reversed after the Taper Tantrum period. This led to severe impacts on monetary stability, exchange rates, and financial systems in emerging countries. In addition to dual/triple interventions in the FX market and the Rupiah market carried out in

Indonesia to lower the effect of capital flow volatility on the economy, capital flow management (CFM) is applied to effectively complement the exchange rate policy (Warjiyo, 2022).

(i) The role and Implementation of CFM in Indonesia

The management of capital flows not only supports exchange rate stability but also reduces the risk of capital reversals and instability in the financial system (Warjiyo, 2013). Mainly, Indonesia's CFM policy is built on three basic principles. Firstly, the policy aims to minimize the negative effects of fluctuations in capital flows on the exchange rate and the financial and monetary system. Second, CFM regulations are intended to counteract speculative and short-term flows but encourage medium-term and long-term flows. Finally, the measures taken must follow the principle of preserving the free FX strategy. Furthermore, they are just temporary and can be loosed or tightened in specific cases. The measures also make no distinction between international and domestic entities, residents and non-residents[50] (Warjiyo, 2016; Juhro et al., 2022). All these principles help ensure the appropriateness and transparency of capital management policies in Indonesia, without harming the efficiency of capital attraction in general.

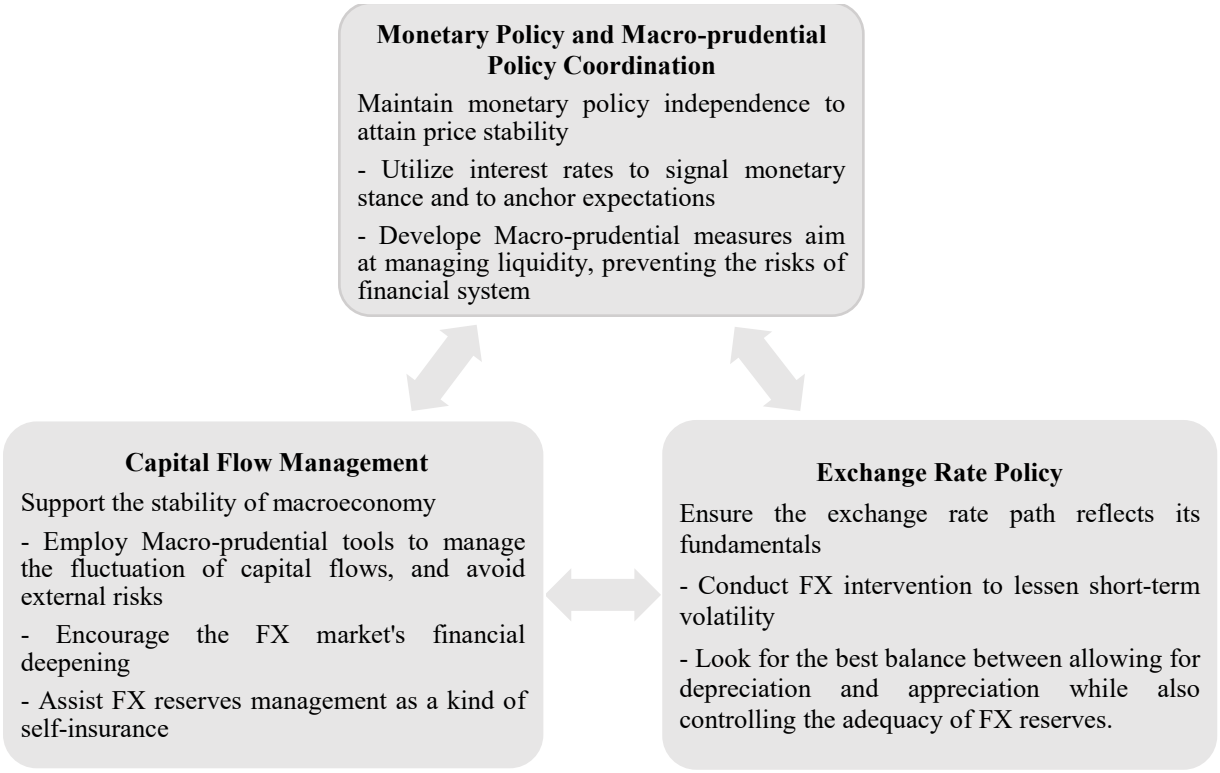
One of the measures applied by BI is regulations requiring all investors to keep SBIs (Bank Indonesia Certificates) for at least several months (e.g., it was six months, then reduced to one month in 2014). This regulation has aided in diversifying foreign portfolio capital flows as well as extending SBI's durations (Juhro and Goeltom, 2015). In addition, some other measures were also applied, such as limits on short-term bank offshore borrowing of 30% capital and requirements on FX reserves. In addition, at the end of 2014, BI issued a new regulation to strengthen risk management for external debts of non-bank institutions (Warjiyo, 2016).

(ii) Overall Strategy to Monetary Policy Trilemma

A strategy mix in Indonesia can help manage the monetary policy trilemma. Indeed, the combination of policy tools in turning "the impossible trinity" into "the possible one" is illustrated in detail in Figure 5.18. Accordingly, interest rate policy still targets price stability, CFM measures should aim to support macroeconomic stability against external risks, while exchange rate policy ensures the exchange rate path along its fundaments and is consistent with IT. Simultaneously, close coordination between monetary policy and macroprudential measures has become more necessary than ever to attain price and financial stability.

[50] This differs from the Bank of Thailand policy, as BI does not impose a specific limit for non-resident accounts.

Figure 5.18. Trilemma Management in Indonesia



Source: Juhro and Goeltom (2015)

Furthermore, Table 5.7 presents significant evidence that Indonesia's monetary policy approach is moving away from the monetary policy trilemma's hypotheses and shows the transition from a "corner solution" toward a "middle one". Particularly, in terms of the trinity indices created by Aizenman et al. (2008), the indicator for monetary policy autonomy was significantly enhanced after IT adoption from 0.30 to 0.58, comes with a moderately increasing exchange rate stability index and an integration into the global financial market through various periods. At the same time, it demonstrates that BI's strategy aligns with its IT framework.

Table 5.7. Trinity Indices in Indonesia

Index	**1997 - 2000** AFC	**2001-2005** Transition to IT	**2006-2008** IT Framework	**2009-2012** GFC - Post GFC	**2013 – 2020** Post-Taper Tantrum
Monetary Independence	0.35	0.30	0.50	0.55	0.58
Exchange Rate Stability	0.11	0.27	0.25	0.34	0.33
Financial Openness	0.75	0.70	0.70	0.53	0.55

Source: Juhro and Goeltom (2015), updated by the author

5.2.4.3. Financial Stability Objective and Macroprudential Policy

The lessons from the GFC show an inseparability between the objectives of financial system stability and monetary stability in central bank operations. Hence, since 2010, financial stability concerns have been integrated into the IT framework in Indonesia in practice. Also, ensuring financial system stability for economic sustainability is linked to the BI's role as LoLR- Lender of Last Resort, or the authority that provides liquidity during a crisis (Warjiyo, 2016). Since 2023, the financial stability objective has been recognized as an official mandate of BI alongside the price stability in the amended Bank Indonesia Act.

(i) Institutional Arrangement for Financial System Stability

Achieving monetary and financial system stability requires synergy and coordination between monetary, micro-prudential, and macro-prudential policies (Juhro and Goeltom, 2015).

In fact, a macroprudential function was developed by BI starting in 2002. However, by 2005, along with the formal pursuit of an IT framework to attain price stability, a macroprudential policy in Indonesia was just officially implemented to enhance micro-prudential supervision and regulation for the sake of stability in the financial sectors (Warjiyo, 2017). Additionally, BI has regularly issued the Financial Stability Review since 2005, which addresses the financial system assessment, the performance of BI's policy response, and the prospects for the financial system's stability to enhance policy effectiveness via communication. After the GFC, BI has enlarged its tasks by adding financial system stability, together with monetary stability. In this sense, policy operational flexibility can be attained under the IT framework using extra macroprudential measures and monetary tools to complement each other. When it comes to avoiding potential conflicts, it is critical to prioritize targets by ensuring price stability as the overarching goal (Juhro and Goeltom, 2015). Since 2013, when the newly constituted Financial Service Authority (Otoritas Jasa Keuangan, OJK) was given authority for micro-prudential policy, BI has continued to conduct its macroprudential policy in accordance with the OJK Law No 21 of 2011 (Warjiyo, 2017). Besides, BI Regulation (PBI) No. 11/16/PBI/2014 prescribes the implementation of BI's macroprudential policy.

Moreover, the overall financial stability task is managed by the Financial System Stability Committee, established in 2013 and then formalized in 2016 through Act No.9 of 2016 (Warjiyo, 2017). Notably, the Minister of Finance chairs this committee, comprised of the Governor of BI, the Chairman of Deposit Insurance Institution (Lembaga Penjamin Simpanan, LPS), and the Chairman of OJK. Besides, the legislation defines the functions and duties of the

above four organizations in safeguarding financial stability. This establishes necessary institutional arrangements for the goal of financial stability. First, the Ministry of Finance is responsible for conducting the fiscal policy to reduce severe fiscal deficits and public debt and to maintain the government bond market stability. Second, the BI implements macroprudential policy and monetary policy to mitigate external/currency risks and reduce macro-financial imbalance, as well as systemic risks. Third, OJK is responsible for micro-prudential supervision to aim at minimizing the failures of individual banking as well as the financial market. Finally, LPS serves as the financial system's resolution institution (Warjiyo, 2017). To promote policy coordination, crisis management standards have been established at both the national and institutional levels.

During the COVID-19 pandemic, the Financial System Stability Committee members demonstrated significant synergy and coordination against the shocks, thereby maintaining financial stability and supporting the economy (Harun and Gunadi, 2022). In particular, BI loosened macroprudential measures to promote economic recovery. Also, BI addressed specific banking issues by providing Special Liquidity Loans for systemic banks, Short-term Liquidity Loans for both non-systemic and systemic banks and buying Government Bonds via the primary market until the end of 2022. Regarding OJK, this organization temporarily relaxed measures about reporting, the governance of restructured credit, and credit treatment, and postponed Basel III application until March 2022 to ease financial and liquidity pressures in the banking sector (BI, 2022a). At the same time, OJK enhanced its powers on bank consolidations. Besides, although macro- and micro-prudential measures were accommodative, BI and OJK increased the monitoring of risk indicators to adjust policies when necessary. As for LPS, it engaged in various activities, including the purchase/repo of Government Securities, providing access to corporate funding via bank repos with Government Securities, and enhancing its authority concerning the resolution of bank solvency issues. Besides, LPS implemented measures to relax penalties for late premium payments to alleviate liquidity pressures (BI, 2022a). Meanwhile, the Ministry of Finance focused on strengthening its power to extend loans to LPS temporarily. All these policies kept the financial system resilient during the pandemic.

(ii) Macroprudential Policy in Indonesia

As mentioned above, the macroprudential policy of BI is an integral part of the national crisis management protocol in Indonesia.

Objectives

The goal of BI's macroprudential policy is to reduce risks arising from the macro-financial linkages' procyclicality, as well as to contain the accumulation of systemic risks. Also, the macroprudential policy aims to improve the financial system's resilience and reduce contagion from the financial system's interconnections and networks (Warjiyo, 2017). In addition to the critical mandate of macroprudential policy, which is to monitor and manage systemic risks, as in most countries, BI has the additional task of boosting financial system development (Harun and Gunadi, 2022). BI has constantly developed early warning indicators and conducted monitoring exercises to achieve that. These tests assist the authorities in determining the most appropriate actions to address identified potential financial issues.

Instruments

Table 5.8 shows the macroprudential tools that BI has applied so far. In particular, LTV ratios on loans to the real estate industry and down-payment control on auto loans were first implemented in 2012 to limit the procyclicality in credit expansion (Lee et al., 2017). Also, these tools bolstered the impact of policy rate hikes in promoting macroeconomic stability (Harun and Gunadi, 2022).

Table 5.8. Macroprudential Tools in Indonesia

Instruments	Implementation
Loan To Value (LTV) and Financing to Value (FTV)	Since 2012
Limit on Down Payment (DP) for Car Loan	Since 2012
Loan to Funding Ratio (LFR) linked to Reserve Requirements	Since 2012
Countercyclical Capital Buffer (CCyB)	Since Jan 2016
Macroprudential Liquidity Buffer (MPLB)	Since April 2018
Short-Term Liquidity Assistance (PLJP)	Since December 2018
Macroprudential Intermediation Ratio (MIR)	Since March 2019

Source: BI website

As for addressing liquidity procyclicality, BI has adopted a loan-to-funding-linked reserve requirement (LFR) since 2012. Accordingly, banks are subject to stricter reserve requirements if their LFR is under 78% or above 92%. Besides, in 2015, BI additionally imposed regulations on a countercyclical capital buffer (CCyB) for Domestic Systemic Important Banks, which is currently at 0% but can be adjusted to 2.50% if needed (Harun and Gunadi, 2022). Although Indonesia's macroprudential instruments were relatively diverse and adequate, some research recommended that BI still needs closer supervision of banks having large-restructured loans or being heavily exposed to the real estate industry and export-related fields (Lee et al., 2017).

Since 2018, several other tools have been added to enhance the diversity and effectiveness of macroprudential policy in Indonesia, such as MPLB, PLJP, and MIR.

Furthermore, the tightening or loosening of macroprudential measures has been determined based on an assessment of procyclicality and systemic risks via early warning indicators. In 2012 and 2013, for example, BI tightened the LTV ratio on house loans and enhanced down payments on car loans amid high credit risks, but these measures were loosened in 2015 and 2016. Besides, BI implemented several policies categorized as CFM tools to support macroprudential policies in preserving financial stability (Warjiyo, 2017). In 2021, BI introduced the integrated macroprudential stress test framework, which enhances the existing framework by integrating stress tests for solvency and liquidity combined with systemic risk indicators, thereby better serving policy-making decisions (IMF, 2022b).

(iii) Integrate the financial stability issues/ macroprudential policy in the IT framework of Indonesia

The important issue for BI is a method of incorporating financial stability concerns into its IT framework. Firstly, the central bank can broaden the price stability concept to include asset price evaluations. Secondly, the central bank must address the problems of procyclicality and the accumulation of systemic vulnerabilities in the macro-financial interconnection (Warjiyo, 2017).

Concerning the first matter, BI looks at the government bond yield, the exchange rate, housing prices, and equity prices, in addition to CPI. Particularly, the exchange rate is included in the forecasting and analysis model on the macro economy to determine monetary policy responses, which is compatible with the IT regime because inflation remains the end goal (Warjiyo, 2016; Warjiyo, 2017). Other asset prices are studied separately, but they give BI more insight into emerging risks and the overall economic projections, allowing BI to make optimal monetary policy and macroprudential policy decisions. Concerning the second matter, BI expands the macroeconomic forecasting model to cover the danger of external default, aiming at improving the knowledge of macro-financial linkages (Warjiyo, 2017). Finally, based on comprehensive assessments and forecasts of the macroeconomy and financial system risks, BI implements a mix of policies to attain the goals of price stability along with financial stability. Key tools comprise monetary policy as in the IT regime, flexible exchange rate policy with necessary intervention, capital flow management policy, and finally, macroprudential policy measures. Furthermore, coordination between the related agencies and the strength of communication are

other important factors for a successful policy mix. In fact, the policy mix being applied in Indonesia is consistent with the so-called Integrated IT framework– proposed by Agénor and da Silva (2019).

Table 5.9. Four scenarios of Price Stability and Financial Stability

		Price Stability Risks Expected	
		Low	High
Financial Stability Risks Expected	Low	Quadrant I	Quadrant III
		NEUTRAL/EASING Monetary	TIGHT Monetary
		NEUTRAL/EASING Macroprudential	NEUTRAL/LEANING Macroprudential
	High	Quadrant II	Quadrant IV
		NEUTRAL/ LEANING Monetary	TIGHT Monetary
		TIGHT Macroprudential	TIGHT Macroprudential

Source: Warjiyo, 2017

Besides, another question arises regarding the optimal integration of macroprudential policy and monetary policy within IT in case of conflict between financial stability and price stability (e.g., scenarios of the second and third quadrants in Table 5.9). Although there is some debate about this issue, the critical lesson is that, in most cases, monetary policy and macroprudential policy complement each other (Agénor and da Silva, 2019). Indeed, regarding quadrant II, the macroprudential policy stance should be tight when the expected risks of price stability are negligible while the risks of financial stability are considerable. In this instance, monetary policy may assist macroprudential policy in mitigating the potential dangers of financial system stability. Meanwhile, in quadrant III, the perspective of monetary policy must be tight because the projected financial stability risks are low, but the price stability risks are significant. Regarding this situation, the macroprudential policy measures might aid monetary policy in guarding against price stability risks during the policy horizon. While the theoretical analysis above may be much simpler than reality, it provides a helpful guide in resolving possible conflicts between the financial and price stability objectives under the IT framework (Warjiyo, 2017).

Accordingly, Table 5.10 summarizes BI's experience in integrating macroprudential policy with policies discussed in previous sections (i.e., monetary policy, exchange rate, and capital flow management) to deal with turbulent episodes, thereby providing compelling evidence for such coordination in practice. During the COVID-19 period, for instance, inflation risks were low, and the financial system was solid thanks to the buffer accumulated pre-pandemic while

economic growth severely suffered from the pandemic. This context falls into quadrant I, so monetary policy and macroprudential were loosened to support the economy through the pandemic. Particularly, BI continuously cut policy rates up to five times in 2020, for a total of 125 basis points to only 3.75%. After that, BI lowered policy rates again in February 2021 to 3.50% to support the economy (BI, 2021). In addition, the minimum reserve requirement for banks is also reduced by 300 basis points, along with the purchase of government bonds through both the primary and secondary markets to inject liquidity (BI, 2021). Simultaneously, the macroprudential policy was also accommodative to enhance monetary policy effectiveness in promoting credit growth. Accordingly, BI further cut 50 basis points of the reserve requirement ratio for bank loans on SMEs, export-oriented industries, and priority areas from April 2020 to June 2021. Moreover, BI reduced the minimum Down Payment requirement for loans on ecologically friendly cars from 5–10% to 0% in October 2020. Besides, the CCyB level has been kept at 0% while the regulations on the LTV ratio for loans have been relaxed to 100% since May 2021 (BI, 2021). Furthermore, a comprehensive evaluation of Prime Lending Rate transparency in the banking system has been undertaken and published since 2021 to boost the efficiency of macroprudential and monetary policy transmission.

However, the situation has changed since the post-COVID period, given inflationary pressure increased. Fortunately, the financial system has remained sound while the economy has been recovering. Thus, this context falls into quadrant III, where there is a certain contradiction between the objective of price stability and financial stability. Against this backdrop, while the macroprudential policy has been neutral by keeping the LTV ratio and CCyB ratio unchanged, monetary policy began to tighten in response to inflation, with a series of interest rate hikes up to 5.75% in February 2023. Meanwhile, flexible exchange rate policy and triple FX interventions, when necessary, combined with regulations to prevent short-term speculative capital flows, have helped stabilize the financial and monetary market. Simultaneously, BI has maintained ongoing surveillance of the integrated macroprudential stress test system, upgraded at the end of 2021, to enable swift adjustments to macroprudential measures when needed (BI, 2022a). As a result, inflation has gradually decreased while the financial system has remained stable.

Hence, overall, the coordination between Bank Indonesia's macroprudential policy and monetary policy, in addition to others like exchange rate and capital flow management, has proven to be effective and aligned with the objectives of the IT framework.

Table 5.10. Policy Mix Implementation of Bank Indonesia

Period	2010 – Taper Tantrum (May 2013)	After Taper Tantrum – mid-2015	After mid-2015 to 2019	COVID-19 (2020-2021)	After COVID
Context	Quadrant II ✓ High Economic growth ✓ Low Inflation (3.8% in 2011; 4.3 % in 2012) ✓ Large capital inflows ✓ High bank lending growth (23%/year 2010-2012)	Quadrant IV ✓ Large capital reversals ✓ Fuel Price Pressure ✓ High inflation (8.4% in 2013) ✓ High bank lending growth (21.4% in 2013)	Quadrant I ✓ Low risks ✓ Slower economic growth (to 4.9% in 2015 from 5.2 % in 2014) ✓ Tight bank lending growth (10%)	Quadrant I ✓ Low inflation (2.03% in 2020) ✓ Weak growth (declined from 5.02% in 2019 to -2.07% in 2020) ✓ Low credit growth ✓ Severe Damage by the COVID pandemic	Quadrant III ✓ Global supply shocks ✓ High Inflation (increased to 5.95% in September 2022) ✓ Moderate risk on financial stability ✓ Economy in the recovery process
Interest Rate and other Monetary Tools	Consistent with the IT ✓ Cut policy rate (from 6.5% in 2010 to 5.75% in 2012) ✓ Further cuts: would not be effective	Contain inflation pressure ✓ Respond to the capital reversals ✓ Raise interest rate (a total of 175 bps from 5.75 % in June 2013 to 7.5% in November 2013)	Accommodative policy to support the economy ✓ Lower policy rate to 6.75% (3 times during the first three months of 2016) ✓ Reduce Reserve Requirements to 6.5% in 2016 ✓ Successfully reform the policy rate to the 7-Day (Reverse) Repo Rate since 2016	Accommodative policy ✓ Lower policy rate 5 times by 125 basis points to 3.75% in 2020, further cut to 3.5% in 2021. ✓ Reduced statutory reserve requirement by 300 basis points ✓ Inject liquidity via OMOs ✓ Buy government bonds in the primary market to finance the Government Budget	Tight policy ✓ Increased policy rate by a total of 225 basis points from August 2022 to February 2023 ✓ Stop government bond purchases in the primary market since end-2022 ✓ Increased Rupiah Reserves Requirement since March 2022

Period	2010 – Taper Tantrum (May 2013)	After Taper Tantrum – mid-2015	After mid-2015 to 2019	COVID-19 (2020-2021)	After COVID
Exchange Rate	Restrict the surge in capital inflows, reduce EX appreciation ✓ FX intervention ✓ Reserve Requirement increased (5% to 8% in 2011) => support to sterilize FX intervention on domestic liquidity	✓ Heavy FX intervention => decrease FX reserves ✓ Purchases of the government bonds in the secondary market	✓ Flexible ✓ Conduct Triple Intervention since November 2018	✓ Flexible ✓ Conduct Triple FX intervention (if necessary) to smooth excessive volatility	✓ Flexible ✓ Conduct Triple FX intervention (if necessary) to smooth excessive volatility
CFM	Tight measures ✓ Impose six months of holding SBI ✓ Implement a 30 % capital requirement for banks' short-term off-shore borrowings.	Relax measures ✓ Reduce the holding period of SBI to one month ✓ Expand several transactions ✓ Develop financial market to facilitate capital flows ✓ Enact a new regulation to improve risk management of non-bank corporate foreign obligations (late 2014)	Strengthen measures for non-bank corporate with external debt (also referred as macroprudential measures) ✓ Hedging foreign currency against Rupiah (at least 25% of net FX liabilities maturing within 6 months applied since 2016, instead of 20% in 2015) ✓ A minimum liquidity ratio (70% since 2016; 50% in 2015) whereby sufficient FX assets are available to cover FX liabilities that mature within three months	Unchanged	Unchanged

Period	2010 – Taper Tantrum (May 2013)	After Taper Tantrum – mid-2015	After mid-2015 to 2019	COVID-19 (2020-2021)	After COVID
Macro-prudential Policy	Prevent build-up of systemic risks ✓ Introduce LTV ratio in 2012 (about 70% for loans on automobiles and property) ✓ Apply limit on DP, LFR tools ✓ Combine with bank supervisory actions	Tight measures ✓ Tighten LTV ratio in 2013 concerning loans on property sectors. ✓ Tighten the limit on DP measures in 2013 ✓ Raise the floor of LFR from 78% to 80%	Loosened measures ✓ Increase the LTV (by 10% in 6/2015, again in 2016) ✓ Introduce CCyB measure (effective since 2016)	Accommodative ✓ Keep CCyB at 0% ✓ Relax Macroprudential Intermediation Ratio ✓ Support Bank Liquidity via Macroprudential Liquidity Support ✓ Relax Down-Payment Restrictions for environmentally friendly motor vehicle loans ✓ Relax LTV to 100% for property and car loans (May 2021 – end 2022)	Neutral ✓ Keep LTV ratio at 100% for property and car loans ✓ Keep CCyB at 0%
Results	✓ International reserves grew significantly, thereby providing buffers to cope with the following Fed Tantrum episode. ✓ Lending growth has been controlled and declined considerably	✓ Macroeconomic and financial stability have not been jeopardized. ✓ Monetary policy responses gain credibility ✓ Inflation decreases (from 8.3% in 2014 to 3.3% in 2015) ✓ Capital inflows restarted	✓ Combined with fiscal policy support and structural reform ✓ Economic growth increased (5.07 in 2017, and 5.17% in 2018) ✓ Inflation fell into the target range during 2016-2019 ✓ Financial and Monetary Stability remained sound.	✓ Combined with fiscal policy support and structural reform ✓ Financial and monetary system coped well with the pandemic, remained solid ✓ Inflation remained low ✓ Economic growth recovered and increased to 3.7% in 2021	✓ Gradually withdraw extraordinary fiscal measures related to the pandemic ✓ Financial system remained sound ✓ Inflation declined to 4.33% as of April 2023 ✓ High growth rate at 5.31% in 2022

Source: Bank Indonesia, and Author's compilation

Note. CCyB = Countercyclical Capital Buffer, DP = Down Payment for Car Loan, LFR = Loan to Funding Ratio, LTV = Loan to Value.

5.2.4.4. The Government's Coordination

While section 4.1.2 mentioned the efforts of Indonesian authorities to improve fiscal position during the 2000s to meet the prerequisite of no fiscal dominance for IT introduction, this section addresses the difficulty in maintaining that requirement in the recent IT development. Indeed, in the context of the economy suffering from unforeseen recent shocks (e.g., COVID-19), the government had to implement enormous fiscal stimulus packages, while BI had to loosen monetary policy and conduct unconventional measures to support the economy. Do these raise a fiscal dominance concern, affecting monetary policy independence? This heavily depends on government policies to maintain fiscal sustainability.

Besides, in emerging economies, such as Indonesia, inflation outcome is affected not only by demand-side factors but also by supply-side factors (e.g., policies to support production and distribution) (Hendar, 2016). Therefore, it is crucial to emphasize the necessity of close coordination between the government of Indonesia and BI to achieve the same end objectives[51].

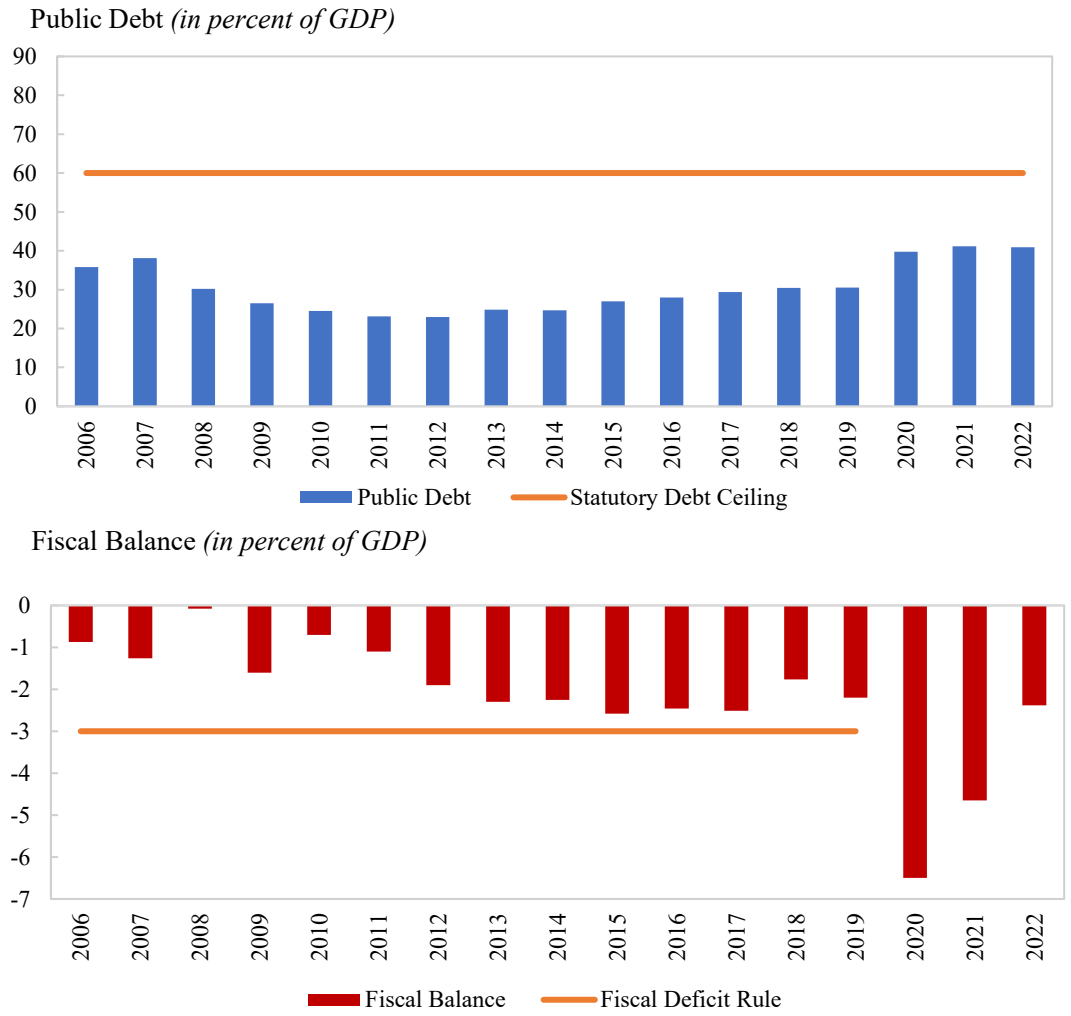
(i) Fiscal Rules and Fiscal Sustainability

In the process of BI implementing the IT framework, the Indonesian government generally adhered to fiscal governance, with public debt at only about 30-40% of GDP and a budget deficit below 3 % of GDP according to the statutory cap (except the COVID period), as shown in Figure 5.19. Indeed, although massive fiscal stimulus packages were implemented to restore the economy during the GFC period, budgetary discipline and sustainability were maintained. At the same time, in the pre-COVID period, BI only purchased government bonds in the secondary market to serve monetary operations, not directly finance the government.

However, given the unprecedented shock due to the COVID-19 pandemic that began in early 2020, the government had to relax fiscal rules temporarily. In particular, the passing of Act No. 2 of 2020 granted the government the authority to temporarily exceed the 3% fiscal deficit threshold from 2020 until 2022 to deal with the economic impacts of COVID-19. Consequently, in 2020, the fiscal deficit surpassed the initial target of 1.76% of GDP and reached 6.5% of GDP. Besides, the public debt to GDP ratio increased from 30. 56% in 2019 to 39.76 % in 2020, 41.15% in 2021. Nevertheless, Indonesia's public debt to GDP ratio stayed moderate and manageable (IMF, 2022b).

[51] In addition to the goal of price stability, BI coordinates with government agencies to stabilize the overall financial system, as mentioned in the previous section.

Figure 5.19. Public Debt and Fiscal Position in Indonesia



Source: Ministry of Finance of Indonesia and Author's illustration

Meanwhile, a potential fiscal dominance risk lies in Law No. 2 of 2020, allowing BI to buy government bonds directly in the primary market to fund the government budget amid the pandemic directly via the BI-MOF joint decree. Accordingly, BI bought about Rp144.53 trillion worth of SBN (Government Securities), consisting of three phases in 2020, 2021, and 2022 (BI, 2022b). However, the government and BI announced a clear commitment that this was only temporary financing measures during the crisis and had a clear exit plan. Indeed, BI's government bond purchases in the primary market were brief and officially ended in December 2022, thus preserving BI's operational independence and dispelling concerns about fiscal dominance. Besides, it should be emphasized that BI's government bond purchases also contributed to easing market turmoil, providing liquidity for the economy to withstand the shock caused by the pandemic (IMF, 2022b). In the future, though, such actions should be short-lived and limited to averting excessive market dysfunction in response to a crisis and must be

withdrawn as soon as the economy is recovered so as not to jeopardize monetary policy's independence.

The Indonesian government followed those above notes well and, at the same time, quickly restored fiscal discipline. Specifically, thanks to tax reforms, the enhancement of spending and investment efficiency, and economic recovery, the budget deficit returned to less than 3% of GDP (i.e., 2.38%) in 2022, a year ahead of schedule. This shows that the government paid great attention to fiscal sustainability, thereby protecting the operational independence of BI under the IT framework.

(ii) Administered Prices and Coordinated Inflation Control

The headline CPI inflation in Indonesia is divided into three main components: core inflation (which makes up about 65%), volatile food prices (which contribute to about 17%), and administered prices (which account for around 18%)[52] (Hendar, 2016; Warjiyo, 2022). Among them, BI's policy can affect core inflation and inflation expectations, while the government policy in encouraging production, strengthening supply chains, and supporting distribution can mitigate the volatile food inflation. Besides, government-announced prices (e.g., subsidized fuels, electricity billing rates, and transport fares) impact administered price changes. Sudden and significant changes in administered prices can put pressure on inflation (Hendar, 2016). Hence, regular dialogue between the government and BI on the ideal timing of administered price modifications may avoid putting too much pressure on inflation amid supply shocks. For longer-term strategies, the government should reform price management (especially for energy subsidies), allowing periodic adjustments to gradually follow the market prices.

In other words, although the inflation objective is the main task of BI, it requires government coordination as a policy mix of fiscal policy, sectoral policy, and monetary policy to achieve the goal. To this end, Indonesian authorities have taken many initiatives and institutional development for the synergy between BI and the government, aiming for an effective IT framework (as shown in Table 5.11). For instance, since the official IT adoption in 2005, an inflation control team was established and started to operate under the name Tim Pengendalian Inflasi (TPI)[53]. Then, regional inflation control groups were set up in 2008. Furthermore, the

[52] It should be noted that the proportion of administered prices in the CPI basket in Indonesia is lower and more reasonable compared to Thailand, where administered prices make up 26-30% of the CPI.

[53] The TPI includes many members from the Ministry of Finance to the Central Bank (BI) and many other Ministries (e.g., the Coordinating Ministry for Economic Affairs, the Ministry of Agriculture, the National

institutional settings in Indonesia are constantly being improved to strengthen the cooperation between the authorities, effectively supporting the IT framework.

Table 5.11. Institutional Development and Regulations for Coordinated Inflation Control and Other Objectives under IT

Objectives	Date	Regulations and Initiatives on Coordination
Inflation	2005	The inflation task force-TPI was formed
	2008	The regional inflation teams were set up
	Since 2010	The flexible IT framework was enhanced to emphasize the coordination of BI and the government.
		BI conducts the countercyclical monetary policy, while the government implements tax reforms to support budget consolidation and adjusts the expenditure plans since 2011.
	2017	Presidential Regulation No.23/2017 concerns the construction of TPIP which is a Central Inflation Task Force, and TPID which are Regional Inflation Task Forces
	2017	Regulation No. 10/2017 of Minister of Finance about Procedures and Mechanisms for TPIP, City/Regency TPID, and Provincial TPID
	2017	Regulation No. 148/2017 of Minister of Finance on the TPIP Secretariat and Working Group Duties and Membership.
		Decree No. 500.05-8135/2017 of Minister of Home Affairs on TPID
Economic Growth	Since 2005	Regularly Meetings between the government, BI, and subnational authorities to address structural concerns and boost growth.
	Since 2010	Formation of a MoU on real sector development and MSMEs between BI and many institutions/ministries.
	2014	Fiscal Policy: overhaul the fiscal system with a considerable decrease in energy and fuel subsidies. The usage of subsidy funds was moved toward infrastructure, production, education, and health.
		Monetary policy: monthly Board Meetings decide to continue the countercyclical policy to sustain growth
	Since 2019	The government organizes working groups to coordinate across government entities in conducting economic packages.
Financial Stability	2016	Law No. 9 of 2016 regarding the Prevention and Handling of Financial System Crises establishes legislation for inter-agency cooperation to safeguard financial system stability.
	Since 2016	The Financial System Stability Committee is formed.

Source: BI website

Note: MoU: Memorandum of Understanding, MSMEs: micro, small and medium enterprises.

Development Planning Agency, the Ministry of Energy and Mineral Resources, the Ministry of Trade, the Ministry of Labor and Transmigration, and the Ministry of Communications) (BI, 2010).

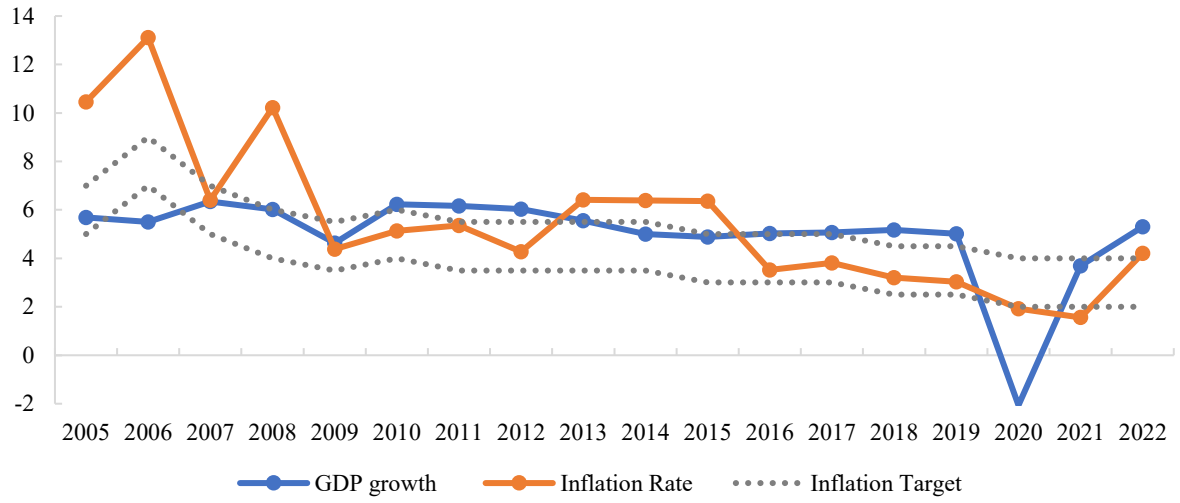
Accordingly, inflation in Indonesia is controlled overall by BI, along with central and local governments. BI implements monetary policy to control inflation from the demand side and stabilize the excessive exchange rate fluctuation, thereby shaping inflation expectations. Meanwhile, through policies to manage supply, encourage technology in production and distribution, improve infrastructure to facilitate logistic transportation, and conduct subsidies when needed, the government influences the supply side and mitigates the commodity and energy price shocks. At the same time, reforms on the government's spending structures by gradually reducing controls and subsidies on energy and fuel prices since late 2014, allowing a focus on infrastructure, production, and education (BI, 2015; Purwono et al., 2020).

Notably, the legal underpinning for coordinated inflation management was significantly reinforced by Presidential Regulation No.23 of 2017. In particular, the regulation mandated the construction of TPIP as a Central Inflation Task Force and Tim Pengendalian Inflasi Daerah (TPID) as Regional Inflation Task Forces at the local and provincial levels to control inflation. Specifically, the TPID is in charge of several tasks, namely gathering price data of essential commodities and services, enhancing the logistic system, establishing regional policies to curb inflation by adhering to national policy, and other programs to lower inflation. Besides, the TPID coordinates with the local authorities at the city level to carry out its mission (Purwono et al., 2020). The legal framework was then constantly reinforced by numerous regulations and initiatives on procedures, mechanisms, secretariat, and members for TPIP. Aside from the inflation target, BI also works with the government to accomplish additional goals such as sustainable economic growth and financial stability.

5.2.5. Performance under the IT regime

In the initial stages of IT introduction, Indonesian authorities often failed to accomplish the pre-announced inflation targets. Specifically, a couple of supply-side structural shocks drove inflation beyond the target range, most notably in 2005 and 2008. However, since the upgrade of the IT framework in 2010, Indonesia has witnessed improved inflation performance, primarily because of the effective policies implemented by BI and the collaboration between the government and BI. More significantly, there was a remarkable achievement in reaching the inflation target, coupled with an upturn in economic growth compared to the pre-2010 period, except for the COVID era (Figure 5.20).

Figure 5.20. Macroeconomic Performance in Indonesia under the IT regime



Source: Bank Indonesia, IMF, and Author's illustration

Moreover, Table 5.12 details the underlying reasons for not meeting the targets in certain years in Indonesia. For example, inflation rocketed to double digits in 2005 and 2006, partly due to the fuel price hike policy of the government amid global shocks. Then, the government conducted a supportive policy and subsidy, accompanied by the tight monetary policy implemented by BI; inflation fell quickly to 6.41% in 2007 (Kenward, 2013). However, the GFC made it difficult again for the Indonesian economy, with inflation rising along with economic growth slowing down (BI, 2008). At that time, the government used fiscal stimulus packages to restore the economy, while BI actively employed its monetary policy toolkits. Furthermore, policy coordination takes place through the involvement of BI in cabinet meetings chaired by the president. During meetings, BI provides relevant information that aids in achieving the inflation target. BI is also involved in the discussion of Macro Assumptions of State budgets in the parliament. In addition, the government and BI jointly discuss and coordinate to manage debt. On that basis, the Indonesian government and BI will make appropriate fiscal and monetary policies to achieve the macroeconomic goals. This combination has yielded valuable results. Indeed, after the GFC, while many economies grew slowly, even negatively, Indonesia was able to weather the storm, attained a GDP growth rate of 4.5%, and successfully controlled inflation within the target in 2009 (Juhro and Goeltom, 2015).

However, fuel price shocks and adverse weather caused considerable inflationary pressures from the supply side, causing BI to miss its target from 2013 to 2015. Additionally, the significant depreciation of the domestic currency due to capital flow reversal after the Taper-Tantrum was also the cause of the high inflation rates. These urged BI to strengthen

coordination in exchange rate and capital flow policies, combine macroprudential measures with monetary policy, and further enhance cooperation with the government (Juhro and Goeltom, 2015). Accordingly, in addition to a policy mix under the advanced IT framework of BI, the government strengthened measures to support agricultural production and apply high technology to enhance productivity, thereby reducing pressure on food prices during bad weather periods (BI, 2016). As a result, the inflation target was continuously achieved from 2016 to 2019. At this time, BI began to loosen monetary policy to support economic growth, aligning with the government's fiscal reforms. Consequently, the macroeconomic performance showed positive results, with economic growth gradually increasing from 4.87% in 2015 to 5.17% in 2018, while inflation was continuously within the target range.

Table 5.12. Inflation Achievement in Indonesia since IT adoption

Time	Target	Actual Inflation	Achievement	Underlying Reasons
2005	6.0±1%	10.45	Wide miss	Fuel Price Hike, Global shocks
2006	8.0±1%	13.11	Wide miss	Fuel Price Hike
2007	6.0±1%	6.41	Achieve	
2008	5.0±1%	10.23	Wide miss	Fuel Price Hike, GFC
2009	4.5±1%	4.39	Achieve	
2010	5.0±1%	5.13	Achieve	
2011	4.5±1%	5.36	Achieve	
2012	4.5±1%	4.28	Achieve	
2013	4.5±1%	6.41	Miss	Fuel price increase, anomalous weather, Exchange rate depreciation following Taper Tantrum mid-2013
2014	4.5±1%	6.39	Miss	Anomalous weather, Exchange rate depreciation
2015	4.0±1%	6.36	Miss	Anomalous weather
2016	4.0±1%	3.53	Achieve	
2017	4.0±1%	3.81	Achieve	
2018	3.5±1%	3.20	Achieve	
2019	3.5±1%	3.03	Achieve	
2020	3.0±1%	1.92	Almost achieve (Slightly below target)	Economic Restrictions and Lock-down against COVID-19
2021	3.0±1%	1.56	Miss (below target)	Aggregate demand declines during COVID-19
2022	3.0±1%	4.21	Miss (Slightly above)	Reopening the economy causes an increase in aggregate demand. Fuel price hike and supply disruption put pressure on inflation

Source: Bank Indonesia, Author's Compilation

During the COVID-19 period, the economy faced tremendous hardship and challenges. BI responded by reducing interest rates, which supported financial markets and enhanced coordination effectiveness with government policies to mitigate the pandemic's impact on the economy. During this time, weak demand resulted in inflation falling below the lower bound target for two consecutive years: 1.92% in 2020 and 1.56% in 2021. Additionally, the economy experienced negative growth in 2020, a prevalent situation in many countries (BI, 2020).

In 2022, BI's IT framework faced different challenges. Inflationary pressure continued to rise due to increased global fuel and commodity prices, while the domestic supply chain had not fully recovered. This was further compounded by a rapid surge in domestic demand following the COVID-19 period in Indonesia (IMF, 2022b). In response, BI remained resolute in its commitment to the inflation target and steadily raised the BI7DRR rate by a total of 225 basis points between August 2022 and February 2023, concurrently employing measures to smooth excessive exchange rate movements (BI, 2023). Meanwhile, the government implemented temporary fuel price subsidies from March to September 2022 and supported distribution channels for goods to alleviate inflationary pressures. As a result, although the inflation target was not achieved in 2022, with an average inflation rate of 4.21%, there have been indications of inflation easing, and it is expected to reach the target in 2023. In general, the efforts and coordination between BI and the government for the same end goals helped Indonesia attain a commendable macroeconomic performance, thereby reinforcing the credibility of the IT framework.

In summary, the IT framework in Indonesia has demonstrated its relevance and effectiveness, even during volatility periods. This success can be attributed to the continuous enhancements made by BI during IT implementation. These improvements include refining target setting and integrating complementary policies such as exchange rates, capital flow management, and macroprudential policy into the IT framework since 2010. Another notable milestone was the application of the BI7DRR as the operational framework for policy rates since 2016, which significantly bolstered the effectiveness of monetary operations. Moreover, there has been a strong emphasis on transparency, communication, and enhanced collaboration with the government under the IT framework. These proactive measures have collectively contributed to a robust IT framework, helping the Indonesian economy withstand shocks, particularly during the challenging periods of COVID-19 and post-COVID.

5.3. Philippines

5.3.1. Development of monetary policy framework and Motivation for IT

1985 –1995: Monetary Aggregate Targeting

Before adopting IT, the Bangko Sentral ng Pilipinas (BSP) conducted a monetary policy of monetary aggregates targeting strategy. In fact, the Philippines authorities had followed monetary targeting since 1984, and then, the central bank (BSP), which was formed under the new Central Bank Act of 1993, continued this strategy.

1995 – 2001: Modified Monetary Aggregate Targeting

From 1995, financial liberalization resulted in the uncertainty of the money multiplier; at the same time, structural breaks in the income velocity dampened the linkage between monetary volume targets and the inflation rate (Inoue et al., 2012). These changes rendered base money an unreliable monetary policy anchor (Debelle and Lim, 1998). Hence, the BSP decided to modify its monetary targeting strategy. Accordingly, instead of strictly adhering to monetary aggregates, the BSP focused more on price stability. In some periods, it accepted money supply more than a set target as long as inflation stayed under or at the goal level (Mariano and Villanueva, 2006). However, the monetary policy framework in the Philippines was just considered a semi-IT strategy because it was decided on the current inflation but not the forecast of inflation (Mariano and Villanueva, 2006; Inoue et al., 2012).

2002 – present: Inflation Targeting

After the above period, the adjustments to the monetary policy framework were discussed. Although the Philippines had a somewhat good inflation performance in 1997, the monetary targeting system made it hard to maintain a low inflation environment. The inflation objective was harmed by supply shocks, unstable money demand, and the desire for various purposes (Debelle and Lim, 1998). Against this background, the transition to a new monetary regime is necessary to build credibility for monetary policy and attain a sustainable reduction in the inflation rate; an IT strategy is a worthwhile option to get there (Kongsamut, 2001). Therefore, the Monetary Board (MB) - a policy-making body of the BSP- considered the amount of work to move to the IT regime.

5.3.2. Preparation and Transition toward IT

The BSP took two years from the initial introduction of the intended transition to IT in January 2000 until the official IT adoption in January 2002. During those two years, the Philippines authorities constantly improved economic and financial conditions, moved from a policy based on current inflation to a policy of forecast inflation, and established basic macroeconomics models for forecasting inflation to aim at building a well-designed framework for monetary policy of IT. Besides, the BSP organized programs to disseminate to the public the shift to IT (Kongsamut, 2001). Furthermore, as discussed in Section 4.1.3, the conditions of BSP independence and a flexible exchange rate regime suitable for IT were secured[54].

Additionally, reforms were implemented to extend and develop financial markets to foster the monetary policy transmission mechanism during the IT transition. Accordingly, a law on the financial sector reform was drafted in 2000. Also, the General Banking law passed in the 2000s supported the creation of a healthier and more stable financial system, thereby ensuring an efficient transmission function for monetary policy. Besides, the operation of a real-time gross settlement facilitated transactions in the stock, foreign exchange, and currency markets (Kongsamut, 2001). In addition to the financial system reforms of the BSP, the Philippines government continued to conduct programs to cut import tariffs on agricultural products according to the progress and move toward trade liberalization, along with reforms under the program of the National Food Authority. In effect, these government policies might contribute to lower food price volatility due to the weather-induced supply shocks via international commerce, reducing inflation pressures and thus facilitating a smooth transition to the IT framework of the BSP (Kongsamut, 2001).

Concerning the operational aspect, the government and the BSP mutually determined the inflation target at the time. Specifically, the inflation target was measured using the overall CPI (also called headline inflation), with an expression of a point target and a deviation range; escape clauses were also considered (Kongsamut, 2001; BSP, 2002). Regarding transparency and accountability, the Philippines considered several mechanisms during its preparation for IT, including quarterly inflation reports, reports to Congress, the public release of Monetary board meetings, and other means. In addition, technical preparation for inflation forecasting was conducted, from a single-equation model to more sophisticated models like a VAR-based model or a multi-sectoral macro-econometric model (Kongsamut, 2001).

[54] However, de facto fiscal dominance was a major weakness at that time.

5.3.3. Setting and Developing the IT framework

This section will delve into the development of the IT framework in the Philippines, addressing both operational and technical aspects. In general, the design of an IT framework of the BSP was well-considered from the very first years of its IT adoption (Ito and Hayashi, 2004). Subsequently, the IT framework underwent gradual adjustments and refinements over time (BSP, 2019). However, recent global uncertainties during the post-COVID period have challenged the BSP, urging it to make further improvements to deal with shocks.

5.3.3.1. Institutional Arrangement

The setting process for macroeconomic goals in the Philippines relies on the collaboration of many government departments through the Development Budget Coordination Committee (DBCC). This inter-agency committee determines annual targets for inflation and other goals such as economic growth. Particularly, in cooperation with the BSP, the National Government establishes the inflation objective two years in advance through DBCC (BSP, 2019). Then, the BSP informs the public of the inflation target and implements monetary policy to achieve it. In this regard, the BSP has high authority over monetary policy instruments (as mentioned in Chapter 4).

Furthermore, the Monetary Board (MB) of the BSP is the policymaking body (BSP, 2019). Under IT, the MB comprises BSP's Governor as Chairman, one Cabinet member (selected by the president), and other members representing the private sector, as opposed to the prior MB, which only included public sector officials (Mariano and Villanueva, 2006; BSP, 2019). MB has held eight meetings per year since 2012 to make monetary policy decisions (BSP, 2019). In addition, the Advisory Committee (AC) is formed as a technical part of the institutional framework for IT to enhance the decision-making process in the Philippines, with the task of considering, discussing, and offering recommendations to the MB concerning monetary policy (Mariano and Villanueva, 2006; Hammond, 2012). Initially, the AC consisted of five members, with the BSP's Governor serving as chairman and the other members being the Deputy Governor of the Supervision and Examination, the Deputy Governor of the Monetary Stability, the Assistant of the Governor of the Monetary policy Subsector, and the Assistant Governor of the Treasury Department (BSP, 2002; BSP, 2006). Currently, the AC consists of seven members, with the chairman still being the governor of the BSP, with no external members (BSP, 2023). The AC often meets several days before the MB's session to provide policy advice

for the MB. Subsequently, the governor of the BSP announces the final decisions of the MB based on a majority vote, aiming to attain the goal of price stability (BSP, 2019).

5.3.3.2. Monetary Policy Objectives

At the time of IT introduction, RA No. 7653 of 1993 of the Philippines established that price stability is the priority objective of monetary policy to promote balanced and sustainable economic growth in line with IT adoption[55]. Subsequently, in the course of implementing IT, the Central Bank Act has been amended by RA No. 1121 of 2019, adding "promoting financial stability" as one of the BSP's legal mandates alongside price stability (Section 3, RA No. 1121). However, this legislation still maintained price stability as the statutory overriding target.

During IT development, the balance between the goals has been flexibly implemented in practice. Accordingly, amid global uncertainty, the concerns about financial system stability and the economy's long-term development are considered by the BSP in making the policy decision. For example, during the COVID period in 2020 and 2021, the BSP implemented expansionary monetary policies by reducing interest rates and injecting significant liquidity to support the economy amidst the pandemic. This approach aligned with the flexible IT framework, considering the benign inflationary pressures at that time. Simultaneously, the BSP implemented financial measures to facilitate credit provision to banks, thereby ensuring financial system stability. In the face of soaring inflation in 2022, BSP has reaffirmed its primary mission as the goal of price stability under IT.

5.3.3.3. Inflation Target Setting

As mentioned earlier, the inflation target is determined by the government in consultation with the BSP. Specifically, the overall CPI's change, often referred to as "headline" inflation, is widely used to inform the public about inflation outcomes (BSP, 2019; Ciżkowicz-Pękała et al., 2019). Additionally, the BSP monitors core inflation, which excludes the prices of food and energy items, to guide policy decisions. This is because temporary shocks related to food and energy prices, from the BSP's perspective, can cause temporary volatility in headline inflation that may not necessarily require a monetary policy response (BSP, 2019)[56].

[55] See Section 4.1.3.
[56] However, inflation spiked in the post-COVID period, showing that failure to respond promptly to supply shocks in the context of already high inflation can have serious consequences, turning temporary inflation into persistent inflation (Gopinath, 2023).

Moreover, establishing the inflation target in the Philippines has some alterations over time, as depicted in Table 5.13. During the initial years of the IT framework, the BSP communicated the inflation target using a range format. For example, the inflation targets for 2003 and 2004 were 4.5-5.5% and 4.0-5.0%, respectively. However, in December 2006, the government sought to enhance clarity in targeting inflation and considered transitioning to a point target with a deviation band instead of a range format. This change has been officially implemented since 2008, with the inflation rate set at 4.0% ±1pp, equivalent to a range of 3.0-5.0%. In essence, this modification expanded the BSP's target range to 2 percent from the previous 1 percent. It provides greater flexibility for the BSP to conduct its monetary policy and reach the inflation target, aligning it with the economic conditions in the Philippines. Besides, this adjustment safeguards the credibility of the IT framework and brings the target design in line with the best practices of other IT countries (BSP, 2019; Ciżkowicz-Pękała et al., 2019).

Furthermore, in July 2010, under the approval of DBCC, the MB notified the move to a target for the medium term instead of the annual inflation objective. Accordingly, the BSP commits to attaining the target over a two-year horizon. For example, the targets for the years 2015-2016 and 2017-2018 were determined at 3.0 % ± 1pp (percentage point) and continued to be kept for 2019-2020.

Table 5.13. Inflation Target in the Philippines

Year	Inflation Target (in percent)
2002	4.5-5.5
2003	4.5-5.5
2004	4.0-5.0
2005	5.0-6.0
2006	4.0-5.0
2007	4.0-5.0
2008	4.0 ±1
2009	3.5 ±1
2010	4.5 ±1
2011-2012	4.0 ±1
2013-2014	4.0 ±1
2015-2016	3.0±1
2017-2018	3.0±1
2019-2020	3.0±1
2021-2022	3.0±1
2023-2024	3.0±1

Source: BSP

Amid elevated inflationary pressures resulting from global supply shocks and domestic constraints, inflation exceeded the target in 2022. However, rather than raising the target level, the BSP resolutely maintained the target at 3.0 % ± 1pp for 2023-2024, demonstrating its unwavering commitment to price stability to anchor inflation expectations. This approach aligns with the tactics employed by the Central Banks of Thailand and Indonesia.

5.3.3.4. Operational Framework

Throughout the implementation of IT, the operational framework of the BSP has undergone enhancements aimed at significantly improving monetary policy transmission efficiency.

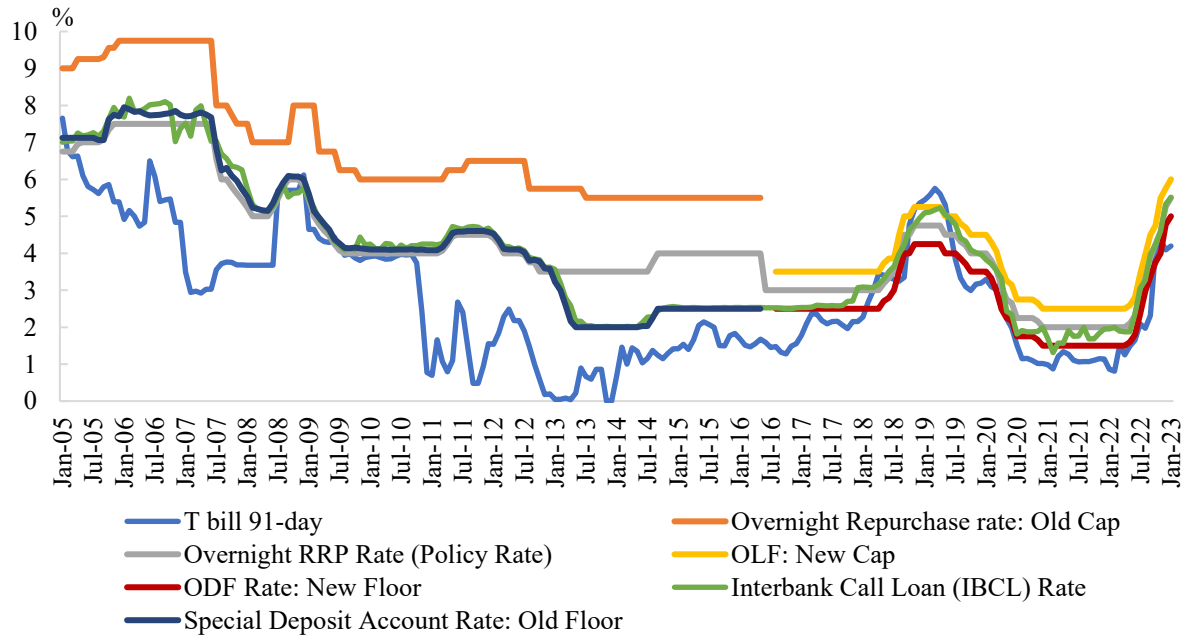
Instruments

The BSP uses many tools to achieve the inflation goal. Among them, the critical instrument under the IT regime is the overnight RRP (Reverse Repurchase) rate, which serves as the policy interest rate representing the BSP's monetary policy stance (BSP, 2019). Particularly, based on assessments of inflation projection and economic growth outlook, the BSP adjusts the overnight RRP to achieve the pre-announced target. More specifically, when inflation is expected to exceed the set target, the central bank adopts a tight monetary policy by increasing the policy interest rate. Conversely, if inflation is forecast to fall below the target level or when liquidity improvement is required in the financial system, the BSP considers cutting the policy rate to ease monetary policy. Besides, other tools are utilized for monetary policy such as OMOs, reserve requirements, and rediscounting instruments (BSP, 2019; BSP, 2022a).

During the initial phase of IT adoption, analyses pointed out a lack of transparency in the BSP's policy rate partly because of the tiering scheme, causing the actual effective RRP rate to differ from the RRP rate announced by the BSP (Mariano and Villanueva, 2006). In particular, the tiering mechanism imposed restrictions on interest rates for bank transactions with the central bank. Until 2006, banks received a rate of 7.5 percent on their first PHP 5 billion, 5.5 percent on their following PHP 5 billion, and 3.5 percent on the rest (BSP, 2006). Even so, market participants were largely aware of the BSP's tiering approach, which was intended to incentivize banks to lend money to customers rather than deposit excess funds with the BSP. Hence, in general, the 91-day treasury bill rate responded to movements in policy rates. Nevertheless, there were still discrepancies between these rates. For instance, while the policy rate increased in 2005, the T-bill rate continued to decline until 2006. This discrepancy may be

due to the easily tradable feature of T-bills, leading banks to prefer holding them instead of accessing the RRP window (Mariano and Villanueva, 2006). Similarly, a study by Guinigundo (2008) empirically demonstrated a weakened connection between the BSP policy rate and the 91-day T-bill rate. Remarkably, prior to 2016, the 91-day T-bill rate consistently maintained a considerably lower position than the policy rate and the (old) policy corridor in the Philippines. Similarly, from 2013 to 2016, the interbank rate remained well beneath the policy rate and always at the lower bound of the (old) corridor, as depicted in Figure 5.21.

Figure 5.21. The movements of Policy rate, Interest rate corridor, Interbank, and T-bill rate in the Philippines

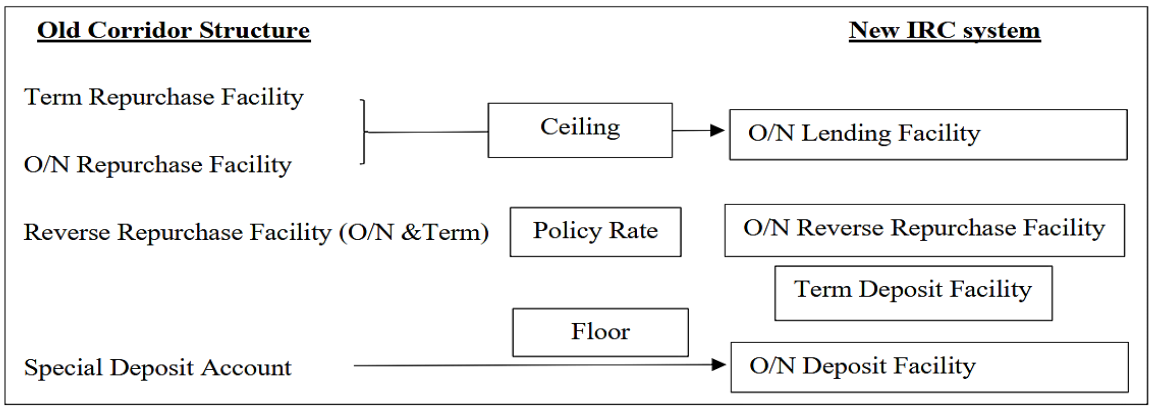


Source: The BSP and the author's illustrations

Given that circumstance, improving monetary operations becomes crucial in bolstering monetary policy transmission, especially through interest rate and credit channels. Accordingly, a term deposit auction facility was launched to drain liquidity as well as facilitate the money market's price discovery in 2015 (BSP, 2016). Furthermore, the BSP has officially implemented a new interest rate corridor (IRC) scheme to conduct its monetary operations since June 2016, as in Figure 5.22 (BSP, 2016). In particular, the IRC system comprises two interest rates: one for lending to banks from the BSP (usually an overnight lending rate) and another for taking deposits from banks (deposit rate). Specifically, the overnight lending facility (OLF) rate is 50 basis points higher than the BSP policy rate to create an upper bound of short-term market rates, replacing Repurchase (RP) windows. Meanwhile, the overnight deposit facility (ODF) rate is

50 basis points lower than the BSP rate to form a lower bound, replacing the Special Deposit Account Facility. At the same time, the BSP has changed the previous (term and overnight) RRP facility to a purely overnight RRP (BSP, 2016).

Figure 5.22. The Interest Rate Corridor (IRC) in the Philippines



Source: The BSP

Note. O/N is overnight.

Compared with the mechanism of the old system, the new one increased the efficacy of monetary operations for inflation targeting in the Philippines (Corbacho and Peiris, 2018). Indeed, both the 91-day T-bill rate and interbank call loan rate have gradually increased and followed the interest rate corridor closely since 2017, as shown in Figure 5.21. This change of operating mechanism helps Philippine monetary policy align with other Southeast Asian IT countries. In particular, the central banks of Thailand and Indonesia also apply the interest rate corridor system to implement monetary operations via Deposit Facility (DF) and Lending facility (LF) under the IT framework.

Furthermore, with the passing of RA No. 1211 in 2019, the BSP can issue its own securities for monetary operations starting in 2020. Primarily, the BSP's debt securities serve as an additional instrument in OMOs, thereby enhancing the effectiveness of the IRC system (BSP, 2022b). In November 2021, the eligibility criteria for counterparties in the secondary market for BSP Securities were broadened to encompass trust entities. Additionally, digital banks were included as eligible participants in the BSP's monetary operations to boost monetary effectiveness under IT (BSP, 2022b).

Afterward, the high inflation pressure during the post-COVID period put the monetary policy operations of the BSP to the test. In fact, because the enhancements above caused better

monetary transmission, both the interbank interest rates and the 91-day T-bill rate responded quickly and appropriately to the continuous policy rate hikes implemented by the BSP in 2022 (as shown in Figure 5.21), thereby assisting in alleviating inflationary pressure. However, despite having an improved monetary operating system, inflation has remained high, primarily due to the immense challenge posed by a series of supply shocks and possibly an insufficient response from the BSP. Given that real interest rates were still near 0% in 2022, indicating that monetary policy remained accommodative (IMF, 2022c), the rate hikes should have been more robust and expeditious to curb inflation further. In other words, the BSP ought to have adopted a tighter monetary policy stance.

Hence, in 2023, the BSP further tightened monetary policy and withdrew the extraordinary liquidity measures on OMOs associated with COVID-19. Thanks to these measures, coupled with the easing pressure from the supply shock, inflation began to decline from 8.7% in January 2023 to 6.1% in May 2023, although it remained significantly above the target.

Transmission Channels

As demonstrated earlier, the close link between the BSP policy rate and market interest rates provides the essential premise for monetary policy transmission, primarily via the interest rate and credit channels. Additionally, within the IT regime, inflation expectations have gained increasing significance in the monetary transmission mechanism (Corbacho and Peiris, 2018). Indeed, empirical studies consistently highlighted the influence of the inflation expectation channel in shaping the inflation rate in the Philippines since IT application (Guinigundo, 2008; Guinigundo, 2016). Acknowledging this issue, the BSP improved its communication channels to convey clear and timely information on monetary policy decisions. This proactive approach helped economic agents adopt a more forward-looking stance when assessing inflation, particularly since 2008 (Guinigundo, 2016).

In the context of significant post-COVID inflationary pressure, the attention to the inflation expectation channel in monetary policy transmission in the Philippines becomes even more crucial. Inflation expectations considerably increased in 2022, contributing to the second-round effects of the supply shocks and potentially causing expectations to become unanchored (IMF, 2022c). Therefore, in addition to raising the interest rate and enhancing the operational framework, further intensified communication and a stronger commitment to the inflation target from the BSP (e.g., applying forward guidance and holding press conferences right after the

monetary board meeting) are needed to strengthen market confidence, thereby enhancing the effectiveness of policy transmission and ultimately helping to re-anchor inflation expectations.

5.3.3.5. Models for Forecast

Under the forward-looking monetary policy framework of the IT regime, inflation projections and evaluations of economic and financial indicators assume significant importance in monetary policymaking in the Philippines (Dacio and Cruz, 2012; BSP, 2019). Consequently, the BSP pays special attention to bolstering the technical capacity and employing advanced models for forecasting macroeconomic variables.

Particularly, in late 2001, inflation forecasting models began to be applied in the Philippines to prepare for IT introduction (Kongsamut, 2001). Initially, the models were relatively simple, consisting of a single equation model and a multi-sector model (Mariano and Villanueva, 2006). Then, the BSP developed a structural macroeconomic model to cover its perspective of monetary policy transmission to support the two above models (BSP, 2006). Also, the BSP often evaluated its existing set of models to enhance forecasting results and update new methods.

Over time, the BSP has developed a DSGE model to supplement its forecasting model set. Furthermore, the BSP has switched to employing a quarterly medium-term macroeconomic model instead of the long-term model as before to promptly capture the changes in the evolving economic landscape (BSP, 2014). Additionally, establishing a semi-structured forecasting and policy analysis system was finished in 2012 with technical assistance from the IMF to enhance further technical capacities (Corbacho and Peiris, 2018). Also, the BSP has considered measures of inflation expectations, improved the database, and actively used information on financial markets for serving forecasting works. Currently, the BSP's model system and database are relatively complete, used to forecast inflation over two years and perform policy analyses and simulations (BSP, 2022a).

In addition to inflation forecasting, the BSP has been actively collaborating with the IMF to improve the Policy Analysis Model for the Philippines. This upgrade aims to promote data-coherent and structured forecasting and combined monetary analysis with other policies, thereby strengthening policy coordination effectiveness in the face of global uncertainty (IMF, 2022c).

5.3.3.6. Transparency and Accountability

The BSP considers transparent, timely, and clear communication a crucial part of its IT framework for ensuring transparency and accountability. Indeed, right from the early days of IT adoption, the BSP utilized basic reporting and disclosure channels to enable the public to better monitor its policies. These included releasing quarterly inflation reports, publicizing the release of MB meetings after one month of meetings, and regularly reporting to Congress (Mariano and Villanueva, 2006). Subsequently, numerous other communication means have been developed to enhance transparency. In particular, the BSP conducts public presentations on its monetary policy and inflation target across many Philippine cities. Furthermore, various seminars and conferences are organized by the BSP to discuss monetary policy and economic matters (BSP, 2019). The central bank's website has also been developed and improved to provide regularly updated and useful information on the BSP's policy. Besides, since 2015, the BSP has launched an enterprise-wide communications strategy to better track emerging issues that require market communication. This approach can help to enhance the efficiency of the BSP's monetary policy instruments (Guinigundo, 2016).

During times of high uncertainty (e.g., the post-COVID era), it becomes increasingly crucial to strengthen communication effectiveness to maintain the BSP's credibility, thereby shaping inflation expectations. Accordingly, the BSP has heightened its communication endeavors by releasing a new Monetary Policy Report in February 2022, instead of the Quarterly Inflation Report as previously done, to cover more details about monetary policy decisions. However, given the persistently high inflation, further enhancing the transparency and communication of the BSP is needed. For example, the BSP should upgrade the Monetary Policy Report as a prominent publication, enhance forward guidance on its policy rates, release the minutes of monetary meetings, and effectively communicate the gradual withdrawal of COVID-related support measures (IMF, 2022c).

Concerning accountability, the BSP must report and explain deviations (if any) from the inflation target to the public since its IT application. Moreover, the BSP Governor is required to submit an Open Letter to the Philippines' President. The letter details the factors behind the inflation deviation and the policy measures that will be taken to realign it with the target path over the specified time horizon (BSP, 2019). Since pursuing the IT framework, the BSP issued the Open Letter ten times to the President.

However, unlike Indonesia and Thailand, the Philippines authorities use escape clauses (also called “exemptions” or “explanation clauses”) to the inflation target. Particularly, the clauses mention a predetermined set of acceptable conditions that can make the BSP fail to meet the target. They are price pressures resulting from (1) price volatility in oil products, (2) natural disasters or events that impact a significant portion of the economy, (3) price volatility in agricultural products, and (4) noticeable government policy changes that directly impact prices (BSP, 2019). When employing explanation clauses, the BSP must ensure careful and clear communication to the public, elucidating how the factors above contributed to the deviation of the actual inflation from the target. In practice, these categories seem to be appropriate in the early stage of IT adoption for developing and emerging countries, like the Philippines, where some flexibility is needed for the central bank to have more room to fulfill its commitments, especially in cases out of the control of the central bank (Ito and Hayashi 2004). Nevertheless, some studies suggested that escape clauses should be limited as they could undermine the credibility of the IT framework, especially for an escape clause in situations of ambiguity (Bulíř et al., 2008; Warjiyo and Juhro, 2019). In any case, a clear explanation and best efforts to bring inflation back to the target remain essential for preserving the central bank’s credibility within the IT framework.

5.3.4. Other Objectives and Policy coordination under the IT framework

The BSP follows a flexible IT regime, which considers the inflation target as the primary objective but does not ignore the other goals (e.g., sustainable economic growth and financial stability) (BSP, 2019; BSP, 2022a). Hence, the BSP collaborates with other agencies to ensure that the central bank’s policies are part of a comprehensive and consistent policy framework. This section will discuss the Philippines’ experiences with these issues.

5.3.4.1. Exchange Rate and Capital Flow

In principle, the BSP’s commitment to maintaining price stability under IT is supported by its flexible, market-determined exchange rate mechanism. However, given capital flow fluctuations, the enormous exchange rate volatility may substantially influence actual and expected inflation. Hence, the BSP’s intervention policies in such situations are justified to

preserve price stability under the IT framework (BSP, 2020b). Additionally, FX interventions can support financial stability in the Philippines amid global turbulence[57].

(i) Exchange Rate Regime in the Philippines

The BSP announced adopting a de jure free-floating exchange system, which fulfilled the IT requirement at the start of IT (as mentioned in Section 4.1.3). Throughout IT implementation, the de facto exchange rate in the Philippines was generally flexible, but it is not classified as a free-floating exchange rate regime; instead, it is considered a floating regime (except from 2020 to 2021) (Table 5.14). Accordingly, the BSP lets market forces determine the exchange rate but joins the FX market in such instances of excessive movement primarily to keep order and stability. Besides, when necessary, the BSP is ready to supply liquidity and meet legal foreign currency demands (BSP, 2020b).

Table 5.14. De facto Exchange rate regime in the Philippines

Period	Regime
2000 – 2007	Independently floating
April 2008*- 2019	Floating
2020 – mid-2021	Crawl-like arrangement
Mid-2021 - 2022	Floating

Source: IMF, Annual Report on Exchange Arrangements and Exchange Restrictions, 2000-2022

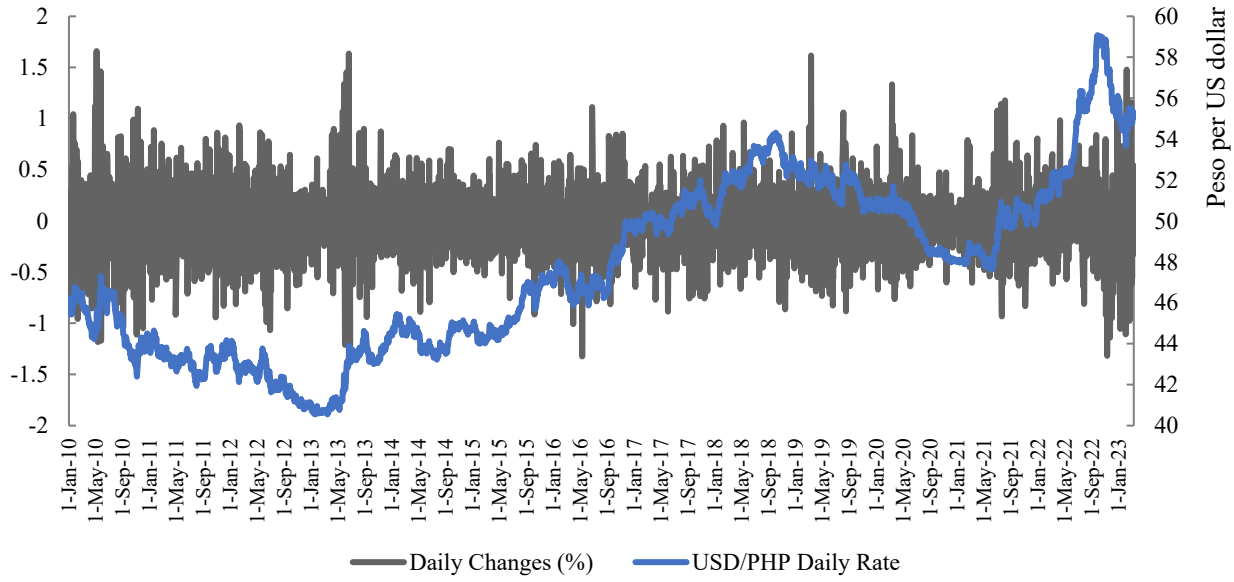
Note: (*) The classification has been changed from independently floating to floating because of the revision of the IMF's classification methodology, not implying a judgment on a significant adjustment to the country's exchange arrangement or other policies (IMF, 2009).

Notably, from the end of March 2020 to February 2021, due to concerns about the adverse impact of the COVID pandemic on the FX market, the BSP intervened to keep the exchange rate relatively stable to hedge against the volatility risk (IMF, 2022a). As shown in Figure 5.23, the peso's exchange rate fluctuated in a narrow range against the US dollar at that time. Hence, the de facto exchange rate strategy was determined as a Crawl-like arrangement for a short

[57] In fact, the potential risks of significant currency depreciation causing FX mismatches, which leads to financial instability, are relatively low in the Philippines due to limited direct FX exposures (IMF, 2022c). However, FX interventions to smooth the extreme depreciation of the peso can mitigate the necessity for more aggressive policy rate hikes during times of global uncertainties, thereby contributing to reducing risks to financial stability.

period (IMF, 2022a). However, from mid-2021, the BSP allowed the peso to become more flexible and let the exchange rate act as a shock absorber amid global uncertainty (IMF, 2023a). As a result, its de facto exchange rate regime is reclassified as a floating regime. Specifically, the peso depreciated by 16.9% as of September 2022 compared to the end of June 2021 amid the strength of the US dollar due to the Federal Reserve's tightening policy, and then the peso gradually rebounded from October 2022. In general, the BSP adheres to a floating exchange rate regime during IT implementation.

Figure 5.23. Exchange Rate Movement in the Philippines



Source: BSP, Author's illustration.

(ii) Strategy and Tools

Exchange Rate Policy

The BSP's strategy focuses on mitigating excessive volatility in the peso rather than defending a specific level or trend of the exchange rate[58] (BSP, 2020b). This is illustrated by Figure 5.23, where the trends in exchange rate movements are generally flexible, with periods of appreciation and depreciation. Particularly, the BSP utilizes three main tools to maintain stability and order in the FX market, including intervention in the FX market, FX regulations, and monetary policy measures (BSP, 2020b).

[58] The empirical study also showed that despite the BSP's participation in the FX market, especially in the spot market, there is no evidence indicating that the BSP targets any explicit level for the exchange rate across the various trading horizons during IT implementation (Guinigundo, 2013).

Concerning FX intervention, the motivations for the BSP's participation in the FX market are to preserve monetary stability, limit speculation and discourage massive capital inflows and outflows. The primary aim is to mitigate exchange rate volatility rather than reversing the fundamental trajectory of the domestic currency, whether it is depreciating or appreciating (BSP, 2020b). To that end, the BSP conducts FX interventions in the spot and forward markets and occasionally employs derivatives. Notably, the BSP does not provide advance notice and full disclosure of its FX interventions to prevent speculative behavior [59]. Intervention decisions may be influenced by current developments and/or cases that require proactive measures to address emerging issues before market reactions occur (Guinigundo, 2013).

Furthermore, the BSP can employ monetary policy measures, such as changing key policy rates or the interest rates for deposit and lending facilities, if the exchange rate fluctuations threaten to force inflation outside its target range. Hikes in interest rates, for example, can decrease demand for dollars during periods of depreciation pressure on the domestic currency (BSP, 2022a). Besides, raising domestic interest rates also increases interest rate differentials, helping to limit capital outflows. Consequently, the depreciation pressure could be eased. However, any such interest rate adjustment must be compatible with the BSP's price stability mission under the IT framework (BSP, 2020b).

Market-based FX regulations are also employed, accompanied by FX interventions and monetary policy measures. The BSP, for instance, has been maintaining FX regulations responsive by liberalizing FX restrictions (with appropriate hedging safeguards). In recent years, the FX rules have continued to liberalize further (IMF, 2022c). However, the BSP uses several measures to mitigate the impact of significant peso fluctuations. Among them, the BSP maintains a healthy level of FX reserves as its buffer, adjusts and reviews some macroprudential measures (e.g., risk weight for non-deliverable forwards), utilizes the liquidity management instruments (e.g., the USD repo facility), and strengthens instructions on the Currency Risk Protection Program (BSP, 2020b). Meanwhile, the BSP has thus far refrained from using non-market measures to address rising exchange rate volatility (BSP, 2020b).

However, considering the shallowness causing periods of illiquidity in the FX market that led to exchange rate volatility, it becomes imperative to prioritize the further development and

[59] This perspective aligns with that of the Bank of Thailand. Specifically, they express concerns about the potential promotion of speculative behavior by banks if all data regarding foreign exchange (FX) interventions were to be fully disclosed. Nevertheless, it should be considered to publish FXI data (or aggregation) with the proper lags to deal with market sensitivity (IMF, 2022c).

deepening of the domestic FX market and capital markets. This strategic approach is vital to reduce the need for smoothing exchange rate volatility. In particular, the BSP can encourage the institutional participation of pension funds and insurance to deepen the market[60], supporting macroeconomic stability (IMF, 2022c).

Capital Flow Policy

To deal with the adverse effects of the enormous volatility in capital flows (e.g., causing exchange rate fluctuations and financial instability), the BSP mainly uses FX interventions, (occasional) monetary policy actions (as mentioned above), and macroprudential tools to hedge against risks to the price stability as well as financial system stability. Concerning capital flow measures, although there are some available measures (e.g., limits on banks' non-deliverable forward exposures), capital controls are limited in use in the Philippines. In the BSP's view, capital flow controls have costs that outweigh their benefits (BSP, 2020b). Firstly, there are administrative hurdles to overcome to impose these controls effectively. Particularly, to avoid the formation of tax arbitrage opportunities, the tax on overseas transactions should be enforced universally. Besides, advances in technology and the increased sophistication of financial tools let investors circumvent restrictions and taxation, thereby causing more difficulty in conducting the tax effectively. Secondly, imposing regulations and controls on capital flows will hinder efficient capital allocation between countries. Finally, reimposing regulations would convey negative signals to investors, limiting the capacity to access international capital and attract foreign investment to the Philippines (BSP, 2020b). Therefore, BSP does not rely heavily on capital flow tools.

Policy Coordination in practice

During periods of significant capital flow and exchange rate fluctuations, the above policies are integrated to ensure that they do not hinder the functioning of monetary policy within the IT framework.

Particularly, from the GFC until 2013, the Philippines received massive capital inflows because of unconventional monetary policy in developed countries, which put appreciation pressure on the peso. To confront the situation, the BSP intervened in the FX market, mostly one-sided FX

[60] According to the Asian Development Bank (ADB), the proportion of these organizations in the Philippine domestic market is still relatively modest, with an aggregate volume of only about 12% of GDP. In comparison, the figure for Thailand is 30% of GDP. See https://www.adb.org/news/400-million-adb-loan-support-expansion-philippine-capital-markets

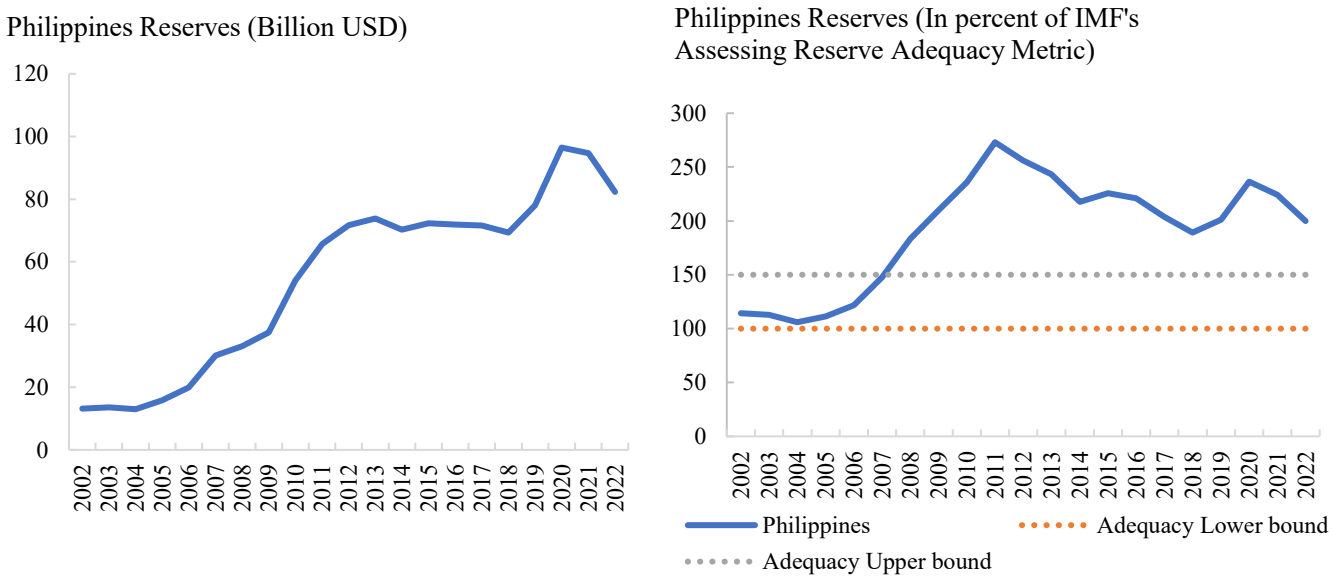
intervention, with evidence of building up reserve accumulation (Corbacho and Peiris, 2018). The FX reserves increased twofold, from USD 33.05 billion in 2008 to USD 73.8 billion in 2013. Consequently, the reserve level has been well above the adequacy level suggested by the IMF since 2008, as shown in Figure 5.24. Meanwhile, amid low inflationary pressure resulting from currency appreciation, monetary policy was accommodative to support the economy after the GFC. Specifically, the BSP implemented a total reduction of 200 basis points in the policy rate from November 2008 to August 2009. Subsequently, the overnight RRP rate was maintained at a relatively stable level of 3.5%-4% for the inflation objective, while FX interventions continued to curb excessive appreciation of the peso. However, holding too much FX reserves is not without costs (Corbacho and Peiris, 2018). Besides, partial sterilization for FX interventions could lead to a protracted liquidity overhang as well as low costs of domestic borrowing, thereby boosting credit growth and asset price inflation. Meanwhile, the BSP's balance sheet, particularly its capitalization, suffered from valuation losses due to peso appreciation in the face of significant capital inflows (Guinigundo, 2013). Hence, to supplement FX interventions, the BSP set new caps on non-deliverable forwards (NDFs) positions, which took effect in March 2013 amid capital volatility to preserve financial stability. Accordingly, local bank exposure to NDFs was capped at 20% of capital, while foreign bank exposure to NDFs in the Philippines was limited to 100% of capital (BSP, 2013).

From 2013 to 2019, non-resident capital inflows and reserve accumulation stabilized as FX intervention became more symmetric and two-sided. Notably, the Taper Tantrum period in mid-2013 led to capital outflow from emerging countries, including the Philippines (BSP, 2014). During that period, the BSP relied more on currency depreciation rather than significant reserve drawdowns through the sale of foreign currencies, in contrast to previous episodes of outflows such as the AFC (Corbacho and Peiris, 2018). Hence, total reserves slightly declined but were still sufficient, above the adequacy range recommended by the IMF (Figure 5.24).

Throughout the COVID pandemic in 2020, the substantial increase in FX reserves was partly attributed to the BSP's FX interventions aimed at mitigating peso volatility as a precautionary measure and the remarkable strength of the pandemic-related balance of payments (IMF, 2021a). Particularly, the FX reserve surged from USD 78.05 billion in 2019 to USD 96.5 billion, equivalent to about 236 % of the IMF's Assessing Reserve Adequacy (ARA) metric. In fact, the decline in FX supply did not align proportionally with the decrease in FX demand during the COVID period, causing heightened exchange rate volatility, especially in a shallow FX market in the Philippines. In response, the BSP actively engaged in the FX market to smoothen

undue exchange rate fluctuations. Besides, the BSP stressed that the main impetus behind the accumulation of FX reserves in 2020 was precautionary, reflecting concerns about potential market volatility considering increased government financing needs and escalating uncertainties at both domestic and international levels (IMF, 2021a).

Figure 5.24. FX Reserves of the Philippines



Source: IMF, author's illustration

Note. The IMF's Assessing Reserve Adequacy (ARA) metric serves as a gauge to determine a country's potential FX liquidity requirements during unfavorable situations, thereby indicating the country's level of susceptibility. A reserve to ARA metric ratio ranging from 100% to 150% is deemed sufficient (IMF, 2016a).

From mid-2021, there was an increase in capital outflows due to tight global financial markets and a severe deficit in the current account balance caused by global supply shocks. As a result, the peso experienced a sharp depreciation against the USD (IMF, 2022c). In response to this situation, the BSP allowed the exchange rate to be flexible, acting as a shock absorber, and intervened only to smoothen disorderly market conditions. However, the excessive depreciation of the peso, coupled with the supply shocks, intensified inflationary pressures in 2022. Consequently, the BSP swiftly raised policy rates from May 2022 to maintain price stability objectives. In this context, increased FX interventions through the sale of foreign currencies would support the tight monetary policy and help alleviate inflation, aligning with the IT framework.[61] Accordingly, the FX reserves declined from USD 96.5 billion in 2020 to below

[61] However, while the FX intervention tool can help ease tradeoffs in monetary policy objectives, it should not be overused to facilitate exchange rate misalignment or to substitute necessary monetary and fiscal responses (IMF, 2022c).

USD 90 billion in 2022, yet remained sufficient at 200% of the IMF's ARA metric. Hence, throughout IT implementation since 2022, the Philippines' reserves to the IMF's ARA metric ratio have either been in the sufficient range (100% to 150%) or well above the upper bound (Figure 5.24). This implies that the Philippines' substantial buffer of FX reserves allows it to withstand unexpected shocks that may occur.

Generally, the BSP often adopts intermediate degrees of exchange rate stability and capital account openness to gain monetary policy autonomy. Accordingly, these policies have been integrated and compatible with the BSP's IT framework. Nevertheless, given the shallow nature of the FX market in the Philippines, it is critical to reiterate the need for further development and deepening of the FX market. This is essential to mitigate exchange rate volatility caused by illiquidity, ultimately supporting the price stability objective within the IT framework.

5.3.4.2. Financial Stability and Macroprudential Policy

Similar to Thailand and Indonesia, in the Philippines, while price stability is the fundamental goal, the frameworks for monetary policy and financial stability policy ensure that the two interact in a complementary manner. Notably, the utilization of macroprudential policy measures, along with analytical and surveillance methods to achieve financial stability, has let the BSP prioritize its monetary policy on its inflation target (Guinigundo, 2017; BSP, 2020a). At the same time, the BSP understands that the financial stability tools and monetary policy instruments interact and impact one another, so policy coordination must be considered.

Moreover, although the BSP plays a central role in stabilizing the financial system, this objective is a shared task of related authorities rather than the only responsibility of the BSP (Guinigundo, 2017). Therefore, it calls for close cooperation between the BSP and other government regulators. The BSP also emphasizes the significance of a strong communication strategy to enforce its policies effectively (BSP, 2020a).

(i) Financial Stability Objective and Institutional Arrangement

The Central Bank Act of 1993 did not specify the financial stability objective. However, with the amendment of the Central Bank Charter (Republic Act No. 11211) in 2019, financial stability has become a formal mandate of the BSP. As a result, the BSP is the sole financial institution in the Philippines with financial stability officially stated in its Charter. This establishes accountability when working with other agencies because stability encompasses all aspects of the financial system and its effect on the economy (BSP, 2020a). According to the

BSP, the "financial stability" objective is to make the financial system (in its entirety as well as in its components) more resilient to shocks. This is accomplished by controlling systemic risks that may impact the financial system, thereby ensuring that finance remains a value proposition for consumers in normal periods while staying resistant in the event of shocks (BSP, 2020a).

Table 5.15. Institutional Initiatives for Financial Stability in the Philippines

Year	Institutional Development
2010	Establish FSC (the Financial Stability Committee) to monitor and reduce systemic risk accumulation in the financial system
2011	Set up FSCC (the Financial Stability Coordination Council), but only formalized FSCC in January 2014
2017	Set up OSRM (the Office of Systemic Risk Management)
2018	Publish the first Financial Stability Report
2019	Enact Republic Act (R.A.) No.11211 to include the mandate of financial stability in the BSP's Charter
2020	Establish the FSPC (Financial Stability Policy Committee) to replace the FSC The BSP engages in discussions within the FSPC regarding issues of financial stability, before including them in the FSCC meeting for interagency discussion

Source: BSP

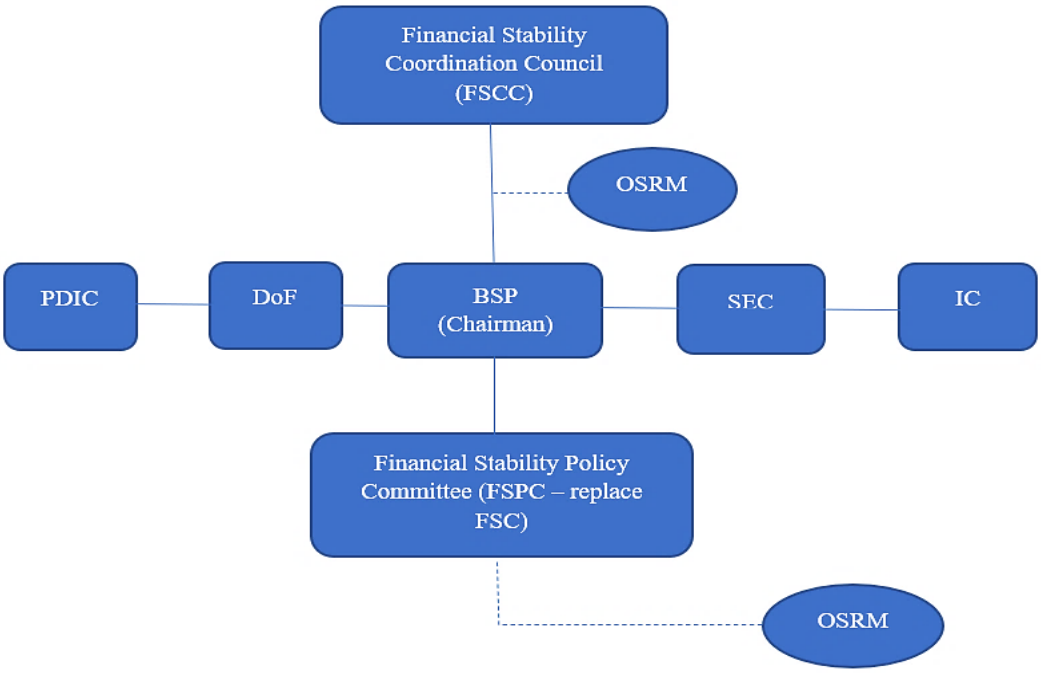
In practice, financial stability has been a concern of the BSP since 2009, but the most important improvements have been introduced more recently, as shown in Table 5.15. Besides, because the effective management of systemic risks requires collaboration among various stakeholders, the financial stability objective necessitates a proper institutional arrangement to maintain constant concentration while establishing clear accountability. In the Philippines, the institutional arrangement has enhanced close inter-agency coordination and placed the BSP in a better position to play an active role in policymaking (Figure 5.25).

Particularly, within the BSP, some internal agencies have been established for the financial stability objective. Accordingly, the BSP set up the Financial Stability Committee (FSC) in 2010 to supervise and reduce the accumulation of systemic risks. Specifically, the FSC gives recommendations to the Monetary Board (MB) for macroprudential policies that it believes are necessary to attain the financial system's stability[62]. After that, the FSPC (Financial Stability Policy Committee) was created as a subcommittee of the MB in 2020, replacing the FSC. Unlike

[62] Both prudential supervision policy and monetary policy decisions were made within the MB, with no separate decision-making committees (Guinigundo, 2017).

the FSC, the FSPC has decision-making authority on macroprudential policies within the BSP. Besides, the BSP Governor serves as Chairman of the FSPC, while members include the Secretary of Finance and other Monetary Board Members. As such, with a Board-level committee at the BSP, financial stability has the most senior possible representation. Furthermore, the FSPC's technical team is a specific organization inside the BSP, assuring continuity and concentration. The FSPC holds meetings six times a year. Moreover, to enhance the BSP's ability to constantly assess and monitor the financial system risks, an offshoot of the FSC (then replaced by FSPC) is the Office of Systemic Risk Management (OSRM), which was established in 2017 as a separate office within the BSP (BSP, 2020a). Accordingly, OSRM performs all technical tasks, including developing macro-financial models, conducting market monitoring, continuously analyzing the condition of financial stability, proposing policies, and creating initiatives for various information, education, and communication (IEC) activities.

Figure 5.25. Institutional Structure for financial stability in the Philippines



Source: Office of Systemic Risk Management (OSRM), the BSP

Outside the BSP, it coordinates with other regulators for overall financial stability via the Financial Stability Coordination Council (FSCC), as depicted in Figure 5.25. The FSCC was constituted in 2011 thanks to the BSP effort. In particular, the FSCC includes the Department of Finance (DoF), the Philippine Deposit Insurance Corporation (PDIC), the Insurance Commission (IC), and the Securities and Exchange Commission (SEC) as member agencies.

However, the FSCC was only formalized in January 2014 when the member agencies signed a Memorandum of Agreement. The FSCC is chaired by the BSP Governor and meets on a quarterly basis. The establishment of the FSCC has significant importance in pursuing financial stability in the Philippines because it allows related agencies to have a more comprehensive perspective of the financial system, thereby improving macroprudential policy understanding and conduction. Besides, the potential conflicts between these agencies' regulations can be resolved via information exchange and discussion at the FSCC meeting (BSP, 2020a). However, the FSCC serves as a voluntary exchange platform among stakeholders, lacking a regulatory framework for final decision-making (IMF, 2022c). Therefore, to effectively mitigate the potential for inaction bias, it is necessary to grant the FSCC authority and provide it with a clear Charter. This would enable the FSCC to make official recommendations to its members. To ensure the accountability of the member agencies, these recommendations can be accompanied by a transparent explaining mechanism.

(ii) Macroprudential Policy and Tools

The BSP has applied many tools to tackle financial stability concerns. In particular, given the banking industry's increasing exposure to the real estate sector, appropriately targeted and designed measures have been applied to hedge risks to financial system stability that may stem from the area (Guinigundo, 2017). Notably, the BSP requires all banks to offer quarterly reports on Residential Real Estate Loans to gather data for calculating the residential real estate price indicator, which is important for assessing credit conditions and the real estate market. Besides, the Real Estate Stress Test limit for property exposures has become operational since June 2014. Moreover, bank lending to the real estate sector is capped at 20% of a bank's loan portfolio (Arslan and Upper, 2017).

Furthermore, the BSP has implemented macroprudential regulations to avert financial imbalances (Table 5.16). Examples of these regulations include Loan-to-Value (LTV) ratios, single borrower limitations, concentration limits, general loan loss provisioning, limits on open FX positions, and liquidity measures. Especially in 2018, the BSP introduced the Countercyclical Capital Buffer (CCyB) to its macroprudential toolkit, aiming to strengthen the regulation of the banking system's capital buffer and reduce systemic risks. Currently, the CCyB is set at 0% (BSP, 2022a).

Table 5.16. Macroprudential Tools in the Philippines

Tools	Implementation
LTV ratios	Manage bank lending
Limits on lending to specific sectors	Control risks concentration
Limits on currency mismatches	Control FX funding risks
Limits on net open currency positions	Control FX funding risks
Limits on single borrowers and related parties	Reinforce arm's length transactions
Countercyclical capital buffer	Enhance system resilience and mitigate build-up risks

Source: Arslan and Upper (2017), the BSP website

Also, the BSP has used some analytical and surveillance methods in addition to macroprudential instruments. Specifically, early warning indicator systems concerning external debt and currency crises and rating systems, network analysis, and regular reports are among these measures. They are utilized to detect vulnerabilities in the financial market, offering information that allows authorities to make impartial and well-informed decisions (BSP, 2020a). Besides, while selecting macroprudential tools, surveillance, and analysis instruments is scrutinized and carefully calibrated, judgment still plays a role in policy decision-making (Guinigundo, 2017; BSP, 2020a).

(iii) Communication Strategy for Financial Objective

Like the price stability goal, the BSP has made great efforts to establish a suitable communication mechanism for financial stability objectives. For example, the financial system's vulnerabilities, as well as the policy response of the BSP, are communicated through interviews by crediting rating agencies, media, and press releases. Moreover, the BSP's website provides comprehensive information on macroprudential and supervisory regulations, clear explanations of laws, and procedural requirements. Besides, BSP macroprudential policies are also conveyed through regular publications (e.g., Quarterly Report on Economic and Financial Development; Financial Stability Report) and meetings with stakeholders (e.g., regular meetings between the BSP-Bank Supervision Policy Committee and 15 industry associations). Significantly, a communication workstream operates inside the BSP with the task of coordinating the communication strategy for financial stability and price stability (BSP, 2020a).

(iv) Coordination between macroprudential policy and monetary policy under IT

It is important to establish a well-defined mechanism that can efficiently address conflicting policy views under the IT framework. Indeed, although there are parallels between monetary policy, macroprudential, and banking supervision because, after all, the ultimate goal of these policies is the stability of the economy, there are still some conflicting circumstances. For example, while relaxing financial market regulations and lowering interest rates can benefit economic growth amid benign inflation, it may also create additional systemic financial risks. Likewise, strengthening the countercyclical buffer may make sense regarding the financial cycle but lead to a higher cost of doing business for banks. Meanwhile, from the perspectives of the Philippine authorities, the job is not to avoid conflicts but to have a candid dialogue about the challenges that affect each of the policy goals and then make final judgments. This requires the authorities always to have a holistic perspective to accurately assess the economic situation and possible risks in the financial system (BSP, 2020a; BSP, 2022a). Furthermore, because the risk perspective must be pre-emptive, the Philippines authorities acknowledge that they must express their worries before market indicators show signs of outright disruption. Unlike monetary policy, the absence of a clear intermediate target for financial stability necessitates gaining an awareness of risk behaviors that may not be immediately apparent in the statistics.

In practice, across various periods under the IT framework, the BSP made efforts to coordinate monetary and macroprudential tools with other aspects (such as financial policy) for price and financial stability objectives. For instance, during the COVID period, the authorities implemented a wide range of policy responses to alleviate the economic impact and uphold financial stability. Specifically, accompanied by a total interest rate cut of 200 basis points in 2020-2021, reduction of reserve requirements, and liquidity injection into the system, the BSP implemented financial measures (e.g., relaxation on provisioning requirements and asset classification for banks, a temporary raise of caps for single borrowers from 25% to 30% from early 2020 to end-2021, financial inclusion of small and medium enterprises loan) to support the financial sectors against the pandemic shocks (BSP, 2021). Also, for real estate loans, the BSP raised banks' loan share for this area from 20% to 25% of total loans. Besides, the BSP continued to keep the CCyB measure at 0% to support the banking system. As a result, these measures increased the credit and liquidity for the market participants, thereby alleviating the economic and financial impacts of the pandemic. Specifically, the evaluation of systemic financial risks indicated a low level of risk, and the banking system possessed ample liquidity and capital buffers, which contributed to the resilience of the financial system during the pandemic (IMF, 2022c). Furthermore, the monetary policy successfully ensured the

achievement of the set inflation targets in both 2020 and 2021. However, as the shock of the pandemic subsided, inflation risks emerged in 2022, prompting the BSP to continuously increase policy rates and reduce liquidity support measures. In this context, it is important to closely monitor growing financial risks. Indeed, while there has been some improvement in profitability and debt servicing capacity, the pandemic heightened risks for vulnerable non-financial corporations (NFCs), which may encounter renewed challenges as interest rates continue to rise. Accordingly, the accessibility of credit for non-financial corporations, particularly micro, small, and medium enterprises, has faced constraints amid high rates. Additionally, there is a possibility of amplified risks via conglomerates that combine both financial and non-financial institutions (IMF, 2022c).

Against this backdrop, as monetary policy continues to be focused on curbing inflation, the macroprudential policy framework needs further improvement to strengthen supervision and protect financial stability, thereby supporting effective monetary policy transmission. Particularly, although there have been significant reforms, an important tool that is absent is the macroprudential stress test, which encompasses a comprehensive range of macro scenarios. These exercises would primarily concentrate on the systemic aspect of the financial system, examining the impact of common macro scenarios deemed relevant at a specific juncture. Moreover, by incorporating macro-financial feedback effects, these exercises can help further enhance decision-making effectiveness in coordinating monetary and macroprudential policies (IMF, 2022c). Hence, this is an issue that requires prompt improvement. Additionally, the BSP can strengthen its monitoring capabilities concerning real estate-related risks within the financial system by adding indicators specifically focused on commercial real estate (IMF, 2022c).

In general, the ongoing enhancement of institutional arrangements and the expansion of policy tools enable the BSP to conduct its policies in a mutually reinforcing manner. However, there is still room for improvement in policy combinations. This can be achieved by developing toolkits, conducting macro scenario stress tests, integrating macro-financial relationships into comprehensive assessment models, and ensuring that the interlinkages between monetary policy, macroprudential policy, and supervisory functions are reflected in the decision-making process. In addition, the role of the Financial Stability Coordination Council should be legally strengthened for the coordination of the BSP and other related stakeholders to oversee financial conglomerates further.

5.3.4.3. The Government's Coordination

Fiscal unsustainability owing to huge deficits or high debt ratios may exert increased strain on the effective conduct of monetary policy as it can affect not only interest rates and aggregate demand but also the ability of monetary authorities to curb inflation[63] (Montoro et al., 2012; Rogoff, 2022). This harms the monetary policy effectiveness under IT. Additionally, the role of the government is also reflected in coordinating its fiscal policy with the monetary policy of the central bank in a harmonious way to achieve macroeconomic goals[64].

(i) Fiscal Sustainability

Section 4.1.3 noted concerns about indirect fiscal dominance during the early years of IT adoption and the efforts made by the Philippines government to mitigate this situation, thereby better meeting the requirements for an IT framework in the 2000s. Meanwhile, this section focuses on recent government fiscal issues and their implications for the BSP's independence within the IT framework, especially amid global shocks.

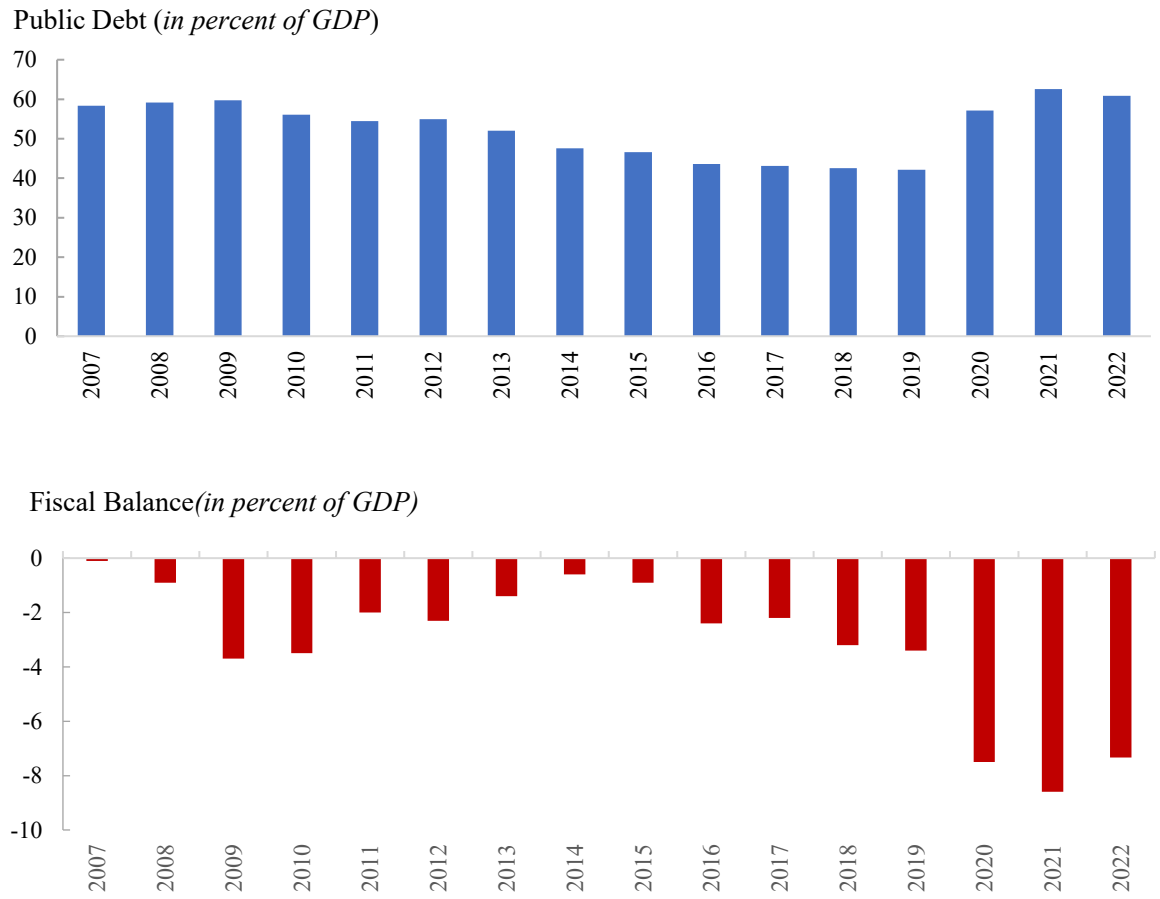
Excluding the COVID period, the Philippines generally maintained the budget deficit and public debt at a moderate level, even amid the shocks of 2008-2009, thereby ensuring the independence of monetary policy. Specifically, in response to global oil and commodity price shocks in 2008, the government enlarged the subsidy program on rice prices and conducted measures to provide temporary relief for vulnerable industries. Also, fiscal stimulus packages were launched in 2009-2010 to address the economic downturn due to the GFC, aiming to revive its economic growth (Manasan, 2011). Consequently, the budget deficit increased rapidly but remained at a reasonable level of 3.7% of GDP and 3.5% of GDP in 2009 and 2010, respectively, thanks to fiscal discipline built in previous years (i.e., the deficit in 2007 was only 0.1% of GDP). Subsequently, the government began withdrawing fiscal stimulus and prioritizing fiscal sustainability. From 2011 to 2019, the fiscal deficit ranged reasonably between 2% and 3.4%, while public debt stood at approximately 40-50% of GDP.

However, the response to the severe impact of COVID-19 led to a significant increase in budget deficit and public debt in the Philippines for three consecutive years from 2020 to 2022, raising concerns about the re-emergence of financial dominance observed during the early stages of IT

[63] See more details in Chapter 2.
[64] However, this section will not discuss in detail the administered-price policy in the Philippines, unlike the cases of Thailand and Indonesia. This is because the proportion of administered-price or non-market-based items in the Philippine CPI basket is relatively small, accounting for approximately 6% (Guo et al., 2019).

adoption. The budget deficit in 2020, 2021, and 2022 reached 7.6%, 8.6%, and 7.3% of GDP, respectively. This situation is more challenging compared to Thailand and Indonesia, where fiscal deficits, although significant during the COVID period, quickly fell below 3% by 2022. Moreover, the public debt of the Philippines reached relatively high levels of 62.58% and 60.9% in 2021 and 2022, respectively.

Figure 5.26. Public Debt and Fiscal Position in the Philippines



Source: Bureau of the Treasury, Philippines; Author's illustration

Furthermore, the consecutive sizeable fiscal stimulus packages related to COVID-19, some of which have not been lifted, have accelerated aggregate demand during the post-COVID period (IMF, 2022c). While this contributed to a rapid economic recovery from -9.52% in 2020 to 5.7% in 2021 and 7.6% in 2022, it has also intensified the already high inflationary pressures resulting from global supply shocks in 2022. Besides, the lack of clear statutory fiscal rules, such as a defined public debt ceiling, may have reduced government discipline in ensuring fiscal sustainability[65] (IMF, 2022c). Additionally, the persistently high government debt and deficits

[65] Specifically, the Philippines only has an internal or implicit fiscal rule without specific legalization.

exert indirect pressure on the BSP's interest rate policy due to the risk of government insolvency (Dakila Jr, 2022).

Against this backdrop, it is crucial to prioritize stronger revenue mobilization and implement cost-effective and targeted government spending to regain fiscal space, thereby achieving fiscal consolidation. Additionally, further strengthening of the government's fiscal discipline via legislation and more stringent regulations on direct financing of the BSP to the government are needed to ensure the effectiveness of monetary policy under IT. Looking ahead, prioritizing fiscal sustainability remains essential (IMF, 2022c).

(ii) Coordination between Fiscal and Monetary Policies

Regarding coordination between fiscal and monetary policies, the Development Budget Coordination Committee (DBCC) serves as the primary body for policy coordination, with the BSP being a resource organization for the DBCC. The BSP provides background information on monetary and financial policy and shares its views on economic changes. In addition to formal policy coordination procedures, the BSP's Governor, the Secretary of the Department of Finance, together with core officials from their respective institutions conduct monthly informal discussions. The sessions serve as an extra forum for debating fiscal performance and its effect on the coordination of monetary policy and fiscal policy (Guinigundo, 2012). In practice, the empirical evidence suggests a positive interplay between monetary and fiscal policy during the GFC, with both the BSP and the government coordinating their policy activities to avoid policy sterilization (Guinigundo, 2012). As a result, inflation returned under control, falling from 8.3% in 2008 to 4.2% in 2009 and 3.8% in 2010, and economic growth rebounded from 1.4% in 2009 to 7.3% in 2010.

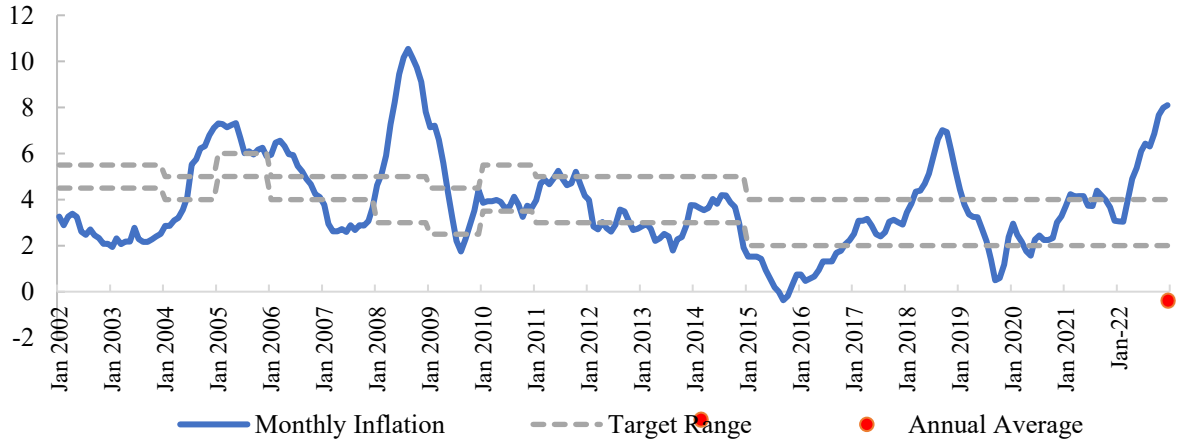
During the COVID period of 2020-2021, the government and the BSP implemented a combination of loose fiscal and monetary policies to revitalize the economy (BSP, 2021). Particularly, the BSP implemented accommodative monetary measures, such as reducing interest rates by a total of 200 basis points and lowering the reserve requirement ratio, while conducting various measures to provide financial assistance to the government, including remitting dividends, granting provisional advances, and purchasing government securities. By the end of 2021, the BSP injected PHP 2.2 trillion into the economy through monetary tools and extraordinary measures, equivalent to 12.1% of the country's GDP (Dakila Jr, 2022). As a result, the economy began to experience a recovery in 2021.

However, the post-COVID period has posed challenges in coordinating government and central bank policies as the objectives of fiscal and monetary policies begin to diverge, particularly in the face of significant inflationary pressure in the Philippines. As mentioned earlier, this circumstance calls for the restoration path of fiscal discipline by implementing more targeted and effective measures. Additionally, tightening the government's fiscal policy would support the BSP's tight monetary policy in curbing inflation, thereby easing the tradeoffs between output and inflation and safeguarding the external position. In other words, it is necessary to strengthen coordination between the government and BSP to jointly respond swiftly and establish appropriate macroeconomic policies amid the prevailing global uncertainty.

5.3.5. Performance under the IT regime

Similar to Indonesia, inflation in the Philippines during the initial years of IT adoption was characterized by volatility, primarily driven by global shocks such as surges in global oil prices in 2004-2005 and commodity price shocks in 2008. Consequently, the BSP faced challenges in meeting the inflation targets. However, there was a notable improvement in the BSP's inflation performance from 2010 to 2017, as illustrated in Figure 5.27. Except for a few years of inflation below the target range (i.e., in 2015 and 2016), mainly influenced by reduced food and energy prices, the BSP generally maintained well-controlled inflation within the target range. Nevertheless, inflation rates were notably high in 2018 and 2022, significantly exceeding the pre-announced targets.

Figure 5.27. Actual vs. Target inflation in the Philippines



Source: IMF, the BSP

More specifically, Table 5.17 shows the underlying factors of not accomplishing the targets. Accordingly, it can be observed that the BSP's failure to achieve the inflation target primarily

originates from supply shocks, including both international factors (e.g., global oil and commodity price shocks) and domestic factors (e.g., weather-related disruptions in the food supply, low agricultural output, and food security issues). These shocks then spread to the second-round effects, resulting in elevated inflation. In fact, these cases are covered by the "exemption clauses" in the Philippines' IT framework, which allow for acceptable deviations from the BSP's targets. However, based on Indonesia's experience, Philippine authorities could improve inflation performance amid supply shocks. Indeed, in addition to oil price concerns, the surge in inflation in the Philippines (e.g., in 2018 and 2022) was also attributed to inadequate domestic food security, with food and energy accounting for 52% of the CPI basket (Guo et al., 2019; IMF, 2022c). Hence, addressing these issues requires government coordination in enhancing agricultural labor productivity, improving distribution and logistics, and investing in infrastructure to boost the domestic supply of goods and mitigate inflationary pressures from the supply side. In other words, this underscores the importance of government in implementing these policies, along with addressing the fiscal matters mentioned in Section 5.3.4.3. In fact, the year 2019 marked the enactment of the Rice Tariffication Law, which abolished quantitative restrictions and reduced tariffs on rice imports, thereby facilitating low rice prices. Additionally, the authorities implemented non-monetary measures to mitigate inflationary pressures, such as the relaxation of import restrictions on fish and pork in 2021 (IMF, 2022c). However, in the medium and long term, more coordination of the government on structural policies (as mentioned above) would effectively solve the problem of inflationary pressure related to domestic food supply.

Table 5.17. Inflation Achievement in the Philippines since IT adoption

Time	Target (%)	Actual Inflation	Achievement	Influencing Factors
2002	4.5-5.5	2.72	Miss (below target)	A slowing in food inflation, and benign demand-side inflation pressures.
2003	4.5-5.5	2.29	Miss (below target)	A weak demand, soft labor conditions, the abatement of the El Nio phenomenon, and a drop in world oil prices
2004	4.0-5.0	4.83	Achieve	
2005	5.0-6.0	6.52	Miss (above)	Consumer prices continued to climb, especially for food, energy, and transportation. The global oil price hike caused increases in domestic petroleum prices, revisions to the minimum wage, and growth in transportation fees and utility charges. El Nio's dry weather harms agricultural productivity.

Time	Target (%)	Actual Inflation	Achievement	Influencing Factors
2006	4.0-5.0	5.49	Miss (above)	Higher world oil prices
2007	4.0-5.0	2.9	Miss (below target)	Price stability for main food items, good supply conditions, especially agricultural productions The firm peso tempered the effect of rising global commodity prices, such as oil and food, on domestic prices in the second half of the year.
2008	4.0+/-1	8.26	Very wide miss (above)	The combination of global and supply-side factors (e.g., the sharp increase in worldwide oil and food commodity prices has led to higher fuel and domestic rice prices). Longer supply shocks influenced the wage and price-setting behavior of firms and families; inflation expectations also increased.
2009	3.5+/-1	4.2	Achieve	
2010	4.5+/-1	3.8	Achieve	
2011	4.0+/-1	4.6	Achieve	
2012	4.0+/-1	3.2	Achieve	
2013	4.0+/-1	3.0	Achieve	
2014	4.0+/-1	3.60	Achieve	
2015	3.0+/-1	0.67	Miss (below target)	Falling petroleum prices and abundant food supplies
2016	3.0+/-1	1.8	Miss (nearly achieve)	Lower energy and food prices.
2017	3.0+/-1	2.85	Achieve	
2018	3.0+/-1	5.2	Wide Miss (above)	Weather-related food supply disruption, higher electricity rates. Increases in food and energy prices.
2019	3.0+/-1	2.6	Achieve	
2020	3.0+/-1	2.39	Achieve	
2021	3.0+/-1	3.93	Achieve	
2022	3.0+/-1	5.82	Wide Miss (above)	High demand in the post-COVID period, high global energy and food prices because of supply bottleneck caused by the Russia-Ukraine War, and domestic food supply issues.

Source: BSP, Author's compilation

Besides, although inflation increased largely due to supply shocks (both international and domestic factors) combined with increased aggregate demand due to economic stimulus

packages (e.g., in 2022), it was also partly due to insufficient policy response of the BSP. Specifically, for 2018, the empirical analysis reveals that inflation was also caused by demand factors, preeminently associated with a relatively accommodative monetary policy (Guo et al., 2019). Accordingly, model estimates indicated that the adjustment of interest rates lags behind the pace suggested by the central bank's interest rate rule under IT, implying that the BSP delayed its response to shocks in 2018 (Guo et al., 2019). Meanwhile, in the case of 2022, even though the BSP raised interest rates by a total of 350 basis points in 2022, the real interest rate is still close to zero, implying a still accommodative monetary policy, which contributes to inflation development becoming more persistent[66] (IMF, 2022c). At the same time, this suggests that a supply shock, initially viewed as a temporary factor causing inflation and could be ignored, can transform into a persistent issue when inflation levels are already high due to the rapid surge in demand following the COVID pandemic. In this context, it becomes imperative for the BSP to implement a tighter monetary policy, considering the existence of second-round effects of shocks.

However, compared to before IT, a notable remark of the Philippines was attaining lower and more stable inflation, accompanied by higher economic growth (as shown in Table 5.18). In particular, the average inflation after IT adoption was 3.79%, significantly lower than in the pre-IT period of 8.48%; the standard deviation of inflation (covering turbulent periods of the GFC, COVID-19) was more than halved to 2.01% from 4.15%. At the same time, the average economic growth in the Philippines increased significantly compared to the previous period, from 2.91% to 5.04%. These results imply that good inflation performance under IT did not harm economic growth. During the COVID period in 2020, economic growth was low due to the impact of the pandemic. However, economic growth picked up again in 2021 and 2022.

Table 5.18. Performance in the Philippines under the IT regime

Philippines	Inflation		GDP growth	
	Before IT	After IT	Before IT	After IT
Average	8.48	3.79	2.91	5.04
Standard Deviation	4.15	2.01	2.2	3.66

Source: Author's calculation

Note: Before IT: 1990-2001, After IT: 2002-2022.

[66] The IMF estimates the real neutral rate for the Philippines to be around 1-2 percent (IMF, 2022c).

In summary, although there have been substantial improvements in macroeconomic outcomes, particularly in inflation, since the implementation of IT in the Philippines, continued efforts by the BSP and enhanced cooperation of the government will contribute to further advancements in achieving the inflation target, thereby helping to bolster the credibility of the IT framework.

5.4. Some Observations and Lessons

After studying the transition and development of the IT framework in three Southeast Asian countries, the following observations can be drawn.

5.4.1. Motivation for IT

In general, the main purpose of moving to the IT framework in the three Southeast Asian countries is to find an effective anchor for monetary policy. This is particularly relevant in the context of applying a flexible exchange rate policy after the AFC, along with the diminishing effectiveness of the monetary targeting strategy.

Specifically, before 1997, Thailand and Indonesia followed a multiple-objective monetary policy with a pegged EX regime (although Indonesia started widening the exchange rate band in 1992). However, the AFC of 1997, caused by currency speculation stemming from the liberalization of capital flows and the fixed exchange rate regime, compelled Thailand and Indonesia to float their currencies and adopt monetary targeting policy. Meanwhile, the Philippines had already implemented a floating exchange rate policy and monetary targeting before the crisis. However, given the financial deregulation and innovation, monetary targeting became increasingly ineffective in all three countries (Inoue et al., 2012). Faced with that situation, the Philippines began modifying its monetary targeting from 1995 to 2001, shifting the focus to price stability rather than strict money aggregates. However, the difficulty in keeping inflation stable due to supply shocks and unstable money demands urged them to undergo further drastic reforms in the monetary policy framework. Likewise, Indonesia and Thailand also sought a new effective anchor for monetary policy beyond monetary targeting. In the end, they decided to switch to an alternative regime - Inflation targeting. So far, despite certain difficulties in IT implementation, this framework has brought these countries clear benefits with lower and more stable inflation, combined with sustainable economic growth for many years.

Therefore, emerging countries facing challenges similar to those encountered by the three Southeast Asian nations should contemplate implementing an IT framework. This holds

particularly true in the context of increasing global integration, which necessitates exchange rate flexibility, while the effectiveness of the monetary targeting regime may be reduced. Moreover, with the resurgence of inflation risks in recent years, the IT framework's firm commitment to price stability, transparency, and high accountability would enhance the credibility of central banks (Villar, 2023). This, in turn, would bolster monetary policy effectiveness.

5.4.2. Lessons in preparing for and introducing an IT framework

To prepare for an IT framework, three Southeast Asian countries prioritize the improvement of core prerequisites[67]. These prerequisites involve establishing a legal framework that guarantees the instrument independence of the central bank, prioritizing inflation objectives both in law and in practice, and limiting fiscal dominance to ensure the effectiveness of IT. In addition to the above issues, this section summarizes the other work undertaken during the preparatory phase and immediately after the introduction of IT to enhance successful IT adoption in these countries. These experiences serve as valuable lessons for other emerging countries.

(i) Develop the factors to support effective monetary policy under IT

Firstly, the central bank should establish a dedicated policy-making body or specialized agency responsible for managing monetary policy and controlling inflation, thereby strengthening governance within the IT framework. For instance, Thailand launched a Monetary Policy Board shortly before implementing IT, the Philippines Central Bank formed a Monetary Board in 2000, and Indonesia has a Board of Governors for monetary policy decisions; Indonesian authorities also instituted Inflation Task Forces from the central to the local level in 2005. These agencies hold regular meetings to facilitate effective decision-making and coordination within the IT framework.

Secondly, the central bank should prepare a key policy rate and an interest rate corridor to regulate market interest rates, which serves as the primary operating mechanism of the IT regime. Particularly, Bank Indonesia officially adopted a full-fledged IT regime when it switched from using base money as its operating tool to BI's rate in 2005. In the case of Thailand and the Philippines, their central banks decided to use repo rates as key tools for IT adoption right from the preparatory stage. For Thailand, BOT used the 14-day repo rate in the early stage of IT. The Philippines, similarly, adopted the overnight (reverse) repurchase rate to signal

[67] Details in Chapter 4.

monetary policy stance under IT. Concurrently, the central banks gradually established interest rate corridors through standing facilities to enhance the operational efficiency of the IT framework. Additionally, they utilized OMOs and other tools to complement the policy rates.

Thirdly, the central bank needs to enhance the transmission efficiency of monetary policy both prior to the introduction of IT and during its implementation by reforming the banking systems and financial market. Recalling the case of Thailand in the early years of IT adoption, the country had to deal with a weak banking system coupled with a severe NPLs problem, which affected the transmission of monetary policy. These difficulties also occurred with the Philippines and Indonesia due to the AFC of 1997. Later, they established (state-owned) Asset management agencies to solve NPLs (e.g., in Thailand) and introduced new financial tools to develop financial markets (e.g., in Thailand and the Philippines), strengthening the efficiency of the transmission mechanism of policy interest rates. This is necessary because the policy rate is not only the signal of the monetary policy stance but also the core tool of the IT framework.

Fourthly, considering the risks associated with pursuing two anchors simultaneously (i.e., exchange rate and inflation) during the transition to an IT framework (Schmidt-Hebbel and Carrasco, 2016), it is important to gradually increase the flexibility of the exchange rate policy. For example, Bank of Indonesia (BI) expanded its exchange rate tolerance band in 1992 and subsequently adopted a floating regime without a predetermined path. Moreover, BI only conducts sterilized FX interventions to support the stability of the financial and monetary systems. Similarly, in Thailand, under the managed-floating exchange rate regime, and in the Philippines, under the floating regime, central banks primarily participate in the FX market during instances of excessive movements to maintain order and stability but do not target any specific path of the exchange rate. Additionally, efforts should be made to develop FX markets and promote hedging instruments that protect businesses against exchange rate volatility, such as forwards tools. For instance, the Bank of Thailand has developed the FX ecosystem to reduce hedging costs associated with exchange rate fluctuations, thereby supporting its flexible exchange rate regime.

(ii) Prepare technical and operational issues to introduce IT

To officially introduce an IT regime, the central bank must ensure the key components of a framework for IT[68], particularly those related to technical and operational issues.

[68] It is important to recall that the elements of the IT framework are not identical to the prerequisites of IT, even though it can be easy to confuse them. Specifically, as mentioned in Chapter 2, the critical elements of an IT

Accordingly, the monetary authorities must take the following steps.

Firstly, the authorities must determine the specifics of the inflation target, including the measurement approach, whether it is a target point or a target range, and the target time horizon. In this regard, Indonesia initially faced difficulties in determining its inflation target and policy time horizon during the transition phase to IT. More precisely, Bank Indonesia changed the specification of the inflation target many times before consistently applying it as it does today. Specifically, the initial inflation target was determined solely by the central bank and was indicated by core inflation, in the form of a target range with a band of 1% and a short time horizon of one year. Subsequently, there was a shift to using headline inflation as the primary indicator. Besides, the inflation target has been expressed by a point target with a tolerance band of +/- 1 percentage point (pp), and the policy horizon extended to a medium-term target of about three years. Additionally, the target has been jointly set by the government and the central bank. This change is a significant turning point in the target-setting process under Indonesia's IT framework, and the outcomes demonstrate the appropriateness of this change. Similarly, Thailand's determination of the inflation target was changed from core inflation to headline inflation and from a target range to a point target with a band of +/-1.5 pp in 2015[69]. In the same vein, the BSP (Philippines) also moved from a range to a point target with a +/-1 pp band in 2008. Regarding the target horizon, after several adjustments, all three countries currently choose medium-term targets. This is appropriate because the time lag effect of monetary policy is usually from one to two years. Additionally, the medium-term inflation target demonstrates the IT framework's flexibility as it allows the central bank to temporarily deviate from the target in response to shocks, without being considered a breach of its commitments. As such, according to the experience of three IT Southeast Asian countries, numerical inflation targets mutually set by the government and the central bank, measured by headline CPI, expressed in

framework are the characteristics that determine whether a country is adopting IT, including (i) announcing a clear inflation target, (ii) demonstrating commitment to price stability, (iii) making decisions based on a set of information, with inflation forecasts serving as the implicit intermediate objective, (iv) transparency, and (v) establishing enhanced accountability.

On the other hand, preconditions refer to the factors that should be in place before introducing an IT framework or from its inception. These preconditions are critical in enhancing the successful adoption of a new regime (IT), relevant to emerging countries. These preconditions encompass (i) central bank instrument independence, (ii) prioritizing the inflation target over other objectives such as exchange rate stability and economic growth, both in law and in practice, and (iii) avoiding fiscal dominance. Other supportive conditions such as (i) fostering a sound and developed financial market, (ii) possessing adequate inflation forecasting and technical capacity, (iii) enhancing monetary policy transmission, etc.

[69] However, from 2020 to 2022, under uncertainties of the domestic and global environment, Thailand has used a target range to enhance the flexibility of its IT framework.

a mid-point with a band (or a target range), along with a medium-term policy horizon, is reasonable.

Secondly, the central bank should establish forecasting models for inflation and macroeconomic variables to serve the policy-making process in a forward-looking approach instead of operating monetary policy passively and in a backward-looking strategy. The forecasting model may not need to be complicated in the early days of IT adoption but should be upgraded over time. For example, in the Philippines, the BSP initially implemented a semi-IT policy based on current inflation in the transition period, but the central bank quickly developed a basic forecasting system to conduct monetary policy based on forecasted inflation. Indonesia and Thailand also established primitive forecasting models to accommodate IT implementation in the early years, after which they continued to upgrade their forecasting models.

Thirdly, the central bank needs to set up basic channels for transparency and accountability, as this is essential to strengthening the central bank's credibility when implementing a new monetary policy framework, thereby helping anchor inflation expectations. In all three Southeast Asian countries, immediately since announcing IT adoption, they published quarterly inflation reports and press releases to enhance transparency. After that, reports and publications are continuously improved and diversified from weekly newsletters, and quarterly economic and inflation reports to annual reports. The content and quality of information are also expanded and improved, from the development and forecasts of inflation and output to the issues of exchange rates and financial system stability. In terms of accountability, the central bank laws of these countries (except for Thailand until 2008) stipulated the central bank's reporting obligations to Parliament and the public from the early days of IT. Moreover, they also must issue Open letters to the government if they do not meet the set goals. Furthermore, it is worth noting that in the IT framework of the Philippines, there are clauses for exemptions for BSP when the inflation target is missed, which mainly relates to supply shocks such as bad weather, oil price volatility, or natural disasters. However, the utilization of exemption clauses can carry the risk of diminishing the central bank's motivation and accountability in attaining the predetermined inflation target, especially if the conditions and terms of the exemption clause are unclear and excessively relied upon.

5.4.3. Lessons in IT implementation

Once the above fundamentals are in place, the central bank can announce the adoption of the IT framework. Even if the fulfillment of the above issues is still limited, emerging and

developing countries can start the introduction of an IT framework but must firmly commit to a specific plan to improve them throughout the IT implementation process. Besides, the experience of the three Southeast Asian countries has shown the continuous development of the IT framework in practice and provided worthy lessons on effectively implementing this framework in the context of a constantly changing global environment.

Firstly, the reality shows that the IT frameworks of countries are increasingly being upgraded to enhance operational efficiency far beyond the initial stage. These developments include the establishment of clear and consistent inflation targets, improvements in the operating framework through upgrading key policy rates, and the refinement of the interest rate corridor (e.g., changing from the 14-day repo rate to the 1-day Bilateral Repurchase rate since 2007 in Thailand; shifting from BI rate to the BI 7-Day (Reverse) Repo Rate since 2016 in Indonesia; establishing a new interest rate corridor since 2016 in the Philippines). Furthermore, there have been advancements in technical aspects, such as adopting dynamic stochastic general equilibrium (DSGE) models, integrating macro simulations, and policy mix responses for enhancing the effectiveness of policy-making decisions. Additionally, efforts have been made to promote transparency and accountability, with communication playing a vital role as an important tool within the IT framework in the digital age. These enhancements have contributed to increasing the effectiveness of monetary policy under the IT regime.

Secondly, while price stability remains the primary goal, certain refinements have been made in implementing the IT framework to align with the evolving global environment. In this regard, all three countries have incorporated the financial stability objective alongside the price stability target within the IT framework after the GFC. Moreover, coordination among central bank policies has been strengthened to address global shocks. Indeed, the experience from the GFC demonstrated the value and relevance of crucial IT elements, such as a forward-looking strategy and a high level of governance, transparency, and accountability to withstand the shocks. However, it also highlighted the need to integrate financial stability considerations within the IT framework. To address this, the central banks of three Southeast Asian countries have adopted a combination of macroprudential and monetary policies to mitigate risks to financial stability. They have also implemented occasional FX interventions and introduced capital flow measures to manage excessive exchange rate volatility, thereby supporting overall macroeconomic stability. These developments can be observed in Indonesia's transition from a standard IT framework to an enhanced IT framework, the Philippines' flexible IT framework, and Thailand's integrated policy framework. In particular, the challenges encountered during

the COVID-19 and post-COVID periods have further underscored the importance of closely coordinating between policies to achieve the goals within the IT framework.

Thirdly, sticking to the inflation target amid uncertainty is vital to prove the central bank's unwavering commitment and effort toward price stability, thereby better-anchoring inflation expectations under IT. Accordingly, when dealing with adverse shocks pushing inflation, the central bank should be cautious about repeatedly increasing the pre-announced inflation target level and overusing exemption clauses. For instance, Bank Indonesia raised the target level sometimes in response to shocks (e.g., in 2006, 2007, and 2008). Even if the costs of such actions have not been thoroughly studied, there may be costs related to losing policy credibility and interrupting the path toward low and stationary goal levels (Schmidt-Hebbel and Carrasco, 2016). Subsequently, Bank Indonesia drew valuable lessons from that experience by maintaining its pre-announced inflation target in the face of high inflation during the post-COVID period. Likewise, the central banks of Thailand and the Philippines have also held their inflation targets amid global uncertainty in 2022 and 2023. However, the Philippines central bank used exemption clauses to deal with the problem of missing targets in the presence of adverse shocks. In fact, for countries just starting to apply IT with a weak capacity for achieving goals, it is possible to consider prescribing exemption articles like in the Philippines. Nevertheless, exemption clauses must be reasonable because too many prescribed exemptions can undermine the strong commitment to the inflation target and the public trust in the IT framework. In such situations, countries can consider a more suitable approach, such as slightly expanding the time horizon, to enhance the likelihood of achieving the target. Furthermore, any modifications should be conveyed to the public clearly to maintain credibility and keep anchoring inflation expectations.

Fourthly, lessons learned in the post-COVID period highlight the need for central banks to exercise greater caution in dealing with supply shocks, as these shocks can pose a broad-based threat to price stability within the IT framework. Particularly, what was initially perceived as temporary high inflations caused by successive supply shocks has transformed into broader and persistent trends. While the central banks of Indonesia and Thailand have gradually controlled inflation quite effectively, the central bank of the Philippines has encountered numerous challenges. Accordingly, despite the increase in interest rates by the BSP, it appears that their monetary policy stance still falls short of being sufficiently tight to prevent the second-round effects of supply shocks (IMF, 2022c). Therefore, when confronted with future supply shocks,

the timely and aggressive reaction of monetary policy plays a pivotal role in averting persistent inflation and upholding the credibility of the IT framework.

Fifthly, recent shocks have also emphasized harmonizing government policies to complement the central bank's monetary policy within the IT framework. Accordingly, although temporarily high budget deficits and public debt were accepted during the crisis[70] (e.g., the pandemic) to support the economy, restoring fiscal discipline after the economy recovers is essential to avoid affecting the central bank's independence. The governments of Thailand and Indonesia have effectively achieved this. Meanwhile, the Philippines faces the challenges of high public debt and persistent budget deficits in the post-COVID period, which need to be overcome. Additionally, in the context of escalating inflationary pressures, withdrawing the government's COVID-related fiscal stimulus packages and implementing more targeted policies will support vulnerable groups without creating further inflationary pressure for the central bank. Moreover, the success in controlling inflation in Indonesia through the establishment of central and local inflation task forces reveals that the government's structural policies aimed at increasing labor productivity and supporting food supply and distribution may ease supply-side inflation pressure, thereby indirectly assisting the central bank in achieving the inflation target under IT.

In the future, the challenges ahead due to increasing global integration, coupled with massive capital flow fluctuation, the evolution of digital currency, and structural changes may require further reforms for the operation of the IT framework in Southeast Asian countries, as well as the IT framework of emerging and developing countries in general.

To summarize, the above are generic lessons for emerging and developing countries, including Vietnam, in preparing, establishing, and implementing the IT framework. Meanwhile, the specific lessons for Vietnam in these matters will be further analyzed in the following chapters, based on assessments and comparisons of Vietnam's institutional conditions, monetary policy framework, and performance with that of three IT Southeast Asian countries.

[70] All three Southeast Asian countries temporarily relaxed fiscal rules in response to the Covid pandemic.

Chapter 6. Comparison of monetary policy framework in Vietnam with three IT Southeast Asian countries

Chapter 5 draws insights from the experiences of Southeast Asian countries, emphasizing the significance of continuously improving macroeconomic and institutional conditions, as well as upgrading elements within the IT framework after the introduction of IT. This process is critical in enabling the IT framework to adapt to changing global conditions and enhance its effectiveness. Therefore, while Vietnam's current conditions may allow the introduction of a basic IT framework, ongoing efforts are required to strengthen its effective implementation.

Building upon this concept, this chapter undertakes a comparative analysis, examining Vietnam's existing monetary policy framework and related issues in comparison to the relatively mature IT frameworks of other Southeast Asian countries. The objective is to identify the gaps that Vietnam must address to deploy IT in the years ahead. These findings will be the basis for formulating a policy roadmap toward IT for Vietnam in Chapter 7.

Specifically, the issues for comparison will encompass the core elements of an IT framework and other relevant factors necessary for its effective implementation. These issues will be categorized into main clusters, including legislation and central bank, monetary policy framework, monetary policy performance, and policy coordination.

6.1. Legislation for Central Bank Mandate and Independence

The issue of the central bank's objectives and independence was briefly mentioned in Chapter 4. Accordingly, Vietnam's condition in this respect was better than Thailand's at the time of IT introduction and was relatively reasonable compared to Indonesia and the Philippines in practice. However, this section shows these issues in Thailand, Indonesia, and the Philippines have improved significantly over time. Therefore, Vietnam should enhance this matter as well after the IT introduction.

(i) Central Bank Mandate

Although the legal framework for the central bank in Thailand at the IT outset was weaker compared to Vietnam, considerable changes have been conducted since 2008. Accordingly, the

existing Bank of Thailand Act explicitly mandates the price stability objective[71], providing an important legal framework for the implementation of IT.

Meanwhile, the Philippines in 2019 and Indonesia in 2023 have officially incorporated the goal of financial stability alongside price stability through changes to their legal central bank mandates. While the central bank mandates in these countries have expanded, they remain more focused compared to Vietnam, where the central bank mandate is relatively broad, as indicated in Table 6.1. Specifically, in addition to the currency value stability, the SBV is currently responsible for the efficiency and safety of the national payment system, the security of banking operations, and the system of CIs, and helps to foster socioeconomic growth in line with the socialist orientation (Article 4.1 of the Law on the SBV, 2010).

Furthermore, although the central banks of Indonesia, Thailand, and the Philippines also currently pursue other goals under the flexible IT regime (e.g., financial stability), their legislation clearly states that the inflation objective/ price stability is the overarching objective of their monetary policies[72]. That means only when inflationary pressures are benign will they implement accommodative monetary policy to support other goals. Therefore, in Vietnam, due to the broad mandate of the SBV, it becomes imperative to establish a more explicit legal specification that designates the inflation target as the primary objective of monetary policy under the upcoming IT. This approach will also support sustained economic growth and financial system stability.

(ii) Central Bank Independence

Central bank independence may encompass various dimensions[73]. However, given the primary focus of this dissertation on the IT framework, the study will concentrate on two key aspects of independence extensively discussed in the IT literature: instrument autonomy and goal independence.

[71] In addition to price stability, financial stability is mentioned as one of the BOT tasks on its website, Inflation Report, and Financial Stability Report.
[72] As mentioned, three IT central banks in Southeast Asia have increasingly focused on ensuring financial system stability since the GFC. However, the accomplishment of this mandate primarily relies on the implementation of macroprudential policy in conjunction with micro-prudential policy and/or monetary policy. Therefore, maintaining price stability remains the paramount objective of monetary policy within the flexible IT framework.
[73] Practically, at least, central banks need to have freedom in choosing and conducting policy instruments (instrument independence) to achieve the pre-announced goals (i.e., inflation target) under the IT regime (Jahan, 2012).

Table 6.1. Central Bank Mandate and Independence in Vietnam, Indonesia, the Philippines, and Thailand

Legislation	Vietnam	Indonesia	Philippines	Thailand
CB's Mandate	Achieve currency value stability; assures the safety of banking operations and the system of credit institutions; assure the safety and effectiveness of the national payment system; and contribute to accelerating socio-economic development along the socialist orientation.	Achieve and maintain the rupiah stability and preserve financial stability.	Maintain price stability; offer proactive leadership in delivering a solid financial system conducive to the economy's sustained growth.	Maintain monetary stability, financial institution system and payment systems' stability.
Primary Monetary policy objective	Less clear	Price stability	Price Stability	Price Stability
Instrument Independence	Partly, shared with the Prime Minister	Yes (Law of 1999, 2004)	Yes (Republic Act in 1993)	Yes (since 2008 by the amended BOT Act)
Goal Independence (Setting Targets)	The SBV proposes the target to the government, then the government submits it to the National Assembly for approval.	Before 2004: Full autonomy Since 2004: The target set by the government, after the consultation with BI.	Needs intergovernmental committee approval for the inflation target.	Since 2009, needs Minister of Finance and Cabinet approval for inflation target

Source: Author's compilation

In terms of instrument independence, Chapter 4 demonstrated that the State Bank of Vietnam's instrument autonomy is more clearly regulated by law compared to the Bank of Thailand when Thailand introduced IT in 2000. However, as indicated in Table 6.1, the amendment of the Bank of Thailand Act in 2008 has resulted in greater independence for the BOT than the SBV. In the meantime, the statutory central bank independence of the Philippines and Indonesia since IT

adoption has always surpassed that of Vietnam. Therefore, Vietnam needs to undertake legal and institutional reforms to grant its central bank greater instrument independence. This will promote effective and timely responses of the SBV within the IT framework.

Regarding goal independence, legislative adjustments have been implemented in Thailand and Indonesia. Specifically, starting from 2004 in Indonesia and 2009 in Thailand, establishing inflation targets involves a collaborative process between the central bank and the government. Likewise, in the Philippines, the joint determination of inflation targets by the government and the central bank has been practiced even before the initiation of IT. It is worth noting that Vietnam shares a similar arrangement with these countries in terms of setting inflation targets. Consequently, there is no need for Vietnamese authorities to make changes in this regard. In fact, jointly setting inflation targets by governments and central banks is deemed suitable in emerging IT countries.

In short, although the regulation regarding authorities for setting inflation goals in Vietnam aligns with the current legislation of three Southeast Asian countries, the instrument independence of the SBV is comparatively weaker. Consequently, it is crucial to amend the law to vest full operational autonomy to the SBV, especially in preparation for the forthcoming implementation of IT.

6.2. Monetary Policy Framework

Table 6.2 compares the current monetary policy frameworks between Vietnam and three IT Southeast Asian countries. It examines various aspects, including objectives, operational framework, technical capacity, transparency, and accountability, which together form the fundamental components of a basic IT framework.

6.2.1. Objectives and Setting Targets

One of the central aspects of an IT framework is recognition and commitment to price stability as the primary objective (Mishkin, 2000; Ciżkowicz-Pękała et al., 2019). In line with this, the central banks of three IT Southeast Asian countries establish medium-term inflation targets along with annual targets for headline CPI and demonstrate a strong dedication to attaining them. Likewise, the Vietnamese authorities also announced annual inflation targets for headline CPI. However, unlike the clear target range or point target with a tolerance band used by three IT countries, Vietnam often sets its targets in an ambiguous manner, using phrases like “about/ around 4%”. This lack of specificity sometimes leads to confusion regarding whether actual

inflation rates of 4.3% or 4.4% should be considered to meet the target. This matter is not mentioned by the government and the National Assembly. In certain years, although the targets were clearer (e.g., below 4%), the authorities did not specify the lower bound of the target (e.g., whether an inflation rate of 1% would be deemed acceptable or not). In fact, an explicit inflation target specification is needed in introducing an IT framework because it helps increase monetary policy transparency and shape public expectations. Besides, while both forms of a target range and a point target with a symmetric band have been utilized in IT countries, the latter approach is more prevalent due to its clarity and effective communication (Ciżkowicz-Pękała et al., 2019). Therefore, Vietnamese authorities should give due attention to this issue, such as setting a point target with a tolerance band, following the examples of Indonesia and the Philippines[74].

When it comes to intermediate targets, the SBV and the central banks of three Southeast Asian countries adopt different approaches to achieve their final objective, which is the inflation target. Notably, in Vietnam, the SBV employs the growth rate of money supply (M2) and credit as its intermediate targets. In 2012, the SBV started adding the market interest rate as its additional intermediate goal. However, as discussed in Chapter 3, there are certain shortcomings in choosing intermediate objectives in Vietnam due to the unstable relationship between the money supply and the inflation target, as well as the high volatility of the market interest rates. These limitations hinder the efficiency of the SBV's monetary policy, thereby posing difficulties in attaining the final goal. Meanwhile, all three IT central banks consider the inflation forecast as their intermediate targets within the IT framework, and this approach has proven effective in helping them accomplish the inflation goals. Specifically, when the forecast deviates from the target, the IT central banks adjust the policy rates and other tools to align with the desired outcome. However, implementing this approach requires central banks to possess good forecasting capabilities, which Vietnam needs to improve.

Thus, when compared to the three IT Southeast Asian countries, Vietnam's regulations regarding the determination of specific inflation targets and intermediate objectives are found to be inadequate. To solve this problem, clearer provisions for monetary policy objectives are required. Furthermore, enhancing the forecasting capacity of the SBV is of utmost importance to progress toward utilizing inflation forecasts as intermediate targets, as seen in other IT Southeast Asian central banks.

[74] From 2015 to 2019, Thailand also utilized a midpoint target with a tolerance band.

Table 6.2. The current monetary policy framework in Vietnam, Indonesia, the Philippines, and Thailand

	Vietnam	Indonesia	Philippines	Thailand
1. Current Regime	Monetary Targeting (+ implicit EX Targeting)	Inflation targeting (since 2005)	Inflation targeting (since 2002)	Inflation targeting (since 2000)
2. Objectives				
Inflation Targets	**Lack of clarity** National Assembly-approved annual inflation target (2018, 2019: about 4%. 2023: at 4.5%=> ceiling of target. Some years: below 4%) The floor of target: unspecified	**Medium Term** Government-approved inflation target 2018-19: 3.5 % ±1pp 2020-2023: 3.0 % ±1pp	**Medium Term** Government-approved inflation target 2019 -2023: 3.0 % ±1pp	**Medium Term** Government-approved inflation target 2019: 2.5% ±1.5 pp 2020-2023: 1.0%-3.0%
Intermediate Targets	Money Aggregate (M2) and Credit Growth. Since 2012, add "Market interest rate"	BI inflation forecast	BSP inflation forecast	BOT inflation forecast
3. Operational Framework				
Key Policy Interest Rates	Re-financing interest rates, Discount Rate, and Base Rate (unchanged since 2011)– Less effective	BI -policy rate (7-day Reverse Repo Rate)	BSP overnight Reverse Repo Rate	BOT 1-day bilateral repo rate
Interest Rate Corridor System	Implicit (Less effective)	Yes	Yes	Yes
Other tools	Reserve Requirements, Re-financing, OMOs, Exchange Rate, administrative measures	Reserve Requirements, OMOs, Standing lending, and deposit facilities	Reserve Requirements, OMOs, Standing lending, and deposit facilities	Reserve Requirements, OMOs, Standing lending, and deposit facilities

	Vietnam	Indonesia	Philippines	Thailand
4. Technical Capacity	Limited	Good	Good	Good
Forecasting Models	Plan to develop FPAS, but not complete. (Note. The SBV does not specifically disclose current models)	FPAS (Forecasting and Policy Analysis System) (i.e., a core model, which is a DSGE type ARIMBI consisting of 10 key behavioral equations, accompanied by a medium-term model (MODBI), and several small-scale economic structural models)	The inflation forecasting models: The Multiple Equation Model, Single Equation Model, and quarterly Medium-Term Macro-econometric Model Developed a semi-structural forecasting and policy analysis system model in 2012	A system of models: The BOT Macro-econometric Model, a small semi-structural model, a DSGE model, and other different models
Database	Needs to improve	Comprehensive surveys and data collection	Comprehensive surveys and data collection	Comprehensive surveys and data collection
5. Transparency Communication	Need to improve	Good	Improved	Good
Inflation Report	Annual Report No mention of forecasts for inflation and growth ⇨ needs to improve content, frequency	Monthly Monetary Policy Review Quarterly Monetary Policy Report	Quarterly Monetary Policy Report	Quarterly Monetary Policy Report
Press Conference/ Minutes or Highlights of Monetary Policy Meetings	Periodically, two times a year (on monetary policy performance)	Press Conference: 14:00 on the second day of meeting (Each month) Forward guidance	After Monetary Board meeting Publish Highlights of Meeting: One month after meeting date	Press Statement: 14:00 and Press Conference: 14:30 on the day of Meeting Publish Highlights of Meeting: Two weeks after meeting
Public Release of Monetary Policy Stance	Same day	Same day	Same day	Same day

	Vietnam	Indonesia	Philippines	Thailand
6. Accountability	Unclear	Clear	Clear	Clear
Report on MP Operation	Shared with the Government (i.e., Prime Minister directly reports or authorizes the Governor to report to Assembly)	Yes, the quarterly report to Parliament and the public	Yes, periodic reports to the president and Congress, and the public	Yes, biannually report to the cabinet
Public Document or Explanation if Target is Missed	Unclear	Yes, Report to Parliament and the public. Written institutional performance reports	Yes, open letter to the president	Yes, open letter to the minister of finance

Source: Central Banks' Websites, Author's compilation

Note. DSGE = Dynamic Stochastic General Equilibrium; pp = percentage point.

6.2.2. Operational Framework

Under IT, the central banks of Indonesia, the Philippines, and Thailand have continuously improved their operational framework. In particular, they have used key policy interest rates to communicate their monetary policy stance and established an interest rate corridor system to guide the market rates. Meanwhile, Vietnam's current operational framework for monetary policy still has limitations. Specifically, the policy rates of SBV, including refinancing, discount, and base rates, have been ineffective. Moreover, the base rate has been unchanged since 2011, while the links between discount, refinancing, and short-term market rates have been relatively weak[75]. In contrast, the three IT central banks in Southeast Asia have adopted short-term (reverse) repo rates on monetary operations as their core policy rates, which have proven effective in regulating interbank interest rates. Hence, based on the experience of these countries, the SBV needs to redefine its key policy rate for functioning IT adoption.

At the same time, the SBV has not yet established a real interest rate corridor like the central banks of the three IT Southeast Asian countries have done. Specifically, in Vietnam, the discount rate is implied as the floor rate, while the refinancing rate is implied as the ceiling rate to regulate market interest rates. However, these two types of interest rates are both the lending form of the SBV to credit institutions (CIs) and have similar operating features, so they could not form a truly effective corridor. Meanwhile, in all three Southeast Asian countries, central

[75] See Details in Chapter 3

banks use the interest rates of deposit and lending facilities to create the interest rate corridor, combined with deepening financial markets and developing transaction instruments on the open market operations, so they have built effective interest rate corridors to guide market interest rates.

Furthermore, a problem in Vietnam's monetary policy operation is using administrative tools to control market rates. Meanwhile, these instruments are hardly used by central banks in the three IT Southeast Asian countries because they can distort market conditions and hinder the effectiveness of policy rates. In Vietnam, given the undeveloped financial market along with the ineffective policy interest rates, the SBV utilized administrative tools such as ceiling interest rates on deposits for less than 6-month-terms, caps on credit growth for the entire system, and each bank to steer the market rates for years. In fact, the SBV needs to develop the financial market and limit these administrative measures to support the interest rate liberalization in Vietnam, like in three IT countries.

Apart from the differences and limitations, there are also some similarities in using monetary policy tools in Vietnam and other Southeast Asian countries. For example, so far, the most effective tool of the SBV is open market operations (OMOs), which is also the widely used tool of the central banks in three IT Southeast Asian countries to implement policy rates and manage market liquidity. Additionally, the reserve requirement ratio tool is also used by all four central banks in conducting monetary policy. Therefore, like the central banks of Indonesia, the Philippines, and Thailand, the SBV can continue to use and upgrade these tools to supplement policy rates in monetary policy operations under IT.

In general, compared to the three IT Southeast Asian countries, monetary policy tools in Vietnam must be reformed further. More specifically, the SBV needs to gradually eliminate administrative measures while concurrently developing instruments in OMOs, reforming policy rates, and establishing an efficient interest rate corridor. These steps will allow the SBV's monetary policy operations to align with those of three IT central banks. Also, deepening the financial market is necessary to enhance the performance of monetary policy instruments in Vietnam.

6.2.3. Technical Capacity

As discussed in Chapter 5, in three IT Southeast Asian countries, their central banks' technical capacity and forecasting ability were not ideal when they initially implemented IT, but at least

they built basic models for forecasting inflation. Over time, their technical capacity has become relatively comprehensive and improved. In other words, technical competence should be continuously developed during IT application.

Specifically, all three central banks have set up in-depth forecasting systems with core models, primarily based on DSGE types, and established a solid and continuously updated database to enhance the accuracy of forecasting results. Also, they conduct surveys on market inflation expectations and monitor financial market volatility, integrating these factors into their macroeconomic models to make informed decisions. Furthermore, these central banks promote transparency by publishing specific information about the model systems and economic data on their websites and in inflation reports. This allows the public to track and comprehend monetary policy decisions easily.

In this regard, the current technical capacity of the State Bank of Vietnam is still weak compared to that of the three IT central banks in Southeast Asia. In fact, the SBV does not disclose its specific macroeconomic models, but it announces that it is cooperating with the IMF to build a Forecasting and Policy Analysis System (FPAS). Once this model system is completed, SBV's technical capability will be boosted, paving the way for the upcoming implementation of the IT framework. Furthermore, unlike the three Southeast Asian countries, the SBV has not included projections on inflation and other economic indicators in its annual report. Instead, these forecasts are mentioned separately by the SBV, the Ministry of Finance, and the General Statistics Office of Vietnam via press releases. However, their forecast results often were not identical, partly reflecting the limited forecasting capacity and lack of syn of the Vietnamese authorities. For instance, while the Ministry of Finance projected an average CPI increase in the range of 3.37 - 3.87% for 2022, higher than the General Statistics Office's forecast of 3.4% to 3.7%, the SBV estimated an average inflation rate of around 3.7 ± 0.3% for the same period. Such inconsistency can cause challenges for the SBV in making accurate policy decisions to achieve the set inflation target.

Regarding the database, like the central banks of Indonesia, the Philippines, and Thailand, the SBV also publishes data on monetary policy operations on its website (e.g., CPI, exchange rates, interest rates, reserve requirement ratio, and open market operations). However, data on inflation expectations and financial market indices have not been published or collected. Altogether, the SBV should improve its technical capacity and database further in IT implementation to keep up with that of the three IT Southeast Asian central banks.

6.2.4. Transparency and Communication

As mentioned in Chapter 2, transparency and accountability are fundamental pillars of the IT framework as they play a crucial role in establishing the central bank's credibility in conducting monetary policy, ultimately contributing to the success of IT (Ciżkowicz-Pękała et al., 2019). To that end, effective communication by the central bank serves as a valuable tool to anchor inflation expectations, especially during shocks (Warjiyo, 2022).

In this regard, when there is an official change in monetary policy stance, the central bank of Vietnam follows a similar practice to the three Southeast Asian countries' central banks by issuing a press release. However, in the other dimensions, the transparency and communication of the SBV lag behind that of the three IT central banks. For instance, while the central banks of Indonesia, the Philippines, and Thailand release monthly or quarterly inflation reports/monetary policy reports to keep the public and market participants informed about monetary markets and the rationale behind policy decisions, the SBV only releases an annual report. Furthermore, in terms of information quality, the reports from the central banks of Indonesia, the Philippines, and Thailand provide more detailed and specific content than that of the SBV. Specifically, although the reports of all four central banks range from monetary and economic developments, and policy actions to issues of exchange rates and the financial system, the annual report of the SBV does not mention forecasts of inflation and other economic indicators, as well as projected plans to achieve the goals, as found in the reports of the other three central banks.

Regarding press conferences, Bank Indonesia holds monthly press conferences following the Board of Governors Meeting. In Thailand, press conferences occur at 14.30 of the same day, right after the Monetary Policy Committee meetings, held approximately six times a year. The Philippines has quarterly press conferences on Inflation Reports. These central banks also publish Highlights of the monetary board meetings and apply forward guidance (e.g., in Indonesia and Thailand). In contrast, the SBV only holds official press conferences twice a year, indicating delays in communicating information to the public.

Therefore, based on the comparison with the three IT central banks, it is necessary for the SBV to improve the frequency and content of its publications, as well as diversify the information channels for communication. These measures will enable the public and market participants to understand better the monetary policy decisions and directions of the SBV, thus effectively shaping inflation expectations.

6.2.5. Accountability

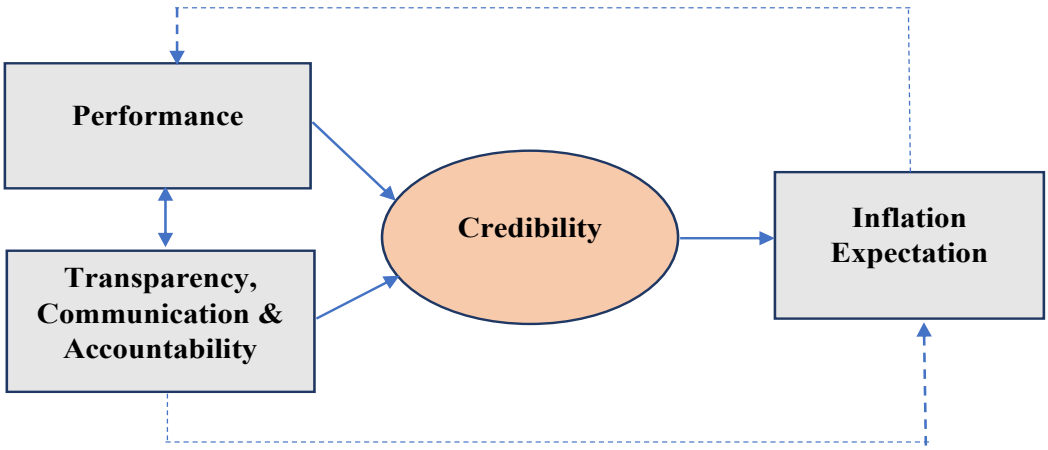
Increasing accountability is an integral part of the IT framework. Furthermore, given the high independence of the IT central banks, high accountability is required to make them attempt to achieve the set goals under IT. In this respect, the accountability of the SBV is weak and less clear compared to that of the three IT central banks. Particularly, the central banks of Indonesia, the Philippines, and Thailand must directly report to the Parliament and the public about their performance and the monetary policy plan to attain the inflation objective. Meanwhile, in Vietnam, the accountability of monetary policy operations is shared by the SBV and the government. More specifically, the Law on SBV of 2010 stipulates that "The Prime Minister directly reports or authorizes the Governor of the SBV to report to the National Assembly on the performance of annual conduct of monetary policy" (Article 40.1, Law on the State Bank of Vietnam 2010). Moreover, if the inflation target is missed, all three Southeast Asian central banks must explain clearly to the public and the Parliament the reasons and the necessary actions to bring inflation back to the target. Furthermore, the Central Bank of Thailand must write Open Letters to the Minister of Finance, and the Central Bank of the Philippines submits Open Letters to the President. Meanwhile, the legislation in Vietnam did not mention this matter.

All in all, the current operational and institutional framework of monetary policy in Vietnam needs to be considerably improved to reach that of the inflation-targeting Southeast Asian countries. However, it is worth recalling that at the time of IT adoption, the above conditions of Southeast Asian countries were not ideal and far behind today, but these countries made great efforts to upgrade their IT framework. Therefore, there is still room for Vietnam to improve the elements of IT during the preparation time and continue developing these fundamental conditions in tandem with IT implementation.

6.3. Monetary policy performance and Credibility

A high level of credibility aids a central bank in effectively conducting monetary policy and vice versa. Especially under IT, given the close link between the central bank's credibility and its ability to shape inflation expectations, a credible central bank can lower the cost of maintaining low and stable inflation and better withstand adverse supply shocks thanks to well-anchored expectations (Ciżkowicz-Pękała et al., 2019). Therefore, the central bank's credibility is crucial in successfully implementing IT.

Figure 6.1. The relationship between the factors affecting the central bank's credibility



Source: Author's illustration

In practice, the credibility of central banks is mainly built up via their performance (e.g., the competence to achieve monetary policy targets) and by effective communication, transparency, and accountability (Agénor and da Silva, 2019). All these factors help to shape inflation expectations, thereby supporting central banks in attaining their pre-announced goals and strengthening their credibility (Figure 6.1). In this regard, the features of transparency, communication, and accountability have been discussed in the previous section, so this section focuses on the performance of central banks in Vietnam and three IT Southeast Asian countries. Specifically, the performance can be accessed based on two aspects: (i) hitting the committed targets and (ii) attaining low and stable inflation combined with sustained economic growth, as these are crucial goals under a flexible IT regime.

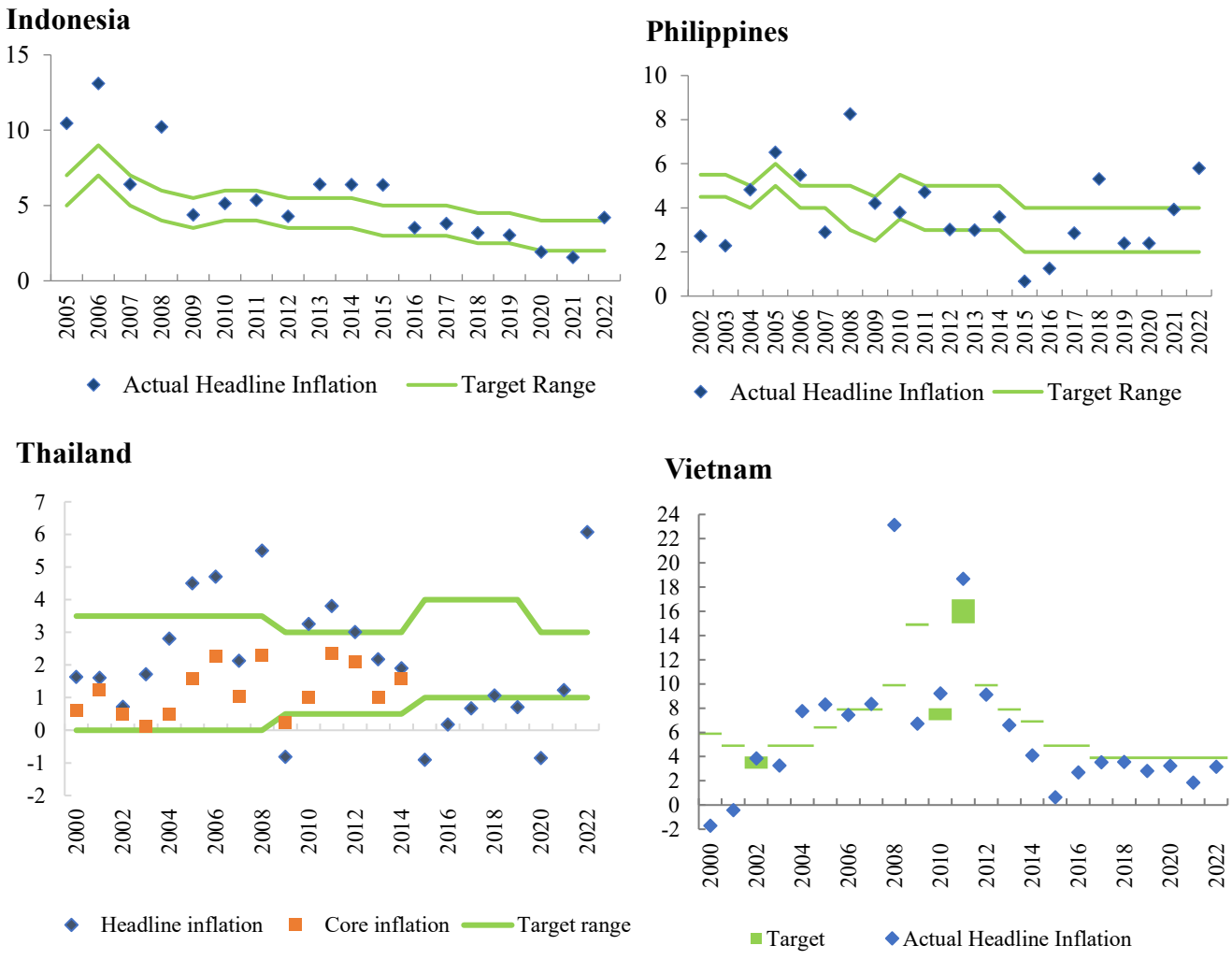
6.3.1. Hitting the committed inflation targets

Under the IT regime, the central bank announces and commits to achieving specific inflation targets. Therefore, hitting the targets means that the central bank meets the pre-announced target commitments, which helps to strengthen the public's confidence in the central bank's capacity to conduct monetary policy. Accordingly, the study compares actual inflations and targets to assess how well the central banks of Thailand, Indonesia, the Philippines, and Vietnam have fulfilled their inflation commitments.

Figure 6.2 illustrates that the Bank of Thailand successfully achieved its inflation targets most of the time during its IT adoption, particularly in the period from 2000 to 2014. This accomplishment significantly contributed to establishing and enhancing the BOT's credibility. However, from 2015, when the target changed from core CPI target to headline CPI target, the

actual inflation rates often fell below the target's lower bound (except for 2022). In this context, the BOT should enhance communication to anchor inflation expectations and develop specific plans to bring inflation back to target, avoiding damaging policy credibility. In the case of Indonesia and the Philippines, the central banks struggled to hit the inflation goals at the beginning of their IT implementation, partly because of the limited capacity, accompanied by facing adverse supply shocks in the early stage of IT. However, from 2010, the performance of these two central banks improved, and they almost achieved their set inflation goals. Furthermore, despite all three countries falling short of their targets in 2022 due to the adverse effects of global supply shocks, IMF forecasts indicate that inflation in Thailand and Indonesia will return to the target range in 2023, while inflation in the Philippines will return to the target in early 2024.

Figure 6.2. Actual vs. Target Inflation in three IT countries and Vietnam (percent)



Source: Author's illustration

Note. For Thailand, 2000-2014: targets Core inflation, 2015 onward: targets Headline inflation

Regarding Vietnam, although the country has not yet applied an IT framework, the authorities have also announced annual inflation targets, similar to the three IT Southeast Asian countries have done. Moreover, the target levels were adjusted several times. In terms of performance, there exists a significant gap between the actual inflation and the target in some years, reflecting the limited capacity of SBV to meet the committed targets. Since 2017, the inflation performance has shown improvement, with actual inflation coming close to the target, as depicted in Figure 6.2. However, although Vietnam successfully achieved its 2022 inflation target, with average inflation of 3.16%, partly due to some administrative measures (e.g., administered-price controls of the government and credit cap, interest rate cap of the SBV)[76], it is worth noting that inflationary pressures are expected to increase due to the policy adjustments concerning electricity, water prices, and minimum wages in the second half of 2023, and the SBV's accommodative policy stance in 2023. Consequently, the Vietnamese authorities raised the inflation target for 2023 from about 4% to 4.5%. Meanwhile, according to the IMF, the projected inflation for Vietnam is around 5%[77]. Intuitively, despite some progress, the accomplishment of inflation targets in Vietnam from 2000 until now, in general, has not been as favorable as that of the three inflation-targeting countries.

To get a clearer picture, the study calculates the target-achieving score by dividing the number of years when inflation falls within the target range by the total number of years observed. However, as mentioned earlier, there is a problem in that the inflation target specification in Vietnam is sometimes published as "about 4%", causing difficulties in accurately assessing whether the central bank's performance meets the set target or not (e.g., in the case of actual inflation at 4.3% or 4.4% or very low at 1%). Hence, to be consistent with the inflation target form of the three IT countries, the study assumes that the target in Vietnam is a point target (announced by the National Assembly) with a tolerance band of (+/-) 1pp. If so, Vietnam's "target-achieving score" is about 34.78%, which is relatively low compared to the other three countries. Specifically, the achieving scores of Thailand, Indonesia, and the Philippines are 69.57%, 50%, and 47.62%, respectively (Table 6.3).

6.3.2. Low and stable inflation combined with sustained economic growth

It should be noted that simply considering the accomplishment of committed inflation targets is insufficient to evaluate the overall performance of monetary policy under IT. Therefore, the

[76] See Details in Chapter 3.
[77] See https://www.imf.org/en/Countries/VNM.

study considers some statistical indicators for inflation and output to sharpen the assessment further. It is necessary because, in addition to the IT's core goal of achieving low and stable inflation, central banks also take real economic development (i.e., output performance) into account within the flexible IT framework[78].

In Vietnam, both the average inflation rate and the inflation volatility are significantly higher compared to the three IT countries (refer to Table 6.3). Notably, when considering a similar period, Vietnam's average inflation is about 6%, which is nearly twice as high as the Philippines and almost three times higher than that of Thailand. Moreover, the figure for the standard deviation of Vietnam's inflation is remarkably high at 5.91%. At the same time, the average squared deviation of inflation from targets in Vietnam is significantly higher than that of other countries, partly reflecting certain limitations in the monetary policy of the SBV.

Table 6.3. Inflation and Output Performance in Vietnam and three Southeast Asian countries

Emerging countries	Inflation Rate			GDP growth		Average squared deviations	
	Average	SD	Achieving score	Average	SD	Inflation (From target point/center of the range)	Output Gap
Vietnam (Jan/2000 - Dec/2022)	6.00	5.91	34.78%	5.22	2.31	17.3	2.20
Indonesia (Jul/ 2005- Dec/2022)	5.10	3.51	50.0%	4.96	1.82	5.10	1.63
Philippines (Jan/2002 - Dec/2022)	3.79	2.01	47.62%	5.04	2.57	3.01	3.57
Thailand (May/ 2000 - Dec/2022)	2.06 (1.10)	2.17 (0.86)	69.57%	3.40	2.80	2.75	3.17

Source: Author's calculation

Note 1. SD: Standard Deviation. Data are taken from IMF for inflation data and World Bank (WB) for the GDP.

Note 2. The time considered is since the application of IT in three Southeast Asian countries, with the corresponding time frame being from the 2000s so far in Vietnam.

Note 3. For Thailand, the numbers in parenthesis are calculated on core inflation. From May 2000 to December 2014, most of the actual inflations were in the target range (93.22%). However, the target-achieving score decreased significantly after Jan 2015 (BOT shifted the target from core CPI to headline CPI).

Note 4. The achieving score is defined by the ratio of the number of years when the inflation rate is in the target (or tolerance) range divided by the number of inflation-targeting years in the sample.

Note 5. The average squared deviation from the potential GDP is calculated for the average squared output gap, where potential GDP is the fitted value of the HP filter (Grenville and Ito, 2010).

[78] Financial stability has also emerged as a concern for central banks, but primarily in recent years rather than since the outset of IT. Therefore, this section focuses on the two main objectives of flexible IT: inflation and sustainable economic growth. Meanwhile, brief assessments regarding financial stability are presented in section 6.4.2.

As for statistical indicators of output, the annual GDP growth in Vietnam is good compared to other countries, but we should recall that inflation is much higher. For example, in 2011, the economic growth rates of Vietnam and Indonesia were similar at about 6%, but inflation in Vietnam was very high (near 20%), while inflation in Indonesia was only about 5%. Indeed, one of the reasons is that Vietnam focused on expanding banking credit and disbursing public investment capital to promote growth, causing the money supply to increase sharply, but the economic growth efficiency was not proportional. Hence, while the three IT Southeast Asian countries attained low and stable inflation rates along with sustained growth, thereby enhancing the central banks' credibility, Vietnam gained economic development at the cost of high and volatile inflation for several years, which may erode the public confidence in the SBV's policy competence.

In fact, studies show that low and stable inflation, in the long run, creates a favorable investment environment, which in turn supports sustained growth (IMF, 2019b). Meanwhile, in Vietnam, reasonable inflation should be around 3-4% for a positive effect on economic growth (Tran, 2018), but the actual inflation in some years exceeded this threshold. Besides, although inflation has been more stable in recent years, it is still not guaranteed in the long term, especially as Vietnam still does not have a good anchor for monetary policy. Similarly, the IMF (2022e) highlights that Vietnam's inflation, particularly high core inflation, tends to persist due to the absence of a clear commitment to the IT regime. Therefore, implementing IT promises to improve Vietnam's macroeconomic outcomes further.

6.4. Policy Coordination and Other Objectives

An effective monetary policy framework under IT cannot be done without coordination with supportive policies. Furthermore, during IT application, central banks cannot remain indifferent to the real economy and overall macroeconomic stability, in addition to the main objective of IT (i.e., inflation target). In particular, the shocks experienced during IT implementation have further highlighted the importance of coordinating policies to attain the objectives of price and financial stability while simultaneously supporting the economy. Therefore, this section will investigate these issues by comparing the policy coordination and goals of the SBV to those of three IT Southeast Asian central banks to draw policy implications.

6.4.1. Exchange rate

As discussed in Chapter 2, the IT framework should consider exchange rate issues, especially for emerging and developing countries. In practice, the experience of three IT Southeast Asian

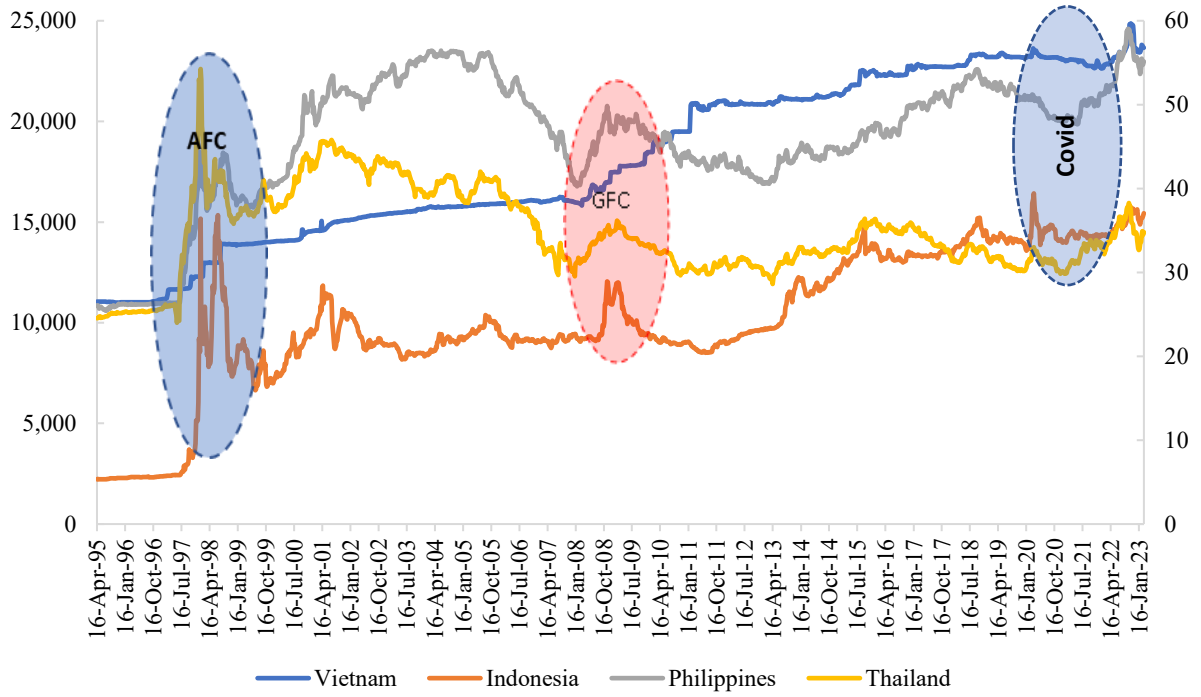
countries (as detailed in Chapter 5) shows that they can conduct a de facto flexible exchange rate regime with some FX interventions in line with their IT**.** In other words, a de facto fixed exchange rate regime is not consistent with IT, but a de facto (managed) floating exchange rate regime can be operated along with IT. The critical point is that they only intervene in the FX market when necessary to avoid extreme fluctuations but do not aim for a specific exchange rate level. Above all, price stability should be the overarching objective of monetary policy in the IT framework.

Specifically, before the AFC in 1997, the exchange rate regime of all four countries was fixed regimes. However, the AFC made the exchange rates of Indonesia, Thailand, and the Philippines enormously fluctuate, forcing these countries to float exchange rates. Meanwhile, the AFC did not affect Vietnam as much as the three above Southeast Asian countries because Vietnam's economy and finances were relatively closed at that time. Hence, the State Bank of Vietnam maintained its fixed exchange rate mechanism.

After that, the GFC caused the exchange rates of all these countries to fluctuate sharply with the domestic currency depreciation (Figure 6.3). Against this backdrop, the central banks of Thailand, Indonesia, and the Philippines were forced to conduct FX interventions and actively use reserve buffers amid capital outflow periods to prevent extreme exchange rate volatility. Similarly, the central bank of Vietnam also continuously implemented FX interventions at that time. However, given its fixed regime and thin reserve buffer, the SBV faced a more challenging time than three IT Southeast Asian central banks because it must keep its exchange rate within a narrow band instead of being flexible. As a result, while the exchange rates in Indonesia, Thailand, and the Philippines rose initially but then quickly declined and stabilized after the GFC, Vietnam's exchange rate continued to increase. More specifically, the SBV tried to keep the exchange rate stable but could not keep its promises. Eventually, the SBV had to aggressively devalue the local currency against the US dollar many times (e.g., six times from 2008 to 2010 with large degrees, devalued VN dong by 9.3% in Feb 2011 against the US dollar). This could cause the public to lose confidence in the exchange rate management, thereby weakening the SBV's credibility. In recent years, Vietnam's exchange rate regime has become more flexible than in the past, but the domestic currency remains soft-pegged to the USD with a predetermined band (IMF, 2019b; IMF, 2023a). Meanwhile, the current exchange rate regimes of the three IT Southeast Asian countries are flexible (i.e., floating), and these countries only intervene when necessary to avoid excessive exchange rate fluctuations and disorderly market conditions but do not frequently intervene in the FX market.

During the early period of the COVID pandemic, countries' exchange rates were volatile but then remained relatively stable until the end of 2021. In 2022, faced with the strengthening of the US dollar due to the tight monetary policy stance of the Fed and global supply shocks, the exchange rates in three IT countries were flexible, acting as shock absorbers. In Vietnam, the exchange rate also fluctuated, but generally less than in the three Southeast Asian countries. Additionally, while the exchange rates of Southeast Asian countries exhibited flexible trends, allowing room for domestic currency depreciation or appreciation, the exchange rate in Vietnam displayed an upward trend over time (Figure 6.3).

Figure 6.3. Nominal Exchange Rate (per U.S. dollar)



Source: Author's illustrations

Note: The left vertical axis represents data for Vietnam and Indonesia, while the right vertical axis represents data for the Philippines and Thailand.

Furthermore, the statistical figure for exchange rate volatility indicates a similar argument regarding the exchange rates of Vietnam and the three IT Southeast Asian countries (Table 6.4). Specifically, the volatility of the exchange rates of Indonesia, Thailand, and the Philippines has significantly increased since AFC, reflecting the flexible exchange rate regimes of all three countries. The exchange rate volatility index amid the GFC is markedly higher than other periods. Additionally, the coefficient of variation of the exchange rate also increases over the time horizon, implying that the FX interventions of these countries primarily aim to reduce short-term volatility while allowing significant fluctuations in the long term.

Table 6.4. Exchange Rate Volatility (Coefficient of Variation)

	10-day						50-day						250-day					
	Pre-AFC	Pre-GFC	GFC	Pre-Covid	Covid	Post-Covid	Pre-AFC	Pre-GFC	GFC	Pre-Covid	Covid	Post-Covid	Pre-AFC	Pre-GFC	GFC	Pre-Covid	Covid	Post-Covid
ASEAN																		
Indonesia	0.10	0.83	1.33	0.43	0.54	0.43	0.31	2.20	4.17	1.10	1.54	1.05	1.14	5.89	5.78	3.30	2.93	2.06
Philippines	0.24	0.40	0.75	0.40	0.33	0.53	0.78	1.04	1.87	0.84	0.69	1.45	3.09	2.99	5.60	1.85	1.72	3.70
Thailand	0.18	0.47	0.43	0.35	0.50	0.74	0.4	1.18	1.01	0.87	1.21	2.05	0.79	3.17	4.34	2.20	2.75	3.62
Vietnam	0.04	0.07	0.25	0.12	0.10	0.27	0.21	0.18	0.85	0.32	0.25	0.88	0.60	0.68	2.28	1.08	0.48	1.55
Other Asian Free Floater																		
Australia	0.51	0.78	2.45	0.81	0.82	1.01	1.14	1.76	5.91	1.75	1.84	2.23	2.55	3.90	11.69	3.97	4.23	3.41
New Zealand	0.42	0.85	2.2	0.87	0.78	1.00	0.95	1.96	5.09	1.87	1.70	2.53	2.44	4.59	10.76	3.90	3.65	4.66

Source: Corbacho and Peiris (2018) and the author's calculation

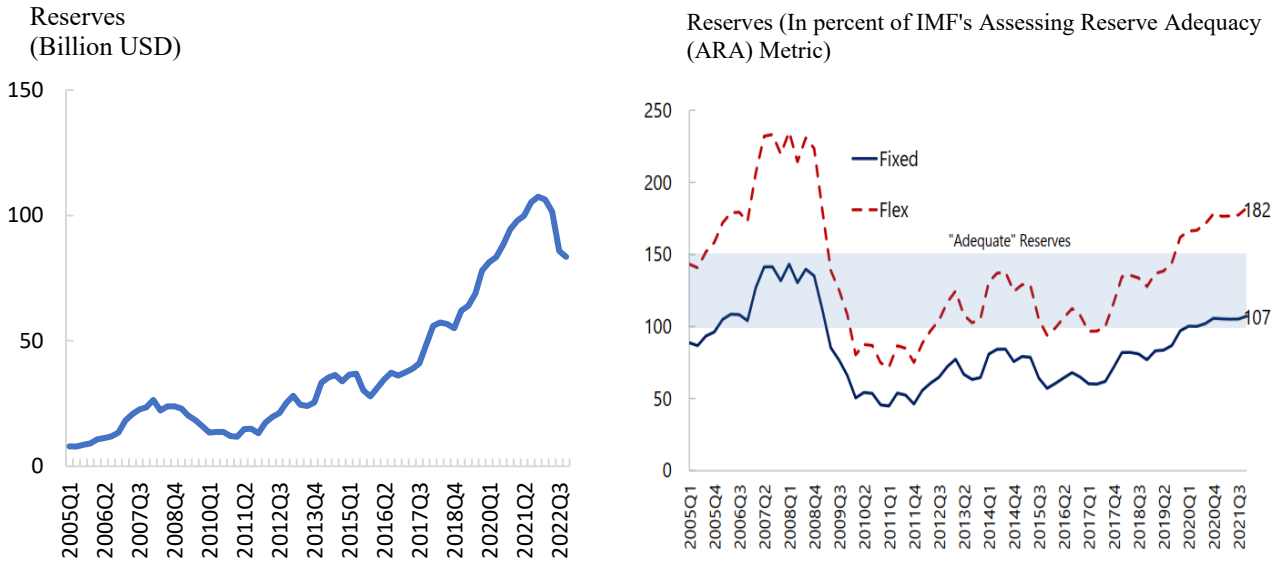
Note: Periods: Pre-AFC (1991 to June 1997), Pre-GFC (1999 to August 2008), GFC (September 2008 to February 2009), Pre-Covid (March 2009 – February 2020), Covid (March 2020 – March 2022), Post-Covid (April 2022 to March 2023)

However, the exchange rates of the three Southeast Asian countries are generally less volatile than those of some countries with free-floating exchange rate regimes at all horizons, suggesting more or fewer effects of FX interventions by IT Southeast Asian central banks. Meanwhile, Vietnam's exchange rate volatility index is even much lower than that of the Southeast Asian countries, reflecting a relatively pegged exchange rate regime to the US dollar. However, data on exchange rate volatility in Vietnam has also increased over periods, implying that Vietnam's central bank let the exchange rate move more freely than before. This is also reflected in the implementation of a new exchange rate mechanism by the SBV starting in 2016 and the expansion of the exchange rate fluctuation band from +/-3% to +/-5% since October 2022.

The above analysis reinforces that Vietnam's exchange rate regime has gradually improved but is still less flexible than three IT Southeast Asian countries. In fact, trying to maintain a stable exchange rate through frequent FX interventions requires the SBV to have a large buffer of FX reserves. Otherwise, it may lose control of the exchange rate in the case of a wave of currency speculation or a massive capital outflow amid global uncertainty (e.g., the three Southeast Asian countries experienced this pain during the AFC in 1997). Meanwhile, as indicated in Figure 6.4, the FX reserve level of Vietnam in percent of the IMF's ARA metric (in the case of the current regime) is illustrated by the blue line, showing it is often below the adequacy level recommended by the IMF. Similarly, although FX reserves in USD increased significantly from USD 31.24 billion in 2016Q1 to USD 107.44 billion in 2021Q4, the FX reserve level dropped rapidly to about USD 83.48 billion by the end of 2022 due to the pressure of inflation and the exchange rate. This remarkable drop occurred because the SBV sold significant foreign currency to stabilize the exchange rate movement. Consequently, Vietnam's FX reserves in 2022 fell to the equivalent of 2.78 months of imports, below the threshold of 3 months of imports recommended by the IMF[79]. Considering the growing challenges and ineffectiveness of the fixed exchange rate regime, the failure to uphold the exchange rate commitment would undermine the SBV's credibility and exacerbate the dollarization issue. Moreover, as Vietnam progressively integrates into the global financial market, the challenges for the current exchange rate regime are expected to increase.

[79] Data at https://www.imf.org/external/datamapper/Reserves_M@ARA/VNM

Figure 6.4. Foreign Exchange Reserves of Vietnam



Source: IMF

Note. The IMF's Assessing Reserve Adequacy (ARA) metric serves as a gauge to determine a country's potential FX liquidity requirements during unfavorable situations, thereby indicating the country's level of susceptibility. A reserve to ARA metric ratio ranging from 100% to 150% is deemed sufficient (IMF, 2016a).

In this context, the SBV does not need to freely float the exchange rate, but it should implement a more flexible exchange rate regime as the three IT Southeast Asian central banks have done. Mainly, all three IT central banks allow exchange rates to closely reflect market fluctuations and do not commit to any preannounced level of exchange rates. Still, they can intervene to avoid undue volatility, supporting price and financial stability objectives under IT. In this regard, as mentioned earlier, the SBV widened the exchange rate band from +/-3% to +/-5% in October 2022; however, it is necessary to continue broadening the range to move toward a more flexible exchange rate. Additionally, since 2021, the use of forward contracts for FX interventions has facilitated increased flexibility in Vietnam's exchange rates (IMF, 2022e). Nevertheless, continuously encouraging hedging tools for FX risks and deepening the FX market (e.g., a reformed FX system in Thailand) are needed to ensure market participants can withstand exchange rate shocks. Also, it is crucial to monitor the exchange rate movements to prevent excessive volatility. Accordingly, FX interventions can be conducted in necessary cases but should be transparent and two-sided, letting the VND have room to appreciate or depreciate against the US dollar along the fundamentals. Simultaneously, preventing high dollarization will help reduce unnecessary FX interventions, thereby supporting a flexible exchange rate policy under IT.

6.4.2. Financial Stability

Most central banks are concerned about financial stability besides inflation, output, and exchange rate objectives, especially after GFC[80]. In practice, all three IT Southeast Asian central banks have added financial stability to their mandates.

As mentioned in Chapter 5, with a well-designed framework and a spectrum of tools, Indonesia, the Philippines, and Thailand effectively pursued both price stability and financial stability under their IT framework. To this end, they established an institutional framework for the financial stability objective and integrated macroprudential tools to complement monetary policy in the central banks' policy system. Also, they issued both Inflation Reports and Financial Stability publications for effective communication. In Vietnam, although its financial system was not severely affected during the GFC, financial stability still needs to be considered, given Vietnam's increasing integration into the global financial market, combined with the fluctuations of capital flows amid global uncertainty. In recognition of this issue, like the three Southeast Asian countries, financial system stability has become one of the statutory obligations of the SBV since 2013 (Decree No. 156/2013/ND-CP).

As for the institutional arrangement, the financial stability objective requires a proper institutional setting and collaboration among various stakeholders to manage systemic risks effectively. Particularly, inside the central bank, each central bank of Indonesia, the Philippines, and Thailand set up dedicated departments for financial stability objectives**.** In the same vein, the SBV (Vietnam) also established the "Monetary and Financial Stabilization Department" under its management for financial stability tasks in 2014. Moreover, while the central bank (with monetary and macroprudential policies) plays a vital role in the financial stability task in all three IT countries, the overall stability of the financial system is governed by a committee or a council of many agencies. Specifically, in the Philippines, the BSP coordinates with other regulators via the Financial Stability Coordination Council, chaired by the BSP Governor, and includes the Department of Finance, the Insurance Commission, the Philippine Deposit Insurance Corporation, and the Securities and Exchange Commission as member agencies. In Indonesia, the Financial System Stability Committee**,** including the Minister of Finance as a chairman, the governor of BI, the chairman of the Deposit Insurance Institution, and the chairman of the Financial Service Authority (for micro-prudential policies) as members, manage the overall financial stability task. In Thailand, the BOT established the Financial

[80] See details in Section 2.4.2.

Institutions Policy Committee (FIPC) to coordinate closely with the fiscal policy office and two other agencies (one oversees institutions in the capital market while one supervises the insurance industry in Thailand), aiming at preventing risks in the financial system through inter-agency forums as well as across-directorship. In fact, institutional arrangements (inside and outside the central banks) in the three countries allow close coordination between the regulators in achieving overall economic stability, covering the central bank's price and financial system stability goals under IT. Meanwhile, coordination for financial stability in Vietnam is still restricted when there is a lack of formal gathering (e.g., a council) including executive representatives of the SBV (in charge of the system of credit institutions), the Minister of Finance (in charge of supervision of the securities and insurance sectors), and other related ministries for the holistic management of financial stability. In other words, each agency in Vietnam focuses only on its specialized supervision and does not carry out consolidated supervision of the overall financial system. Indeed, Vietnam has established a "National Financial Supervisory Commission" since 2008 consisting of experts to advise policies to the government on financial stability, but the connection between this Committee and related agencies (e.g., the central bank, the Ministry of Finance, State Securities Commission of Vietnam) is still limited. This Committee only has a policy advisory role to the government but does not have the authority to make policy decisions related to financial stability. Therefore, it is necessary to strengthen the institutional arrangement among inter-agencies in Vietnam for closer coordination to achieve the goal of monetary and financial stability.

Coming back to the role of central banks, given that the financial systems in ASEAN countries are still mainly bank-based[81], the central banks play critical roles in achieving financial stability task. More specifically, besides supervision for banks via micro-prudential policy (except for Indonesia)[82], all three IT central banks coordinate the macroprudential policy and monetary policy within their IT framework for the end goals. For example, Bank Indonesia has enhanced its IT framework by integrating financial stability elements. Particularly, BI enlarges its forecasting and analysis models by adding macro-financial linkage under the IT framework and employs in-depth evaluations of financial system risks to formulate policy decisions. Then, based on the models' results and thorough judgments, they coordinate monetary policy, flexible exchange rate, capital flow management measures, and macroprudential tools to aim at price stability and financial stability. Likewise, the central banks of Thailand and the Philippines have

[81] See OECD (2021)
[82] In Indonesia, a dedicated agency (not the central bank) is in charge of micro-prudential measures.

adopted similar strategies. Notably, all three central banks emphasized the role of macroprudential tools, along with early warning indicator systems, in preserving financial stability. In Vietnam, financial stability has only been noticed in recent years, so the toolkit for this goal is still limited compared to that of the three IT countries, as reflected in Table 6.5.

Table 6.5. Instruments for Financial Stability in three IT countries and Vietnam

Instrument	Indonesia	Philippines	Thailand	Vietnam
Caps on the LTV (Loan to Value) ratio	✓	✓	✓	
Caps on the DTI (Debt-to-income) ratio or loan-to-income ratio		✓	✓	
Caps on foreign currency lending				
Ceilings on credit/ credit growth				✓
Reserve requirements	✓ (Loan-to-funding linked to reserve requirement)	✓	✓	✓
Countercyclical capital buffer	✓	✓	✓	
Time-varying/Dynamic provisioning		✓	✓	
Restrictions on profit distribution				
Limits on net open positions/ Currency mismatches	✓	✓	✓	✓
Limits on maturity mismatch				
Other instruments	• Limits on Down payment for car loans • Macroprudential liquidity buffer • Short-term liquidity assistance • Macroprudential intermediation ratio	Limits on lending to the real estate sector.	Maximum credit limits for credit cards	

Source: Author's compilation based on central bank websites.

In particular, the three IT central banks have developed a range of instruments, especially common macroprudential measures like caps on the LTV (Loan-to-Value) ratio, caps on the

DTI (Debt-to-income) ratio for risks from procyclicality in credit, countercyclical capital buffer for financial system resilience, limits on currency mismatch for risk of exchange rate exposures. Meanwhile, the tools for the financial stability of the State Bank of Vietnam are still meager, and most are monetary tools (e.g., ceiling on credit and reserve requirements).

As mentioned in Section 2.4, specific macroprudential measures not only help to ease the potential conflict between price stability and financial stability but also complement the shortcomings of monetary and micro-prudential tools in preventing systemic risk. Besides, the targeted macroprudential measures (e.g., LTV ratio imposed to the real estate sector) can be more effective in handling the risks stemming from specific fields, while the tightened monetary tools (e.g., increase in interest rate, reserve requirements) have impacts on the whole economy and sometimes undesirable effects. Therefore, in the future, the effort to develop macroprudential measures in Vietnam is necessary to complement the monetary policy under IT.

Furthermore, in support of macroprudential measures, all three IT central banks have developed early warning indicator systems to monitor and detect potential vulnerabilities, offering valuable insights for decision-making. Meanwhile, while Vietnam's early warning indicators have begun to be established, they are still in their infancy (IMF, 2022e). Therefore, there is a need for further development of the indicator system to bolster effective policymaking.

Another highlight spot in the policy implementation of the three IT Southeast Asian central banks is the emphasis on communication's role in financial and price stability. In addition to regular (monthly or quarterly) Inflation Reports/Monetary Policy Reports mentioning both monetary and financial issues, all three have released specific publications on financial stability to communicate to the public and market participants about the evolution of the financial system and the risks involved. Moreover, financial issues and macroprudential tools are updated on the central banks' websites. In addition, press releases/conferences on conclusions of the Financial Stability Council/Committee meeting are also published to share policy decisions promptly. On these matters, the State Bank of Vietnam has also mentioned financial stability issues (i.e., section "Macroprudential supervision over the financial system") in its annual report since 2014, but it has not yet issued a separate publication on financial stability as the three IT central banks have done. Moreover, on SBV's website, information on financial stability issues is scant (compared to the three IT central banks), while macroprudential measures are not mentioned yet.

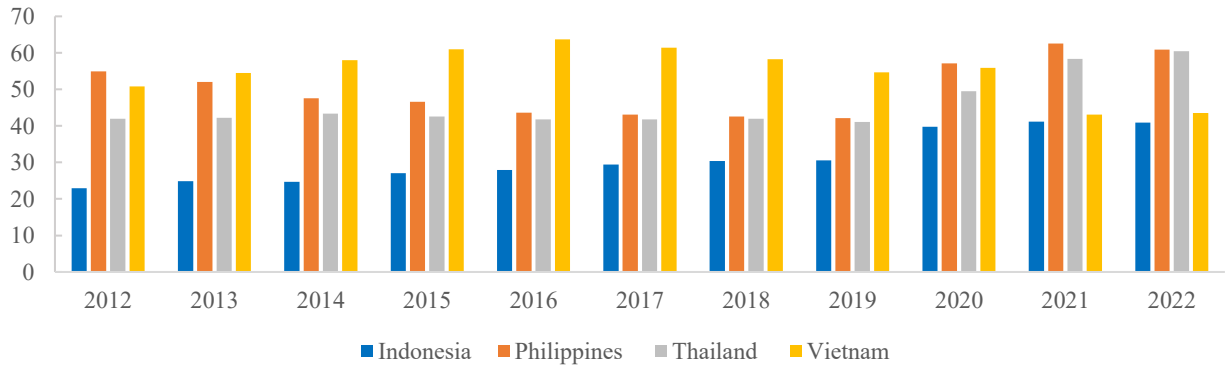
In summary, the link between price stability and financial stability for overall macroeconomic stability makes these two goals integral in implementing the flexible IT framework. In practice, experiences from three IT Southeast Asian countries give lessons to get there. Specifically, establishing an institutional arrangement to enhance cooperation among regulators, building a legal framework and toolkit for macroprudential policy to complement monetary policy, and promoting effective communication on both price and financial stability objectives are essential considerations for the SBV.

6.4.3. Coordination of the Government

6.4.3.1. Fiscal issues

Chapter 4 showed that the fiscal indicators in Vietnam were comparable to those of the three Southeast Asian countries at the time of their IT introduction, suggesting the ability to meet the pre-conditions of no fiscal dominance for IT in Vietnam. However, during the implementation of the IT framework, IT Southeast Asian countries have sometimes made some exceptions with budgetary discipline to deal with shocks, especially during the COVID pandemic. Hence, this section compares the current fiscal position of IT Southeast Asian countries with that of Vietnam to see if Vietnam needs to note anything regarding fiscal issues for its upcoming IT implementation.

Figure 6.5. Public Debt (in percent of GDP)



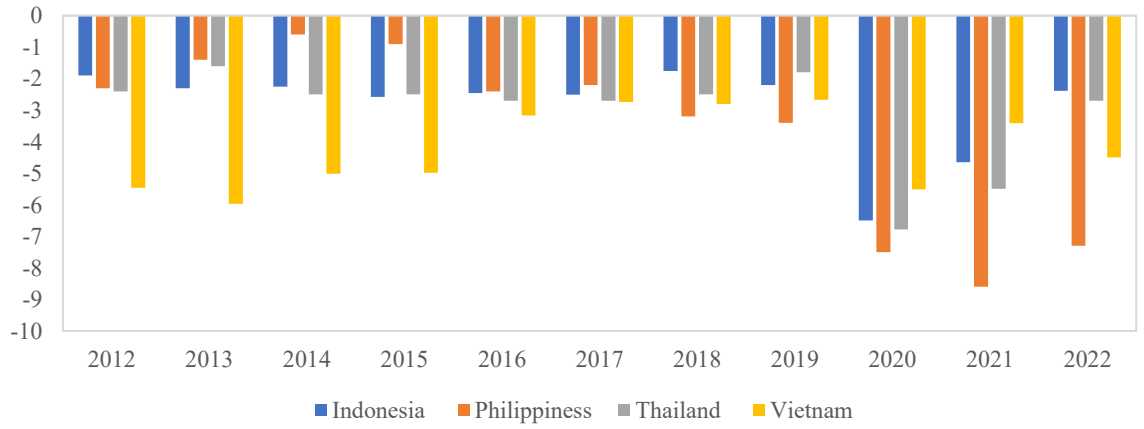
Source: Author's illustration

Concerning the public debt, the data of Vietnam was the highest among the four countries from 2013 to 2019, as illustrated in Figure 6.5. In particular, the public debt-to-GDP ratio peaked at 63.7% in 2016, close to the legal limit (65%) in Vietnam. Meanwhile, the figure for the three IT Southeast Asian countries was much lower than that of Vietnam. Specifically, the public

debt-to-GDP ratio of the Philippines and Thailand was about 40%, while that of Indonesia was only about 30%. This demonstrates the efforts of three IT countries in implementing effective fiscal discipline, ensuring close coordination with monetary policy for price stability and sustained economic growth. During the COVID-19 pandemic, countries increased their public debt to finance their fiscal stimulus packages. Despite this, Indonesia's public debt-to-GDP ratio remained reasonable at around 40%. Meanwhile, the figures for Thailand and the Philippines have surpassed Vietnam's public debt-to-GDP ratio since 2021. In fact, Vietnam's public debt-to-GDP ratio figures for 2021 and 2022 are lower than those of Thailand and the Philippines, partly because Vietnam has applied new data for its GDP scale since 2021, in addition to fiscal reforms[83].

Besides, Vietnam's budget deficit was relatively high, continuously at 5-6% of GDP from 2012-2015, and was the highest data among the four countries, as shown in Figure 6.6. Since 2016, Vietnam's fiscal balance has improved significantly and is comparable to the three IT Southeast Asian countries. During the COVID-19 period in 2020 and 2021, all four countries applied expansionary fiscal packages to support the economy, causing increased budget deficits. However, fiscal discipline was restored in 2022 in Indonesia and Thailand, with deficits below 3%, helping preserve monetary policy independence under IT. Meanwhile, although Vietnam's current fiscal balance is better than the Philippines, Vietnam still needs to restore fiscal discipline for fiscal sustainability in the post-COVID period, like Thailand and Indonesia. Fiscal discipline can help Vietnam avoid the problems of the Philippines, which faced budgetary issues after COVID-19 that may affect monetary policy effectiveness.

Figure 6.6. Fiscal Balance in three IT countries and Vietnam (in percent of GDP)



Source: Author's illustration

[83] See details in Section 4.2.

Overall, Vietnam's fiscal index has improved remarkably and is now better than the Philippines'. Accordingly, Vietnam's ratio of public debt to GDP was about 43.5% in 2022 - a commendable effort. However, in the post-COVID era, continued efforts are required to maintain fiscal sustainability and return to the pre-COVID budget deficit level, as in Indonesia and Thailand. This will reinforce the independence of monetary policy in the upcoming IT adoption. Particularly, the Vietnamese government can set caps on fiscal deficit like in the case of Indonesia (i.e., 3% of GDP) to prevent severe budgetary imbalances**.** Concurrently, enhancing the efficiency of public investments to curtail unnecessary expenditures and focusing on infrastructure and human resource investments, as seen in Indonesia, can foster long-term economic growth. This approach can effectively reduce the deficit-to-GDP ratio. Besides, given improved economic growth, tax revenue will automatically increase, contributing to rebalancing the government budget.

6.4.3.2. Other Government policies

In addition to fiscal discipline, the government's administered-price policies influence the central bank's IT enforcement. This is a typical matter in emerging countries (Mishkin, 2008). Specifically, in IT Southeast Asian countries and Vietnam, the governments manage the prices of some essential commodities (e.g., fuel, electricity, water, education, and health services). In other words, some prices of commodities are used to calculate CPI, which is under the government's management and beyond the central bank's control. Not only that, policies related to supporting the production and distribution of commodities of the government can also affect the inflation outcome from the supply side.

Against this backdrop, the Thai authorities strengthened coordination in sharing information and plans related to price management between the Ministry of Commerce and the BOT. Meanwhile, another solution is to gradually reduce the government's heavy control over the prices of some commodities. These will help the BOT have a better strategy for making monetary policy to attain the inflation goal.

In Indonesia, a Memorandum of Understanding between the Ministry of Finance and the central bank has been signed to coordinate in setting inflation targets and monitoring and controlling inflation. In addition, the authorities have established a Central Inflation Task Force consisting of executive representatives from the Ministry of Finance, BI, and other related ministries to enhance coordination in inflation management. Moreover, Regional Inflation Task Forces have also been formed to enhance joint coordination. Not only that, but the government has also constantly

improved the logistics infrastructure, managed and supported the supply and distribution of commodities, and implemented subsidies (e.g., in the event of natural disasters or drought affecting production) to support price stability from the supply side. Meanwhile, BI conducts effective monetary policy to contain inflation from the demand side. Therefore, thanks to the close cooperation between the government and BI, primarily via the Inflation Task forces, Indonesia's goal of maintaining low and stable inflation has been accomplished well.

In the Philippines, cooperation between government agencies and the central bank has been conducted mainly via the Development Budget Coordinating Committee. Moreover, the proportion of administered-price items in the CPI basket in the Philippines is small (about 6%) compared to that of Indonesia (18%), Thailand (26%), and Vietnam (19%). Besides, unlike Indonesia and Thailand, the Philippines' central bank uses "exemption clauses" for inflation objectives. Notably, the clauses state a predetermined set of acceptable conditions that can make the BSP fail to meet the target. Among them, the "exemption clauses" mention "noticeable government policy changes" affecting prices. Although this exemption allows the performance assessment of the BSP to be unaffected by government policies (e.g., changes in administered-prices, taxes, and subsidies), there is still debate about its effectiveness. Overusing "exemption clauses" may affect public confidence in the inflation commitment. Instead, close coordination between the agencies via sharing information to accomplish the goal should be more of a priority.

Similarly, inflation in Vietnam has been affected by monetary policy and the government's price control for essential commodities (Hoa, 2017; Epstein et al., 2022). So, the Vietnamese government has established the Price Management Steering Committee to gather leaders from the Ministry of Finance, the SBV, and many related ministries since 2014 to enhance coordination for the price stability objective. Nonetheless, the Vietnamese government's price control degree on administered items seems relatively rigid. For instance, the Thai government temporarily provided subsidies for electricity and fuel prices from March to September 2022 amid global energy price shocks. However, they subsequently raised these prices by approximately 18% from September to December 2022 to align with market supply and demand (IMF, 2022d). Similarly, the Indonesian government introduced price subsidies during shocks but then increased gasoline prices by 30% in September 2022, raised electricity prices by about 18%, and planned to gradually phase out energy subsidies to reflect market prices (IMF, 2023b). Meanwhile, the Vietnamese government has applied a ceiling

on gasoline prices and has not raised electricity prices since 2019 so far[84]. In the future, the Vietnamese government should consider gradually reducing its heavy control over the prices of goods and services. This would allow prices to reflect market mechanisms better, reduce fiscal costs, and ease the losses of State-owned enterprises.

Generally, in the short-term and medium-term, given the presence of administered prices, Vietnam should maintain coordination and information sharing between the SBV, the Ministry of Finance, and other related agencies to let the SBV update on any changes/plans on the administered prices, thereby conducting monetary policy more appropriately under the upcoming IT framework. In the long run, when the prices of government-controlled commodities are close to or equal to market prices (via periodic adjustments), the influence of administered prices on inflation, in general, will be significantly reduced (Hoa, 2017). Thus, at that time, cooperation between the government and the central bank will still be needed but mainly related to the government's supply-side support to inflationary pressures. Specifically, the government's policies to develop infrastructure (e.g., logistics), support the distribution and circulation of goods, and other measures to improve the supply source of goods will also contribute to stabilizing prices, thereby assisting the central bank in attaining the inflation targets (as Indonesian authorities have done). These are issues that the Vietnamese government needs to pay attention to.

In summary, Chapter 6 draws comparisons between Vietnam and three IT Southeast Asian countries on core issues for an effective IT framework. The assessment reveals significant progress in Vietnam compared to its past performance; however, relative disparities persist between Vietnam's current conditions and those of the three IT Southeast Asian countries. These gaps encompass institutions, monetary policy framework, monetary policy performance, and the coordination of related policies to support the IT framework. Therefore, while current conditions enable IT introduction, the SBV's continued efforts and the Vietnamese government's support during the upcoming IT implementation remain vital for successfully establishing this framework, as seen in the three IT Southeast Asian countries. In turn, once operational, this framework will further drive institutional development, contribute to improved economic performance, and enhance the credibility of Vietnam's monetary authorities. The next chapter will present specific policies and necessary steps that Vietnamese authorities need to take in their journey toward adopting the IT framework.

[84] According to Vietnam Electricity, the electricity price in Vietnam is expected to increase slightly by about 3% in mid-2023.

Chapter 7. Policy Implications and Roadmap for Vietnam

The operating views of the Party and the government of Vietnam have had many innovations in recognizing the relationship between economic growth and inflation. Accordingly, although economic growth is still an important goal for an emerging economy like Vietnam, it should not be achieved at all costs, especially at the cost of high and volatile inflation (typically as in 2008-2011). Given the promulgation of the new Law on the SBV in 2010 by the National Assembly and Resolution 11 of the government in 2011, price stability indicated by the inflation rate has become one of the priority objectives of macroeconomic policies. In addition, the government issued Decision No.986/QD-TTg on the development strategy toward 2025 with an orientation to 2030 for Vietnam's banking sector, expressing the necessity of a modern, independent central bank, and emphasizing the importance of controlling inflation in monetary policy management. These represent the consensus and support of the Party and the government to focus more on price stability for sustained growth than before, which is an essential premise supporting the IT application of the SBV in the coming years.

However, as analyzed in the previous chapters, successful IT adoption requires further efforts from the Vietnamese authorities, and synchronous solutions should be implemented. In this regard, this Chapter provides policy implications for Vietnam in preparation for the IT framework and subsequent IT implementation. Also, the study proposes a specific roadmap to apply IT in Vietnam, including three main stages, which are (i) preparation for the IT framework, (ii) introduction and initial implementation of the IT framework, and (iii) development and fine-tuning (if necessary) of the IT framework.

7.1. Policy Implications

The evaluation of Chapter 4 shows that satisfying three core prerequisites for the IT framework in Vietnam is comparable to that of the three IT Southeast Asian countries at the time of their IT introduction, but there is still room for further improvement. Moreover, Chapter 6 indicates that the core elements of an IT framework also must be established and improved over time to catch up with that of three IT Southeast Asian countries, including enhanced legislation, target setting, operational framework, transparency and accountability, technical capacity, and policy coordination within the IT framework. Based on those analyses, this section gathers policy implications for Vietnam toward IT.

7.1.1. Policy implications for fully satisfying (pre)conditions for IT in Vietnam

The missing issues for the core prerequisite of IT in Vietnam are mainly related to legislation for inflation objectives and central bank independence[85]. Against this backdrop, the best solution is revising the current Law on the SBV, like in the case of Indonesia and the Philippines before their IT adoption; however, this can hardly be done in a short time. Hence, Vietnam can amend the Law after IT introduction, as in the case of Thailand. Meanwhile, the short-term solutions are as follows.

Regarding the priority of the inflation target over the other goals, the government can emphasize the central objective of monetary policy as price stability in its Annual Resolution. Based on that, the SBV's Annual monetary policy directive also should affirm this issue. After that, the official amendments to the central bank law can be passed after IT adoption. At the same time, while waiting for the amended law, it is necessary to continue paying further attention to the inflation target in practice from the IT outset[86]. Especially in the post-COVID period, given high global rates and increased non-performing loan issues in Vietnam's banking system (IMF, 2022e), further easing monetary policy by the SBV to boost credit and economic growth will be risky and less effective. In that context, the government should continue to ease the pressure regarding the economic growth target on monetary policy and enhance the role of fiscal policy for growth goals (e.g., via strengthening infrastructure investment, improving the efficiency of public investment to support long-term growth, and conducting targeted assistance to the poor and vulnerable groups). Meanwhile, the monetary policy focusing on price stability will promote a favorable investment environment, thereby creating investors' confidence and supporting sustained growth. Although the Vietnamese government has more widely accepted this view than in the past, the government's long-term commitments on this issue remain critical so that the SBV can focus on price stability. Besides, a more flexible exchange rate policy is needed to ensure the priority of the inflation target. It does not mean that the conduct of monetary policy will be indifferent to the economy's development and the exchange rate's stability, but those goals should be subordinated or supplementary to the price stability objective.

Regarding central bank independence, while waiting for the amendment of the law, the government can continue to give de facto full instrument autonomy to the SBV to ensure that the SBV can have freedom in monetary policy decisions and toolkits to achieve the set goals.

[85] See Details in Chapter 4

[86] At the time of IT adoption, all three IT Southeast Asian central banks fulfilled the precondition of priority of inflation over the other goals in practice.

After that, the promulgation of the amended Law on SBV will legalize and complete the autonomy of the SBV. This solution is similar to that of Thailand because the BOT had a high practical instrument autonomy at the time of IT application, but it was not until 2008 that the new BOT Act was officially enacted, granting legal independence for the BOT.

Regarding fiscal dominance issues, although public debt and fiscal deficit are not major problems at the moment in Vietnam, there is still room to enhance fiscal sustainability further, thereby preserving the central bank's independence during IT implementation. Accordingly, in terms of legislation, the National Assembly can revise the Law on SBV to specify and limit the cases and the amounts in which the SBV provides credits to the Vietnamese government or even forbid the direct extension of credit to the government, as in the case of Indonesia[87]. In addition, the Law on State Budget (promulgated by the National Assembly) can also add regulations on the budget deficit ceiling (like in Indonesia). From a practical perspective, the government can enhance the efficiency of public investment and spending, reduce unnecessary spending items, and reform the tax system to rebalance the budget. Moreover, efforts should be made to develop the government bond market, thereby helping the government to better mobilize capital from the private sector, instead of putting pressure on the SBV. Furthermore, it is necessary to reduce the fiscal deficit in Vietnam from 4.5% of GDP in 2022 to a lower level of about 3% of GDP (as in the case of Indonesia and Thailand) and continue to strengthen fiscal sustainability to ensure the autonomy of monetary policy operation under IT.

Generally, although it is difficult to finalize the above issues quickly, amendment of relevant laws should be completed in early IT implementation to create a comprehensive legal framework for effective IT enforcement. At the same time, continuing to meet the preconditions in practice is also critical.

7.1.2. Policy Implications for establishing key elements of an IT framework in Vietnam

In addition to the prerequisites improved from IT preparation to IT implementation, critical elements of IT should be established during the implementation phase to build a full-fledged IT framework (as mentioned in Chapter 6).

Setting Inflation Targets

[87] Currently, the Law on the State Bank 2010 only stipulates that the time limit for repayment of advance finance (granted by SBV) of the government is within the budgetary year but does not specify the cases of advances, the amount limit of funding, and no regulations if the advances are not paid on time.

For the authority to set inflation targets, the existing process can be maintained, in which the SBV proposes the target and submits it to the government, which subsequently submits it to the National Assembly for approval. However, the specification of the inflation target in Vietnam needs to be adjusted under IT. Particularly, following experience from IT Southeast Asian countries, the SBV can apply the headline inflation target expressed by a point target with a tolerance band[88], which allows some extent of flexibility for the central bank and help to anchor inflation expectation. Besides, the deviation band should be wide enough at the early stage of IT adoption (e.g., ± 1.5 pp) and then can be narrowed to ± 1 pp. Furthermore, studies suggested that the reasonable inflation level in Vietnam should be around 3-4% for a positive effect on economic growth (Tran, 2018; Nguyen et al., 2022). Also, if inflation in Vietnam exceeds 6%, it will harm economic growth (Tien, 2021). Therefore, in the early years of IT application, the SBV can determine the inflation target of 3.5% ± 1.5 pp. Regarding the policy horizon, the horizon should be around 2 years to allow the lag effects of monetary policy.

Operational Framework

Regarding the overall strategy, the SBV should shift from the intermediate targets of money supply and credit growth to an intermediate target of inflation forecast, like the approach adopted by three Southeast Asian countries under IT. Accordingly, the SBV should determine adjustments to the key policy interest rates based on the difference between the forecast and the target and announce these adjustments to signal the monetary policy. This also should be accompanied by the utilization of other monetary policy tools to support policy rates. To that end, it is crucial to strengthen the analysis and forecasting capabilities of the SBV, integrating various information from indicators such as exchange rates, money supply, output gap, and market interest rates. This will enable the SBV to make appropriate monetary policy decisions and effectively attain the pre-announced inflation targets.

Regarding the operating target, although since 2012, the SBV has started using the interest rate as an additional target combined with money base volume, the interest rate management of Vietnam still shows shortcomings compared to that of the three IT Southeast Asian countries (as analyzed in Chapter 6). In fact, the SBV needs time to fully apply the monetary policy with the operational target as interest rates (as in the approach of three IT countries) because the money market has been limited, and interbank interest rates have still been highly volatile (IMF, 2019b; IMF, 2022e). Therefore, in the preparation period for the IT framework, the SBV can

[88] So far, Vietnam formulated targets without a tolerance band (e.g., around 4.5% for 2023).

temporarily combine the operational targets of money volume with the interest rate regulation improvement. Simultaneously, the SBV must build up the necessary factors to develop the banking and financial market[89], establish an interest rate corridor, and choose a decisive policy interest rate. Until the SBV can regulate the short-term interbank rates in the set interest rate corridor, it can officially implement the policy following the operational goal of interest rates. Also, at that time, the SBV must consider eliminating administrative tools that can distort market conditions and credit allocation. This solution is similar to that of Indonesia during its transition period to full-fledged IT from 2000 to 2005. Mainly, BI utilized base money as its operational goal at the first stage of IT introduction in 2000. Then, BI officially switched to employing the BI rate as a core tool in 2005.

More specifically, the SBV must determine the key policy rate to signal its monetary policy stance. According to the experience of three Southeast Asian countries, after some adjustments, the central banks of these countries are choosing short-term (e.g., overnight, 1-day, or 7-day) repo/reverse repo rates as their primary policy rate. Besides, as analyzed in Chapter 3 on the operational monetary framework of SBV, the 7-day repo rate (specifically, the 7-day bid rate in OMOs) shows its essential role in guiding the interbank market rates, compared with other operating interest rates (i.e., refinancing rate and discount rate) in Vietnam. Notably, short-term interbank interest rates have closely tracked the movement of this interest rate in recent years. Consequently, the SBV can select the 7-day bid rate in OMOs to serve as the primary policy rate, following the approach taken by the three IT Southeast Asian central banks.

Additionally, the SBV should start setting up an effective interest rate corridor based on deposit and lending facilities, like three Southeast Asian countries. This would replace the current corridor system formed by refinancing and discount rates, resulting in improved regulation of market interest rates. Besides, the ceiling rate of the corridor should be the overnight lending rate in the interbank electronic payments and loans for making up capital shortfalls in the clearing payment for Credit Institutions (CIs) of the SBV, which is already available. Meanwhile, the floor rate (an interest rate applied to deposits made by CIs at the SBV) requires a regulation. So far, the SBV has not paid any interest on reserves or deposits of VND that exceed the minimum reserve requirements from CIs. Thus, to establish the new interest rate corridor system, the SBV should issue specific regulations regarding the interest rate on deposits of CIs at the SBV to create a floor rate. Moreover, in the early stages of IT, the SBV may

[89] Analyze in Section 7.1.3.

implement a wide interest rate corridor band to stimulate the interbank market and gradually narrow the range of this corridor over time.

In fact, the above upgrading for the operating framework of monetary policy will also help the SBV satisfy the condition of a well-functioning monetary policy transmission mechanism under IT (as listed in Section 2.3.2).

Technical and Forecasting Capacity

One of the critical elements of IT is a thorough decision-making process considering a variety of economic variables to attain the inflation goal and emphasizing the role of inflation forecast to conduct a forward-looking strategy. This element is indeed linked to the condition of an adequate analytical resource, including macro–forecasting models under IT (listed in Section 2.3.2).

In this regard, as discussed in Chapter 6, the SBV's technical capacity and database must improve in the IT implementation phase to catch up with the three IT Southeast Asian countries. Specifically, a Forecasting and Policy Analysis System (FPAS) must be completed as soon as possible to put it into operation for forecasting right from the early stages of IT. According to information from the SBV and IMF, this model system is almost completed. More specifically, the IMF's technical assistance program in building forecasting models and improving the analytical and forecasting capacity for SBV staff started in 2019, has been put to the test in late 2022, and is expected to be completed in 2024. During the deployment stage of the forecasting system, if there are deviations, they should be refined and corrected promptly to improve forecasting accuracy.

Simultaneously, regarding the database, the SBV needs to coordinate with credit institutions in collecting digital data to quickly update the fluctuations of the money markets, thereby making timely policy decisions. In addition, the SBV can learn from the experience of Southeast Asian central banks in conducting surveys on inflation expectations and monitoring financial market volatility to supplement information for analyzing and forecasting. Furthermore, because the General Statistics Office of Vietnam (GSO) manages the collection and calculation of CPI, the SBV should coordinate with the GSO in sharing information, upgrading the database system, and improving measurement methods of core inflation and headline inflation, thereby serving forecasting tasks and making decisions. Moreover, the fact that many agencies mention the inflation forecasts (e.g., the Ministry of Finance and the SBV) with different results (even if the

difference is small) can raise the public's doubts about the accuracy and consistency of the results. Therefore, the government should assign the calculation and publication of the inflation forecast to only the SBV. Meanwhile, if the Ministry of Finance wants to announce the inflation forecast, it should be consistent with the SBV. This will create consistency in information disclosure, thereby helping to better anchor inflation expectations.

Transparency and Communication

Increased transparency is a core component of IT. However, the transparency of the SBV is weaker than that of the three IT Southeast Asian central banks (as shown in Chapter 6). Although this element needs not be at high levels at the time of IT introduction, it must be upgraded during IT implementation. To do that, the SBV needs to focus on improving its communication's content and manner.

Regarding communication content, the SBV should clearly express its strong commitment to the inflation goal and publish the development and forecasts of inflation and related economic variables (once the forecasting system is completed), as in three IT countries. Furthermore, the SBV should provide a reasonable explanation in the event of any adjustments to the target levels. Additionally, the SBV can apply forward guidance (if possible), like Bank Indonesia and Bank of Thailand, to guide the market.

Regarding communication manner, the SBV should diversify its channels both in regular periodic and non-periodic communications. With regular channels, the SBV should increase the frequency of publications and reports on inflation, financial markets, and the banking system. Currently, the SBV only releases annual reports, but it should aim to publish two reports per year and gradually increase to four reports per year, following the practice of the three IT Southeast Asian central banks. Regarding press conferences and press releases, the SBV should also raise the frequency and improve the content quality to enhance communication with the public. Accordingly, improving press conferences by disclosing policy information, rationales of policy decisions, and promptly responding to the press is necessary (e.g., holding conferences immediately after SBV's Management Board meetings or in the event of any changes in monetary policy operations, following the practices of three IT Southeast Asian countries)[90]. Concerning non-periodic channels, strengthening seminars and dialogues with businesses (e.g., like the practices of central banks in Indonesia and the Philippines) will enable enterprises to

[90] Currently, the SBV holds press conferences only twice a year.

understand the policy orientations of the SBV better, facilitating market navigation. Additionally, the SBV should consistently update information on monetary and banking operations on its website in both English and Vietnamese versions for easy access by the public.

Accountability

The SBV's level of accountability is unclear and weaker compared to the three IT Southeast Asian central banks[91]. Thus, it is crucial to amend the existing Law on the SBV to enhance the central bank's accountability. This amendment should include a requirement for the SBV to directly report to the NA on monetary policy performance. Additionally, if the inflation target is not accomplished, the SBV should provide written explanations (such as through Open Letters) to both the Prime Minister and the NA, similar to the legislation of three IT countries. Furthermore, the SBV must establish and publish plans for returning inflation to the target. Implementing these measures will strengthen the SBV's accountability and ensure transparency in its actions under the upcoming IT.

7.1.3. Policy implications for other supportive conditions of IT in Vietnam

In addition to the above issues, IT implementation requires supportive conditions (see Section 2.3.2). Some of them are integrated into the above discussions (i.e., a well-functioning monetary policy transmission mechanism is linked to an improved operating framework, while an adequate analytical resource is linked to technical capacity). Hence, this section focuses on the remaining conditions related to the financial system and exchange rate and includes government coordination. Particularly, a sound financial system and a low-dollarized economy are important requirements to ensure a good environment for the effective operation of monetary policy within IT. Given these issues take time to satisfy, it is necessary to start improving them right from the IT preparation process.

Develop and monitor the financial system to enhance monetary policy transmission effectiveness

The Vietnamese government and the SBV must promote the development of the financial system while improving its efficiency and resilience, especially the banking system.

[91] As mentioned in Chapter 6, the accountability for monetary policy in Vietnam under the current law is shared between the Prime Minister and the SBV Governor.

In Vietnam, the financial system still heavily relies on banks, making the banking sector play a crucial and decisive role in the effectiveness of monetary policy transmission, primarily via interest rates and credit channels. Besides, in the aftermath of the COVID period, impaired loan ratios have significantly increased, necessitating the strengthening of supervision and loan restructuring. Moreover, Vietnamese banks' asset quality and capital adequacy are relatively weak compared to banks of IT Southeast Asian countries (IMF, 2022e). For instance, in 2022, the capital adequacy ratio in Vietnam was about 11.7%, whereas the figures for banks in Indonesia, the Philippines, and Thailand were 25.6%, 16.1%, and 19.5%, respectively[92]. Against this backdrop, the SBV should enhance the banking system's resilience by monitoring and promoting commercial banks to complete the adoption of Basel II promptly. As of December 2022, just about 20 out of 38 commercial banks in Vietnam have completely met Basel II standards, while most banks in the three IT Southeast Asian countries have completed Basel II for a long time and are applying Basel III. Thus, the SBV needs to promote further improving the banking sector in Vietnam to catch up with other countries in the region. According to the SBV's plan, when all commercial banks meet Basel II conditions, along with completing supervisory regulations, the administrative measure of imposing credit ceilings for bank-by-bank will be gradually relaxed and then lifted (IMF, 2019b; IMF, 2022e). At that time, the study suggests that the SBV should also gradually remove other administrative measures (e.g., the ceiling of deposit rates). This will support more efficient credit allocation and better regulation of interest rates according to the market mechanism. Also, these are necessary fundamentals for the SBV to effectively operate monetary policy following the interest rate mechanism under the IT framework.

Furthermore, while the banking system serves as the backbone of the financial market, the capital market is rapidly developing to provide medium-term and long-term capital to the economy. However, there is a concern over increasing financial systemic risks, particularly in Vietnam's real estate sector and the corporate bond market (IMF, 2022e). To address these challenges, it is imperative to reinforce the macroprudential framework in the country. This involves enhancing the institutional setup by establishing a formal Committee to oversee overall financial stability objectives, following the experience of three IT countries. Besides, the SBV should introduce and implement macroprudential instruments (e.g., loan-to-value (LTV) limits or debt-service-to-income ratios, and countercyclical capital buffers), especially to mitigate risks emerging from the real estate sectors, akin to the practices adopted by three IT Southeast

[92] Data collected from https://www.ceicdata.com/

Asian countries. Simultaneously, the Vietnamese government must closely monitor and improve transparency in the corporate bond market to bolster investor confidence. Moreover, ensuring the effective enforcement of securities legislation and regulations would further enhance the safety and credibility of the capital market.

Also, the Ministry of Finance needs to reinforce the government bond market. This market provides a reliable and standardized valuation basis for financial instruments and promotes the overall development of the financial markets. Moreover, a well-developed government bond market enhances the government's capital mobilization ability for socio-economic goals. Additionally, it plays a crucial role in shaping the yield curve. Consequently, it becomes necessary to explore solutions for further market development. Firstly, the Ministry of Finance should upgrade the structure of the government bond market by increasing the proportion of medium and long-term bonds. This will offer investors a broader range of options and attract long-term investments. Secondly, the Ministry of Finance can establish a repurchase market with government bonds as collateral to support the volume of bonds issued and promote the development of the primary bond market. Thirdly, the Ministry of Finance must develop a comprehensive system of indicators to evaluate and monitor the market (both government bond and corporate bond markets), providing market participants with valuable insights to observe and predict market movements. This will allow them to adjust their investment portfolios promptly if necessary. Simultaneously, cooperation with foreign/international credit rating agencies is vital. These agencies can professionally, transparently, and effectively assess the operations of the financial market, providing valuable information to market participants.

Generally, critical tasks include developing an efficient and secure banking system, developing macroprudential tools under the responsibility of the SBV, and developing and supervising the capital market (both the government bond market and corporate bond market) under the responsibility of the Ministry of Finance. Additionally, the SBV should collaborate with the government to further develop an early financial warning system. This collaborative effort will play a key role in enhancing the prevention of systemic financial risks.

Limit dollarization and develop the FX market to facilitate the application of a flexible exchange rate regime

From the experience of IT Southeast Asian countries, a more flexible exchange rate regime is needed in Vietnam for future IT introduction. Particularly, as mentioned in Chapter 6, the SBV has increased the exchange rate fluctuation band from +/-3% to +/-5% from October 2022 and

applied more FX forward contracts for FX intervention. Even so, it is necessary to continue to strengthen the two-way flexibility of the exchange rate and gradually move toward a flexible exchange rate regime without a pre-announced exchange rate path.

Furthermore, reducing high dollarization is another essential step to enhance the effectiveness of monetary policy and reduce the need for FX interventions to stabilize the exchange rate under IT. In turn, achieving and maintaining price stability will contribute to decreasing dollarization, as there is a correlation between high inflation and increased dollarization (Park and Son, 2022). In this context, the Vietnamese authorities have been actively working to limit dollarization in the economy. Specifically, measures include the issuance of the Ordinance on Foreign Exchange in 2005, amendments in 2013 to specify subjects and transactions on foreign currency, and regulations to limit the scope of foreign currency loans. Furthermore, the SBV has set a maximum interest rate for mobilizing USD at 0% since December 2015 (Decision 2589/QD-NHNN) to reduce the attractiveness of the USD and strengthen the VND-denominated deposits. The government has also played its part by conducting fiscal discipline to decrease foreign currency-denominated debt, thereby lowering dollarization in the government sector. Additionally, the government focused on developing the bond market in local currency rather than heavily relying on issuing government bonds in foreign currency (Pham, 2017). These combined efforts have significantly reduced financial dollarization in Vietnam. For example, the ratio of foreign currency loans to total loans decreased from 20% in 2011 to 6 % in 2019, and the ratio of foreign currency deposits to total deposits fell from 23.7% in 2009 to 7.87% in 2021. However, cash dollarization in the economy remains an issue (Pham, 2017). Particularly, IMF data shows a still-significant level of cash dollarization, with total holdings of USD 60 billion, equivalent to about 25% of GDP in 2019 (IMF, 2019b). This suggests that paying closer attention to foreign currency in circulation is necessary. To address this ongoing challenge, stricter enforcement and coordination among management agencies and market surveillance forces are needed to prevent illegal payment transactions in USD on the black market (the parallel market). Furthermore, whenever the economy is unstable, the FX market will be disturbed, and the speculative psychology of hoarding foreign currency will increase sharply, making the gap between the black market's exchange rate and the official exchange rate larger and larger, thus putting pressure on the exchange rate and monetary policies of the SBV.

Against this backdrop, the SBV must further develop the hedging tools in the FX market, encourage the dissemination of knowledge about hedging tools and measures against FX risks

for businesses and people, and require commercial banks to assist the economic entities in accessing these instruments via advisory and support services to weather the exchange rate fluctuations, following the experience of IT countries (e.g., an FX ecosystem in Thailand). At the same time, a comprehensive legal framework for operating hedging tools will build public and business confidence, thereby reducing the psychology of hoarding foreign currency and limiting the parallel market. Besides, a more official flexible exchange rate regime of the SBV will allow for a reduction in the exchange rate gap between the official market and the parallel market, helping to limit currency manipulation. Meanwhile, the Ministry of Industry and Trade, the Department of Industry and Trade of provinces, the police force, market management and surveillance agencies should intensify inspection and control of parallel markets and illegal foreign currency trading.

In the long term, building public trust in local currency stability through maintaining a stable economic environment with low inflation is crucial. Once the dollarization issue is well controlled, the official FX market can mobilize foreign currency supply sources, increase liquidity, and accurately reflect foreign currencies' actual demand and supply. This will create favorable conditions for applying a flexible exchange rate regime based on market mechanisms.

The Government's Coordination

Apart from aiding in the development of capital markets, contributing to stability across the financial system, and supporting the reduction of dollarization, as discussed above, the government's collaboration is also indispensable for the execution of structural policies to foster labor productivity and facilitate distribution and provision of goods. This will help alleviate inflationary pressure from the supply side. Besides, given some administered-price items, the government should continue sharing information and plans on administered-price policy with the SBV for price stability goals. However, in the long term, gradually reducing the government's control on administered-price items and reducing the number of administered-price items in the CPI basket is necessary to reflect market mechanism, helping the SBV to properly assess market supply and demand in making policy decisions. At the same time, the government's fiscal sustainability helps preserve the SBV's independence (as mentioned earlier). These measures will support IT implementation.

7.2. Roadmap and Specific Tasks

Based on the above policy implications, the dissertation proposes three phases for IT application in Vietnam, namely: (i) preparation, (ii) introduction and initial implementation, and (iii) development. Additionally, specific tasks for each agency in each period will be indicated.

7.2.1. Phase 1: Preparation for IT

In general, the tasks in Phase 1 are to prepare certain groundwork for introducing IT in Phase 2. These tasks include preparing institutional commitments to the primary objective of price stability, determining a specific numerical inflation target level to announce, building a forecast model to support IT deployment, preparing a forward-looking strategy to achieve the set targets, and some transparency and accountability mechanisms. Concurrently, the Vietnamese authorities must continue strengthening the core preconditions and initially establish the remaining supportive conditions for functioning an IT regime.

(i) For the National Assembly (NA)

The main task of the NA involves revising laws. During the preparation period for IT, the NA must consider the provisions and contents that need to be supplemented and amended for the current Law on the State Bank (SBV), aiming at passing an official amendment in Phase 2. First, the NA needs to adjust the articles of the SBV's independence by granting complete instrument autonomy to the SBV. Second, it is necessary to add a regulation that the pursuit of low and stable inflation must be the overarching goal of monetary policy. Third, the article regarding the SBV's advances to the government budget should be stricter by adding limitations on the cases and the amounts in which the SBV provides credits to the Vietnamese government and imposing measures (if possible) if the government fails to repay the advances on time or forbidding the extension of credit to the government. Fourth, the SBV's accountability clause needs to be revised. Specifically, the NA should replace the existing article that the Prime Minister (or authorizing the SBV's Governor) is responsible for reporting on monetary policy to the NA with a new article requiring the SBV to report directly to the government (Prime Minister) and the NA. Additionally, an article on explanation in writing (e.g., Open Letter) from the SBV to the Prime Minister and the NA should be added in case inflation deviates from the target.

In addition to considering the amendment to the Law on the SBV, the NA can contemplate regulations on the budget deficit ceiling (i.e., 3% of GDP) in the Law on State Budget. Besides, exceptional rules should only apply in times of severe crisis (e.g., the COVID-19 pandemic) to prevent indirect fiscal dominance.

(ii) For the Government

The Vietnamese government's support is also essential for the SBV's preparation for an IT framework.

Firstly, while waiting for the official amendment of the Law on the SBV from NA, the government can stress the primary objective of monetary policy as price stability in its Annual Resolutions to guide the SBV's annual monetary policy implementation. Besides, the government should continue to lessen the pressure regarding the high economic growth target placed on the monetary policy in practice.

Secondly, the government should continue transferring de facto instrument autonomy to the SBV while awaiting the amendment of the law, covering decisions on money volume and complete authority to conduct interest rate policies, exchange rates, OMOs, and other monetary measures to achieve the inflation target without government interference.

Thirdly, gradual restoring fiscal discipline to pre-COVID levels, aiming for a deficit of about 3% in Phase 2, is necessary. To achieve this, the government must increase the effectiveness of public investment and spending, cut back on wasteful expenditure, implement more targeted subsidies, gradually reduce control on administered-price items, and reform tax policies. Additionally, rather than relying on the SBV for financing, the government should focus on developing the government bond market to mobilize resources more effectively from the private sector.

Fourthly, the government should assign the publication of the official inflation forecast to the SBV. In addition, the government must request the GSO to strengthen the sharing of information and databases with the SBV for a consolidated data system. Meanwhile, the GSO must adopt modern and accurate methods while regularly updating the CPI basket to enhance the accuracy of core and headline inflation calculations, thereby supporting the SBV's inflation forecasting efforts.

(iii) For the SBV: The SBV plays a crucial role in shifting the existing monetary policy framework into an IT framework.

Regarding preparatory works to introduce IT in Phase 2, the SBV must propose an inflation target of 3.5% ± 1.5 pp for headline inflation to the government. This proposal requires approval from the government and the NA before announcing the implementation of IT. Besides, the

SBV can choose a target horizon of approximately two years. Next, the SBV must reselect the key policy rate, which should be the 7-day bid rate in OMOs, to signal its monetary policy stance under the upcoming IT. Particularly, the SBV needs to focus significantly on utilizing the 7-day bid rate, allowing it to gradually replace the refinancing rate as the primary rate starting from this stage. Also, an initial inflation forecasting model must be built in this phase to serve the planning and announcement of the monetary policy strategy in Phase 2. Furthermore, the SBV must prepare content to publish the Inflation Reports at least twice a year (instead of the current Annual reports) to clarify issues about monetary policy decisions, inflation forecasts, and a forward-looking strategy. Simultaneously, the contents of press releases and press conferences to announce IT applications must also be prepared in this phase.

In parallel with the preliminary preparations, the SBV and relevant authorities must cooperate to strengthen three core preconditions and develop other supportive factors.

Firstly, the SBV should implement a more flexible exchange rate policy by gradually widening the exchange rate band during this period (e.g., from +/-5% to 8-10%). Besides, to regulate market expectations and possibly mitigate dollar-hoarding psychology, the SBV can consider allowing the local currency to have a slight nominal appreciation against the USD within the band instead of continuous depreciation. Additionally, FX interventions must be transparent and reasonable to avoid misunderstandings that the SBV is pursuing an exchange rate targeting. Simultaneously, to establish a favorable environment for applying a flexible exchange rate regime mentioned above, the SBV should focus on reinforcing the liquidity of the FX market, strengthening the legal framework for hedging instruments, and continuing efforts to limit dollarization. The SBV should also require commercial banks to provide further consulting services to manage FX risks for businesses and citizens. After that, the SBV can gradually remove the exchange rate band restrictions in Phase 2.

Secondly, the SBV needs to focus on developing the banking system and monitoring systemic risks to effectively support monetary policy transmission (especially via interest rate and credit channels) under the upcoming IT. Accordingly, the SBV must urge commercial banks to meet Basel II standards quickly. Also, the SBV can introduce basic macroprudential tools from this phase (e.g., a Loan-to-value ratio limit to the real estate sector) to prevent systemic financial risks.

Thirdly, reforming the operating framework is crucial for the SBV's transition to the IT framework. During this phase, the SBV can temporarily combine the operational goals of

monetary volume and interest rate management while establishing the necessary foundations (e.g., a sound financial system and an interest rate corridor to regulate interbank rates) for a complete switch to the core operational target of interest rates in Phase 2.

In this stage, the SBV must initially create a new interest rate corridor to steer interbank rates. To that end, the SBV should introduce an interest rate for CIs' deposits at the SBV to form the lower bound of the corridor[93]. Particularly, the SBV can enforce a wide interest rate corridor at the first stage and then gradually narrow the corridor range. Additionally, it is crucial to establish a connection between the interest rate corridor and the key policy rate (e.g., setting the floor interest rate equal to the 7-day OMO bid rate minus 100 basis points and the ceiling interest rate equivalent to the 7-day OMO bid rate plus 100 basis points). This allows any change in the primary policy rate to be reflected simultaneously in the interest rate corridor, thereby enhancing the guidance to market interest rates, as experienced by the three Southeast Asian countries.

Fourthly, the SBV must actively coordinate with the IMF to complete the Forecasting and Policy Analysis System (FPAS) soon and boost the technical capacity of SBV staff. Also, the SBV should constantly improve the database and employ digital technology to survey inflation expectations and update financial market movement and exchange rate development data to serve forecasting tasks.

Generally, the purposes of Phase 1 are to prepare some preliminary works for introducing IT and to reinforce the core preconditions in practice. Meanwhile, other supportive conditions are initially established in Phase 1.

7.2.2. Phase 2: Introduction and Initial Implementation of IT

Completing Phase 1 takes about one to two years. Simultaneously, the forecasting system (FPAS) for IT implementation in Vietnam will be completed in 2024. Thus, if the Vietnamese authorities prepare for IT in 2024, they can introduce IT in early 2025/2026 and start Phase 2. Accordingly, the SBV will officially announce the application of the IT regime. The announcement includes expressing a strong commitment to pursuing price stability, declaring an inflation target of 3.5% ± 1.5 pp for the initial years of IT, officially announcing the 7-day bid rate in OMOs as the primary rate to convey the monetary policy stance, stating specific

[93] Meanwhile, the ceiling rate (the upper bound of the corridor), which should be the lending rate of the SBV to CIs, is available.

(forward-looking) monetary policy plans to achieve the pre-announced targets, publishing the first Inflation Report covering inflation forecasts (based on the FPAS mentioned above), and committing to explaining to the public if inflation deviates from the target. After the IT announcement, the remaining gaps compared to three IT Southeast Asian countries (as analyzed in Chapter 6) will be actively improved for an effective IT framework. Phase 2 will be about the first five years of IT adoption. The detailed goals of this Phase are below.

(i) For the National Assembly

During Phase 2, the NA must formally pass the amendment to the Law on the SBV, thereby reinforcing the legal framework for IT implementation. According to the discussion in Phase 1, amendment content includes articles on the price stability objective (low and stable inflation), the SBV's instrument autonomy, limits on the SBV's financing to the government, and the SBV's accountability. Meanwhile, the decision-making mechanism for the inflation targets specified in the current Law on the SBV (where the SBV proposes the inflation target and submits it to the government and the NA for approval) will be retained because coordination in setting the inflation targets will reinforce the government's consensus and support for the set targets, as observed in the case of three IT Southeast Asian countries.

(ii) For the Government

The Vietnamese government should actively support the SBV in generating a favorable environment to apply IT effectively. More specifically, it is necessary to continue to alleviate pressure on the SBV regarding the economic growth target, allowing the SBV to prioritize the goal of price stability within the IT framework. Simultaneously, the government should strive to reduce the budget deficit to about 3% of GDP in this phase, thereby preventing indirect fiscal dominance.

In addition, the government requests the Ministry of Finance to continue developing the bond market while strengthening supervision and management of the capital market, contributing to ensuring the stability and efficiency of the overall financial system. At the same time, Vietnam can establish a formal Financial Stability Council (including the SBV Governor, the Minister of Finance, and the leader representatives of relevant agencies) to strengthen the cooperation for the holistic management of financial stability.

Furthermore, to support the SBV in the de-dollarization, the government continues to ask the Ministry of Industry and Trade, the Department of Industry and Trade of provinces, the police

force, and the market management and surveillance agencies to reinforce inspection and supervision of the parallel market, and severely handle illegal foreign currency trading activities. Simultaneously, the government must harmoniously coordinate with the SBV to maintain a stable macroeconomic environment to boost the public's belief in the economic institutions and the value of the domestic currency, thereby limiting the psychology of hoarding foreign currencies. All will assist in creating a favorable environment for the central bank's IT framework operation.

(iii) For the SBV

The mission of the SBV in Phase 2 is to build its credibility in implementing a new monetary policy framework (IT) by establishing a practical operational framework, strengthening technical capacity, promoting transparent and timely communication, and expressing its accountability.

First, a well-functioning operational framework and target system under the IT regime should be officially established and improved during this phase. Accordingly, the ultimate objective is inflation targets, with the immediate target being inflation forecasts (replacing monetary supply and credit growth targets), and the operational target will be the short-term interest rate. To that end, the SBV must continue to complete the interest rate corridor system proposed in Phase 1, which aims to steer interbank interest rates with less volatility, ensuring falls within the established corridor. Simultaneously, the SBV should continue strengthening OMOs to support the primary policy rate (the 7-day OMO bid rate) (e.g., increase trading sessions and expand participating members). Additionally, as the banking system becomes more consolidated and well-capitalized, accompanied by enhanced supervision, administrative measures (including deposit and lending rate caps, aggregate credit growth limitation, and credit caps for each bank) will be gradually relaxed during this period. This move will improve the efficiency of credit allocation according to market mechanisms, thereby promoting the transmission efficiency of the policy rates. At that time, the SBV can officially employ the interest rate as the main operational goal for monetary policy, replacing the money volume (i.e., base money, credit targets).

Second, on technical issues, in addition to publishing the FPAS for inflation forecasting (as mentioned above), the SBV needs to constantly improve the model system's accuracy, enhance the technical capacity of staff, and upgrade the database (coordinate with the GSO).

Third, further improving communication and transparency is critical for the SBV to anchor inflation expectations under its IT framework. Specifically, the SBV can improve its website by updating information in both English and Vietnamese versions to ensure easy access for people. Currently, the content of the SBV's website in the English version is quite limited and not updated as quickly as the Vietnamese version. In addition, with the completion of the forecasting system FPAS in early IT adoption, the SBV should publish information about the inflation forecast (and related economic variables, if possible) on its website and in publications. To enhance transparency further, the SBV should increase the frequency of communication and diversify communication channels. More specifically, during the early stage of IT, the SBV must publish the Inflation Report Publication twice a year, then increase it to four times per year (quarterly) in Phase 3. Besides, holding press conferences after the SBV's Management Board meetings on monetary policies to announce policy changes (if any) and answer questions from the press can be considered. In tandem, the SBV can expand dialogues and seminars with businesses and market participants to support policy guidance.

Fourth, the SBV must demonstrate high accountability during IT implementation. If the inflation target is not achieved, the SBV must publicly explain the reasons and give plans to return inflation to the target via press releases and conferences. After amendments to accountability in Law on the SBV are enacted during this stage, the SBV must report regularly (and when requested) to the Prime Minister and the NA on monetary policy performance and write an Open Letter if the target is missed (besides an explanation to the public).

In addition to the above elements of the IT framework, the SBV must complete the supportive factors that have not been fully met in Phase 1 to boost the effectiveness of IT. Regarding a healthy financial system, the SBV must continue to develop and monitor the credit institutions. Special attention should be given to supervising and resolving non-performing loan issues, particularly those related to the real estate sector. Besides, it is necessary to ensure that most commercial banks complete Basel II and can begin applying Basel III during this phase. Additionally, the SBV should develop macroprudential tools further to achieve financial stability objectives (besides the LTV ratio proposed in Phase 1). For example, a countercyclical capital buffer tool can be introduced. Moreover, coordination with the Ministry of Finance, the agency in charge of the capital market, is crucial to developing a comprehensive early warning indicator system for the entire financial system's stability and efficiency. This, in turn, will strengthen monetary policy transmission effectiveness. Concerning a flexible exchange rate regime, the SBV should continue completing the framework for hedging tools in the FX market,

reducing hedging costs and encouraging enterprises to use hedging instruments. Simultaneously, maintaining a low and stable inflationary environment is needed to strengthen the public's belief in the Vietnam dong (VND) value. Furthermore, the SBV must continuously coordinate with other agencies (e.g., market management forces) in anti-dollarization tasks. Next, building upon a sound and stable financial system, an improved FX market, and a low-dollarized economy, the SBV can consider removing the exchange rate band in this phase. This would involve adopting a managed-floating exchange rate without a pre-announced path. Such a move will help ensure that the inflation objective is the overarching target and anchor of monetary policy under IT rather than the exchange rate.

7.3.3. Phase 3: Development of IT

In the IT implementation process, situations that require fine-tuning and flexibility of the IT framework will inevitably arise. Thus, in addition to continuing to deploy solutions as in Phase 2, upgrading the IT framework and adjusting when necessary is advisable. In other words, after the initial implementation phase, the Vietnamese authorities must reinforce the foundations of the IT framework. Simultaneously, they can fine-tune the IT to suit the changing domestic and international environment.

During Phase 3, the government's tasks are mainly supportive of a favorable environment for the efficiency of the IT framework, including maintaining budgetary discipline, promoting capital market development to ensure financial stability, and continuing support to the SBV in de-dollarization. Also, the government should continue liberalization on administered prices to limit distorting market supply and demand, letting the SBV increase monetary policy's role in controlling price stability. Besides, the NA can pass the amendment with the Law on State Budget specifying a fiscal deficit cap of 3% of GDP (with only minimal exceptions, for example, during a crisis) to enhance the government's fiscal sustainability, further reinforcing the absence of fiscal dominance. Meanwhile, the critical responsibilities in Phase 3 - IT framework development lie mainly with the SBV. Specifically, drawing from the experience of three IT Southeast Asian countries and considering the situation of Vietnam, it is necessary to pay attention to the following issues.

Firstly, the SBV should upgrade its initial IT framework during implementation (e.g., in terms of the target band and mid-point target, operational framework regarding key policy rate instruments and interest rate corridor, effective communication, and transparency) to boost IT effectiveness. Regarding targets, the SBV needs to narrow the inflation target band from +/-1.5

pp to +/-1.0 pp to better anchor inflation expectations and lower the mid-point target from 3.5% to 3%, in line with Indonesia and the Philippines' approach toward a low and stable medium-term inflation level. Concerning the operational framework, at an early stage of IT adoption, the interest rate corridor band can be wide (i.e., at +/-100 basis points of the policy rate -the 7-day bid rate), then in Phase 3, the SBV can narrow the band to +/- 50 basis points of the primary policy rate, aiming at closely managing interest rate fluctuations. Simultaneously, the SBV should continuously develop the banking system and monitor interbank interest rates to ensure they stay within the (new) interest rate corridor. Furthermore, to enhance the interest rate operation under IT, during Phase 3, the SBV must eliminate administrative measures (e.g., credit caps for overall and for banks, interest rate ceilings on short-term deposits). Regarding transparency, the SBV should continuously upgrade the communication channels by holding regular press conferences to clarify monetary policy decisions and respond to the press. Furthermore, while the SBV only needs to increase the frequency of Inflation Reports from one publication to two per year in Phase 2, it should aim to release quarterly Inflation Reports (as done in Thailand and the Philippines) and then monthly Inflation Reports (similar to Indonesia) during Phase 3. Other communication channels (e.g., seminars, dialogue, television, and the SBV's website) should be continuously upgraded. Also, the SBV can apply forward guidance, given an enhanced forecasting system. In all cases, like the three IT Southeast Asian central banks, the SBV should promote effective communication, explaining any evolutions in its IT framework. Following this approach ensures transparency and helps the SBV enhance credibility.

Secondly, as price stability is the primary objective under IT, the SBV should be cautious of supply shocks that may occur during IT implementation. Indeed, the post-COVID era has taught us that supply shocks should not be underestimated, as a series of continuous shocks can transform temporarily high inflation into a persistent issue. Hence, it is essential for the SBV to adopt a proactive monetary policy to mitigate the spreading effects of supply shocks, similar to the experience of Thailand and Indonesia. In tandem, the government can support and facilitate the circulation and supply of goods and enhance productivity to alleviate price pressures stemming from the supply side, as observed in Indonesia.

Thirdly, amid shocks that could cause inflation to deviate from the target, the SBV may consider expanding the target horizon but remaining consistent with the set target (avoiding raising the target level) to demonstrate a solid commitment to price stability, like the experience of the IT

Southeast Asian countries. This will help anchor inflation expectations, reducing the cost of bringing inflation back to target.

Fourthly, while price stability remains a core pillar of IT, global uncertainty necessitates a certain level of flexibility in the IT framework and calls for coordinated policies to ensure financial stability besides price stability, thereby supporting sustained growth, as seen in the practices of three IT Southeast Asian countries. Therefore, the SBV's IT implementation should also pay attention to this issue. To that end, similar to three IT central banks, the SBV must coordinate a series of policy tools (i.e., monetary policy, exchange rate policy, capital flow management, and macroprudential policy) in a consistent and synchronous manner. In fact, a spectrum of tools will help the SBV can ease potential conflicts between the objectives. Significantly, the SBV should bear in mind that "price stability" is the overriding objective of monetary policy. Regarding exchange rates, while supporting a de facto flexible regime under the IT framework, the SBV can employ (occasional) FX interventions to prevent disorderly market conditions and excessive exchange rate fluctuation. However, any FX intervention should be reasonable and transparent to indicate that the SBV only smooths out the short-term undue exchange rate volatility (that harms price and financial stability) but does not target any specific exchange rate level. For capital flow management, the SBV can carry out the process of liberalizing capital flows as committed. Still, it is essential to manage short-term and volatile capital flows and enhance the attraction of long-term capital flows. Concerning financial stability, continued efforts to improve the macroprudential framework are imperative. Accordingly, the SBV should further develop macroprudential tools (beyond the LTV ratio and a countercyclical capital buffer introduced in Phases 1 and 2) to assist monetary policy tools in achieving overall macroeconomic stability. In addition, the emphasis on effective communication is essential for both the goal of price stability and financial stability. Therefore, following the three IT central banks, the SBV should publish a separate publication on Financial Stability to help the market have a clear view of market development and potential systemic risks. These are practical issues that the SBV needs to notice because, in the context of the rapidly integrating financial market, the IT framework in Vietnam will not be successful if it only focuses on price stability but ignores financial system stability.

Fifthly, with the development of the IT framework, although the SBV will have an increasing level of independence (especially after the amendment of the Law on SBV is passed), coordination with the government is still necessary. Indeed, as analyzed earlier, the government's policies (e.g., policies on administered-prices items, policies supporting the

supply and distribution of commodities via enhanced logistics and high productivity) influence inflationary outcomes, and the government's capital market management also affects the overall stability of the financial system. In other words, while the SBV will have high autonomy, its policies are part of a macroeconomic policy mix (e.g., monetary, structural reform, fiscal policies) aimed at achieving the goals of economic development and stability. Therefore, the SBV can closely coordinate with other government agencies (e.g., Ministry of Finance, Ministry of Industry and Trade, and Ministry of Planning and Investment) in sharing information and plans to ensure harmony between monetary and other macroeconomic policies, thereby successfully attaining the end goals. At the same time, the institutional framework for the Financial Stability Council (as proposed in Phase 2) should be consolidated for overall financial stability, with a leading role of the SBV.

In summary, after the IT introduction in Phase 2, the IT framework of the SBV can be further improved during implementation in Phase 3, based on the following central components: (i) inflation targeting is always the core monetary policy objective, (ii) combining monetary policy with macroprudential policy to increase the effectiveness of policy transmission and sustain macroeconomic stability, (iii) employ capital flow management and exchange rate policy to support macroeconomic stability, (iv) improve policy coordination between the government and the SBV to accomplish the stability of the monetary and financial system, and (v) boost the policy communication strategy effective as a tool for IT framework.

Conclusion

The dissertation has provided an in-depth study of IT in emerging and developing countries in Southeast Asia and issues of applying IT in Vietnam. Remarkably, given the shortcomings of the current monetary policy framework in Vietnam, considering an IT framework becomes essential as it effectively raises monetary authorities' credibility and improves monetary policy's efficiency in various emerging and developing countries (e.g., Indonesia, the Philippines, and Thailand). Moreover, even amid significant shocks like the GFC or the COVID-19 pandemic, the IT framework still demonstrates its relevance. This further underscores its potential as a beneficial option for Vietnam's monetary policy. Adopting IT can address existing limitations and lead to more robust and effective monetary policy management, further boosting macroeconomic performance in Vietnam.

Specifically, Chapter 2 outlines the fundamental concepts and challenges that arise when an emerging and developing country applies an IT framework. Additionally, Chapter 3 conducts a specific analysis of the Vietnamese context, highlighting compelling reasons for considering a switch to an IT framework in this country. However, the applicability of IT in Vietnam remains controversial due to the essential prerequisites required for its application. Furthermore, studies on IT frameworks for emerging and developing countries in Southeast Asia are limited.

Against this backdrop, the findings of Chapter 4 indicate that Vietnam can introduce an IT regime by comparing and evaluating its current performance with three IT Southeast Asian countries (i.e., Thailand, Indonesia, and the Philippines) at the time of their IT application in fulfilling three core preconditions of IT including (i) priority of inflation goal, (ii) central bank's instrument autonomy, and (iii) absence of fiscal dominance. This result seems to contradict existing studies because previous research stated that IT adoption was not appropriate for Vietnam at the time of the study (To et al., 2012) or that Vietnam was not a candidate for IT introduction yet (Hanh, 2019). However, it is important to note that the two mentioned studies have limitations[94]. For example, To et al. (2012) could not update the improvements in institutions, the central bank's independence, fiscal issues, the new exchange rate regime since 2016, and the recent evolution of inflation in Vietnam. Meanwhile, Hanh (2019) employed evaluation variables and arguments deemed unreasonable because the author required a close and robust link between monetary supply and inflation, exchange rate and inflation, and refinancing rate and inflation for the IT application in Vietnam. In fact, the condition of a well-

[94] Details in Section 1.2.

functioning monetary policy transmission mechanism of monetary policy tools does not need to be highly satisfied before IT. It can be improved over IT implementation, so it should not hinder IT introduction[95]. Therefore, the conclusion of To et al. (2012) and Hanh (2019) may be incorrect. In this context, this research reveals that the fulfillment of critical prerequisites for IT application in Vietnam currently is reasonable compared to the three IT countries in Southeast Asia at the time of their IT introduction. Therefore, Vietnam can adopt an IT framework.

Furthermore, although introducing an IT framework in Vietnam is feasible, paying attention to the preparation and implementation process is still necessary to apply this framework most effectively. Therefore, learning from the experiences of other countries, especially emerging countries in the Southeast Asia region- where Vietnam is located, is needed. Based on this idea, Chapter 5 applies the case study method to investigate the issues of setting and implementing a successful IT framework in three Southeast Asian countries: Thailand, Indonesia, and the Philippines. The study also addresses recent challenging times, such as the COVID and post-COVID periods, thereby contributing a valuable addition to the existing literature on IT applications in emerging and developing countries. Additionally, for the specific case of Vietnam, by comparing its current monetary policy framework and related issues with the existing mature IT frameworks of three Southeast Asian countries, Chapter 6 shows considerable gaps between Vietnam and these countries in terms of institutions, monetary policy operating framework (e.g., goal setting, instruments), technical capacity of the central bank, transparency and accountability, and policy coordination. To bridge these gaps during its upcoming IT implementation, Vietnam authorities must make continued efforts, aiming at conducting IT efficiently and bringing Vietnam's monetary policies in line with the best practices of those countries.

Besides, the scarcity of studies on IT adoption paths in Vietnam emphasizes the significance of Chapter 7's contribution. The chapter enhances the literature by presenting a comprehensive roadmap for establishing an IT framework in Vietnam. It consists of three pivotal stages: preparation (Phase 1), initial implementation (Phase 2 – about the first five years of IT adoption), and development afterward (Phase 3). Particularly, Phase 1's task is preparing the preliminary work for introducing IT in Phase 2. After that, the SBV will officially announce applying an IT framework, and during Phase 2, the authorities will focus on building up the core elements of the IT framework. Meanwhile, Phase 3 plans for constantly upgrading the

[95] Also, IT adoption, in reverse, can motivate monetary policy reform, enhancing monetary policy transmission in emerging and developing countries (Brandao-Marques et al., 2020).

(initial) IT framework and provides essential notes on IT deployment amid a volatile global context. These stages collectively play a crucial role in ensuring successful IT adoption.

However, this dissertation still has some limitations, thereby opening future research directions. Specifically, this dissertation mainly focuses on Vietnam and inflation-targeting emerging countries in Southeast Asia, while studies of IT in other regions, such as Africa, or its applications for low-income countries are also limited and require attention. Moreover, given the volatile global economic and financial environment, there is a need for further predictive studies on potential shocks in IT implementation, particularly for emerging and developing countries. Exploring these aspects can yield valuable insights and help bolster the effectiveness of the IT framework further.

References

Adler, G., & Mano, R. (2016). The Cost of Foreign Exchange Intervention: Concepts and Measurement. *IMF Working Papers, 2016*(089). doi:10.5089/9781484323076.001

Agénor, P. R. (2000). *Monetary policy under flexible exchange rates: an introduction to inflation targeting* (Vol. 124). World Bank Publications. doi:/10.1596/1813-9450-2511

Agénor, P. R., & da Silva, L. A. P. (2019). *Integrated inflation targeting-Another perspective from the developing world.* Bank for International Settlements.

AI Rasasi, M., & Cabezon, E. (2022). Uzbekistan's Transition to Inflation Targeting. *IMF Working Papers, 2022*(229).

Aissa, M. S. B., & Rebei, N. (2012). Price subsidies and the conduct of monetary policy. *Journal of macroeconomics, 34*(3), 769-787.

Aizenman, J., Chinn, M. D., & Ito, H. (2008). *Assessing the Emerging Global Financial Architecture: Measuring the Trilemma's Configurations Over Time*. NBER Working Paper No. 14533.

Ajello, A., Laubach, T., Lopez-Salido, D., & Nakata, T. (2016). *Financial Stability and Optimal Interest-Rate Policy.* Finance and Economics Discussion Series 2016-067. Washington: Board of Governors of the Federal Reserve System.

Alamsyah, H., Joseph, C., Agung, J., & Zulverdy, D. (2001). Towards implementation of inflation targeting in Indonesia. *Bulletin of Indonesian Economic Studies, 37*(3), 309-324.

Aliyu, S., & Englama, A. (2009). Is Nigeria Ready for Inflation Targeting . *Journal of Money, Investment and Banking, 11*, 27-44.

Alvarez-Plata, P., & Garcia-Herrero, A. (2008). *To dollarize or de-dollarize: Consequences for monetary policy.* German Institute for Economic Research Discussion Papers 842. DIW Berlin.

Anwar, S., & Nguyen, L. P. (2018). Channels of monetary policy transmission in Vietnam. *Journal of Policy Modeling, 40*(4), 709-729.

Araujo, G. S., & Gaglianone, W. P. (2023). Machine learning methods for inflation forecasting in Brazil: New contenders versus classical models. *Latin American Journal of Central Banking, 4*(2), 100087. doi:10.1016/j.latcb.2023.100087

Arora, V. B. (2000). IV Monetary and Exchange Rate Policy. In *Philippines: Toward Sustainable and Rapid Growth Recent Developments and the Agenda Ahead.* USA: International Monetary Fund. doi:10.5089/9781557758613.084

Arsić, M., Mladenović, Z., & Nojković, A. (2022). Macroeconomic performance of inflation targeting in European and Asian emerging economies. *Journal of Policy Modeling, 44*(3), 675-700.

Arslan, Y., & Upper, C. (2017). Macroprudential frameworks: implementation and effectiveness. *BIS Papers, 94*, 25-47.

Arwatchanakarn, P. (2017). Structural vector autoregressive analysis of monetary policy in Thailand. *Sociology Study, 7*(3), 133-145.

Bangko Sentral ng Pilipinas (BSP). (2002). *Annual Report.* Manila: BSP.

Bangko Sentral ng Pilipinas (BSP). (2006). *Annual Report.* Manila: BSP.

Bangko Sentral ng Pilipinas (BSP). (2013). *Annual Report.* Manila: BSP.

Bangko Sentral ng Pilipinas (BSP). (2014). *Annual Report.* Manila: BSP.

Bangko Sentral ng Pilipinas (BSP). (2016). *Revised framework for monetary operations under the BSP Interest Rate Corridor (IRC) system.* Manila: BSP.

Bangko Sentral ng Pilipinas (BSP). (2019). *Primer on Inflation Targeting.* BSP.

Bangko Sentral ng Pilipinas (BSP). (2020a). *Macroprudential Policy Strategy Framework: The Case of the Philippines.* Financial Stability Coordination Council, BSP.

Bangko Sentral ng Pilipinas (BSP). (2020b). *Primer on the Exchange Rate.* BSP.

Bangko Sentral ng Pilipinas (BSP). (2021). *Annual Report.* Manila: BSP.

Bangko Sentral ng Pilipinas (BSP). (2022a). *Annual Report.* Manila: BSP.

Bangko Sentral ng Pilipinas (BSP). (2022b). *Revised framework for monetary operations under the BSP Interest Rate Corridor (IRC) system (Updated 2022).* Manila: BSP.

Bank Indonesia (BI). (2000–2002). *Annual Report.* Jakarta: BI.

Bank Indonesia (BI). (2003–2020). *Economic Report on Indonesia.* Jakarta: BI.

Bank Indonesia (BI). (2021). *Annual Report.* Jakarta: BI.

Bank Indonesia (BI). (2022a). *Financial Stability Review No.39 September 2022.* Jakarta: BI.

Bank Indonesia (BI). (2022b). *Monetary Policy Review December 2022.* Jakarta: BI.

Bank Indonesia (BI). (2023). *Monetary Policy Report - Quater I 2023.* Jakarta: BI.

Bank of Thailand (BOT). (2000). *Inflation Report July 2000.* Bangkok: BOT.

Bank of Thailand (BOT). (2007). *Inflation Report January 2007.* Bangkok: BOT.

Bank of Thailand (BOT). (2008). *Inflation Report January 2008*. Bangkok: BOT.

Bank of Thailand (BOT). (2009). *Inflation Report January 2009.* Bangkok: BOT.

Bank of Thailand (BOT). (2010). *Inflation Report Janary 2010.* Bangkok: BOT.

Bank of Thailand (BOT). (2012). *Annual Report.* Bangkok: BOT.

Bank of Thailand (BOT). (2013). Foreign exchange policy and intervention under inflation targeting in Thailand. *BIS Papers, 73*, 325-333.

Bank of Thailand (BOT). (2015). *Monetary Policy Report March 2015.* Bangkok: BOT.

Bank of Thailand (BOT). (2017). Macroprudential framework – the case of Thailand. *BIS Papers, 94*, 339-348.

Bank of Thailand (BOT). (2019a). *Monetary Policy Report March 2019.* Bangkok: BOT.

Bank of Thailand (BOT). (2019b). Reserves management and FX intervention in Thailand. *BIS Papers, 104*, 257-266.

Bank of Thailand (BOT). (2020). *Monetary Policy Report March 2020.* Bangkok: BOT.

Bank of Thailand (BOT). (2021a). *Annual Report.* Bangkok: BOT.

Bank of Thailand (BOT). (2021b). *Financial Stability Report 2021.* Bangkok: BOT.

Bank of Thailand (BOT). (2022a). *Annual Report.* Bangkok: BOT.

Bank of Thailand (BOT). (2022b). *Financial Stability Report 2022.* Bangkok: BOT.

Bank of Thailand (BOT). (2022c). Monetary and fiscal policy interactions in the wake of the pandemic. *BIS Papers, 122*, 291-297.

Bank of Thailand (BOT). (2023). *Monetary Policy Report Q1/2023.* Bangkok: BOT.

Batini, N., & Laxton, D. (2007). Under what conditions can inflation targeting be adopted? The experience of emerging markets. *Central Banking, Analysis, and Economic Policies Book Series, 11*, 467-506.

Batini, N., Kuttner, K., & Laxton, D. (2005). Chapter IV: Does Inflation Targeting Work in Emerging Markets? In *World Economic Outlook, September 2005* (pp. 161–186). USA: International Monetary Fund. doi:10.5089/9781589064546.081

Bernanke, B., Laubach, T., Mishkin, F. & Posen, A. (1999). *Inflation Targeting: Lessons from the International Experience.* Princeton University Press. doi:10.2307/j.ctv301gdr

Bhattacharya, R. (2014). Inflation dynamics and monetary policy transmission in Vietnam and emerging Asia. *Journal of Asian Economics, 34*, 16-26.

Blanchard, O. (2003). *Comment on 'Inflation Targeting in Transition Economies: Experience and Prospects,' by Jiri Jonas and Frederic Mishkin.* Paper prepared for the NBER Conference on Inflation Targeting, Florida.

Blommestein, H. J., & Turner, P. (2012). Interactions between sovereign debt management and monetary policy under fiscal dominance and financial instability. *BIS Papers, 65*, 213–37.

Bobeica, E., & Hartwig, B. (2023). The COVID-19 shock and challenges for inflation modelling. *International journal of forecasting, 39*(1), 519-539.

Brandao-Marques, L., Gelos, R. G., Harjes, T., Sahay, R., & Xue, Y. (2020). Monetary Policy Transmission in Emerging Markets and Developing Economies. *IMF Working Papers, 2020*(035). doi:10.5089/9781513529738.001

Bruno, V., Shim, I., & Shin, H. S. (2015). Effectiveness of Macroprudential and Capital Flow Measures in Asia and the Pacific. *BIS Papers, 82*, 185–192.

Bulíř, A., Šmídková, K., Kotlán, V., & Navrátil, D. (2008). Inflation Targeting and Communication: It Pays Off to Read Inflation Reports. *IMF Working Papers, 2008*(234). doi:10.5089/9781451870923.001

Can, U., Bocuoglu, M. E., & Can, Z. G. (2020). How does the monetary transmission mechanism work? Evidence from Turkey. *Borsa Istanbul Review, 20*(4), 375-382.

Capistrán, C., & Ramos-Francia, M. (2010). Does inflation targeting affect the dispersion of inflation expectations? *Journal of Money, Credit and Banking, 42*(1), 113-134.

Carare, A., Schaechter, A., Stone, M., & Zelmer, M. (2002). Establishing initial conditions in support of inflation targeting. *IMF Working Papers, 2002*(102).

Catão, L. A., & Pagan, A. (2011). The credit channel and monetary transmission in Brazil and Chile: a structured VAR approach. In L. Céspedes, R. Chang, & D. Saravia (Eds.), *Monetary policy under financial turbulence.* Banco Central de Chile.

Chabchitrchaidol, A., & Permpoon, O. (2002). Development of the Thai bond market. *BIS Papers, 11*, 190-199.

Ciżkowicz-Pękała, M., Grostal, W., Niedźwiedzińska, J., Skrzeszewska-Paczek, E., Stawasz-Grabowska, E., Wesołowski, G., & Żuk, P. (2019). *Three decades of inflation targeting.* Narodowy Bank Polski.

Corbacho, A., & Peiris, S.J. (2018). *The ASEAN Way: Sustaining Growth and Stability.* USA: International Monetary Fund.

Dacio, J. E., & Cruz, C. J. F. (2012). Tenets of Effective Monetary Policy in the Philippines. *Bangko Sentral ng Pilipinas Review, 1*, 18-30.

Dakila Jr, F. G. (2022). Dynamics of monetary policy and fiscal policy during the pandemic: the Philippine experience. *BIS Papers, 122*, 217-240.

Dany-Knedlik, G., & Garcia, J. A. (2018). Monetary Policy and Inflation Dynamics in ASEAN Economies. *IMF Working Papers, 2018*(147). doi:10.5089/9781484363041.001

Debelle, G., & Fischer, S. (1994). How independent should a central bank be? *Conference Series. 38*, pp. 195-225. Federal Reserve Bank of Boston.

Debelle, G., & Lim, C. H. (1998). Preliminary Considerations of an Inflation Targeting Framework for the Philippines . *IMF Working Papers, 1998*(039).

Direkudomsak, W. (2016). Inflation dynamics and inflation expectations in Thailand. *BIS Papers, 89*, 349-360.

Eichengreen, B., P. Masson, M. Savastano, and S. Sharma. (1999). Transition Strategies and Nominal Anchors on the Road to Greater Exchange-Rate Flexibility. In *Essays in International Economics, No. 213.* International Finance Section, Department of Economics. Princeton, N.J.: Princeton University.

Epstein, N., Gornicka, L., Ha, N., Musil, K., & Nalban, V. (2022). Quarterly Projection Model for Vietnam: A Hybrid Approach for Monetary Policy Implementation. *IMF Working Papers, 2022*(125).

Favero, C. A., & Giavazzi, F. (2005). Inflation Targeting and Debt: Lessons from Brazil. In F. Giavazzi, I. Goldfajn, & S. Herrera (Eds.), *Inflation Targeting, Debt and the Brazilian Experience, 1999 to 2003* (pp. 85-108). MIT Press.

Fratzscher, M., Grosse-Steffen, C., & Rieth, M. (2020). Inflation targeting as a shock absorber. *Journal of International Economics, 123*. doi:10.1016/j.jinteco.2020.103308.

Freedman, C., & Laxton, D. (2009). Inflation Targeting Pillars - Transparency and Accountability. *IMF Working Papers, 2009*(262).

Garriga, A. C., & Rodriguez, C. M. (2020). More effective than we thought: Central bank independence and inflation in developing countries. *Economic Modelling, 85*, 87-105. doi:10.1016/j.econmod.2019.05.009

Ghosh, A. R., Ostry, J. D., & Chamon, M. (2016). Two targets, two instruments: Monetary and exchange rate policies in emerging market economies. *Journal of International Money and Finance, 60*, 172-196. doi:10.1016/j.jimonfin.2015.03.005

Gochoco-Bautista, M. S. (2001). *What drives monetary policy?* University of the Philippines School of Economics Discussion Paper No. 0105.

Gómez, J., Uribe, J. D., & Vargas, H. (2002). *The Implementation of Inflation Targeting in Colombia.* Banco de la Republica de Colombia.

Gopinath, G. (2023, March). Crisis and Monetary Policy. *FINANCE & DEVELOPMENT, 60*(1), 15-17.

Grenville, S., & Ito, T. (2010). *An independent evaluation of the Bank of Thailand's monetary policy under the inflation targeting framework, 2000-2010*. Bank of Thailand.

Guinigundo, D. C. (2008). Transmission mechanism of monetary policy in the Philippines. *BIS Papers, 35*, 413-425.

Guinigundo, D. C. (2012). Fiscal policy, public debt management and government bond markets: the case for the Philippines. *BIS Papers, 67*, 269-283.

Guinigundo, D. C. (2013). A note on the effectiveness of intervention in the foreign exchange market: the case of the Philippines. *BIS Papers, 73*, 263-277.

Guinigundo, D. C. (2016). The role of expectations in inflation dynamics in the Philippines-has it changed following the global financial crisis? *BIS Papers, 89*, 291-302.

Guinigundo, D. C. (2017). Macroprudential frameworks, implementation, and communication strategies–The Philippines. *BIS Papers, 94*, 277-288.

Güler, A. (2021). Does monetary policy credibility help in anchoring inflation expectations? Evidence from six inflation targeting emerging economies. *Journal of Central Banking Theory and Practice, 10*(1), 93-111.

Guo, S., Karam, P. D., & Vlcek, J. (2019). Decomposing the Inflation Dynamics in the Philippines. *IMF Working Papers, 2019*(153). doi:10.5089/9781498319324.001

Habermeier, K., Kokenyne, A., Veyrune, R., & Anderson, H. (2009). Revised System for the Classification of Exchange Rate Arrangements. *IMF Working Papers, 2009*(211). doi:10.5089/9781451873580.001

Hammond, G. (2012). *State of the Art in Inflation Targeting.* Handbook No. 29, Centre for Central Banking Studies, Bank of England.

Hanh, N. T. M. (2019). Can Vietnam move to inflation targeting? In V. Kreinovich, N. Thach, N. Trung, & D. Van Thanh (Eds.), *Beyond Traditional Probabilistic Methods in Economics ECONVN 2019* (pp. 1052-1061). Springer. doi:10.1007/978-3-030-04200-4_76

Hannoun, H. (2010, February 26-27). Towards a global financial stability framework. *45th SEACEN Governors' Conference*. Siem Reap province, Cambodia.

Harun, C. A., & Gunadi, I. (2022). Macroprudential Policy and Institutional Arrangement. In P. Warjiyo, & S. Juhro (Eds.), *Central Bank Policy Mix: Issues, Challenges, and Policy Responses* (pp. 93-108). Singapore: Springer.

Hendar. (2016). Inflation mechanisms, expectations and monetary policy in Indonesia. *BIS Papers, 89*, 193-203.

Hermawan, D., & Munro, A. (2008). *Monetary-fiscal interaction in Indonesia.* Asian Office Research Paper. Bank for International Settlement.

Hoa, T. T. (2017). *Forecasting Inflation in Vietnam with Univariate and Vector Autoregressive Models.* Graduate Institute of International and Development Studies Working Papers, No. 05/2017.

Hofman, D., Chamon, M., Deb, P., Harjes, T., Rawat, U., & Yamamoto, I. (2020). Intervention Under Inflation Targeting-When Could It Make Sense? *IMF Working Papers, 2020*(009). doi:10.5089/9781513526027

Huang, H. C., Yeh, C. C., & Wang, X. (2019). Inflation targeting and output-inflation tradeoffs. *Journal of International Money and Finance, 96*, 102-120.

IMF. (1998). *Annual Report on Exchange Arrangements and Exchange Restrictions 1998.* USA: International Monetary Fund.

IMF. (2000). *Annual Report on Exchange Arrangements and Exchange Restrictions 2000.* USA: International Monetary Fund.

IMF. (2009). *Annual Report on Exchange Arrangements and Exchange Restrictions 2009.* USA: International Monetary Fund.

IMF. (2010). Vietnam: 2010 Article IV Consultation—Staff Report and Public Information Notice. *IMF Staff Country Reports, 2010* (281). doi:10.5089/9781455205738.002

IMF. (2012). Vietnam: Staff Report for the 2012 Article IV Consultation. *IMF Staff Country Reports, 2012*(165). doi:10.5089/9781475506051.002

IMF. (2014, September 24). *First IMF Central Bank Forum for Developing Markets: The Road to Inflation Targeting and Transitional Monetary Arrangements*. Press Release No. 14/435. Retrieved from https://www.imf.org/en/News/Articles/2015/09/14/01/49/pr14435

IMF. (2015). Monetary Policy and Financial Stability. *Policy Papers, 2015*(045). doi:10.5089/9781498344265.007

IMF. (2016a). Guidance Note on the Assessment of Reserve Adequacy and Related Considerations. *Policy Papers, 2016*(018). doi:10.5089/9781498345644.007.A001

IMF. (2016b). Vietnam: Staff Report for the 2016 Article IV Consultation. *IMF Staff Country Reports, 2016*(240). doi:10.5089/9781498373890.002

IMF. (2017). Vietnam: 2017 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Vietnam. *IMF Staff Country Reports, 2017*(190). doi:10.5089/9781484307564.002

IMF. (2019a). Thailand: 2019 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Thailand. *IMF Staff Country Reports, 2019*(309). doi:10.5089/9781513516523.002

IMF. (2019b). Vietnam: 2019 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for Vietnam. *IMF Staff Country Reports, 2019*(235). doi:10.5089/9781498326803.002

IMF. (2021a). Philippines: 2021 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Philippines. *IMF Staff Country Reports, 2021*(177). doi:10.5089/9781513586519.002

IMF. (2021b). Thailand: 2021 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Thailand. *IMF Staff Country Reports, 2021*(097). doi:10.5089/9781513573021.002

IMF. (2022a). *Annual Report on Exchange Arrangements and Exchange Restrictions 2021.* USA: International Monetary Fund.

IMF. (2022b). Indonesia: 2022 Article IV Consultation-Press Release; Staff Report; Staff Statement; and Statement by the Executive Director for Indonesia. *IMF Staff Country Reports, 2022*(084).

IMF. (2022c). Philippines: 2022 Article IV Consultation-Press Release; and Staff Report. *IMF Staff Country Reports, 2022*(369).

IMF. (2022d). Thailand: 2022 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Thailand. *IMF Staff Country Reports, 2022*(300).

IMF. (2022e). Vietnam: 2022 Article IV Consultation-Press Release; Staff Report, and Statement by the Executive Director for Vietnam. *IMF Staff Country Reports, 2022*(209).

IMF. (2023a). *Annual Report on Exchange Arrangements and Exchange Restrictions 2022.* USA: International Monetary Fund.

IMF. (2023b). Indonesia: 2023 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Indonesia. *IMF Staff Country Reports, 2023*(221).

Inoue, T., Toyoshima, Y., & Hamori, S. (2012). *Inflation targeting in Korea, Indonesia, Thailand, and the Philippines: the impact on business cycle synchronization between each country and the world.* Institute of Developing Economies (IDE) Discussion Paper No. 328, Japan External Trade Organization (JETRO).

Islam, M. S., & Uddin, M. T. (2011). Inflation Targeting as the Monetary Policy Framework: Bangladesh Perspective. *Economia. Seria Management, 14*(1), 106-119.

Ismailov, S., Kakinaka, M., & Miyamoto, H. (2016). Choice of inflation targeting: Some international evidence. *The North American Journal of Economics and Finance, 36*, 350-369.

Ito, T., & Hayashi, T. (2004). *Inflation targeting in Asia*. HKIMR Occasional Paper 1, Hong Kong Institute for Monetary Research.

Iwasaki, I., & Uegaki, A. (2017). Central bank independence and inflation in transition economies: A comparative meta-analysis with developed and developing economies. *Eastern European Economics, 55*(3), 197-235.

Jahan, S. (2012). Inflation targeting: Holding the line. *Finance & Development, 4*, 72-73.

Jonas, J., & Mishkin, F. S. (2003). *Inflation Targeting in Transition Countries: Experience and Prospects.* NBER Working Paper No.9667. doi:10.3386/w9667

Juhro, S. M., & Azwar, P. (2021). *FX Intervention Strategy And Exchange Rate Stability In Indonesia (WP/03/2021)*. Bank Indonesia.

Juhro, S. M., & Goeltom, M. S. (2015). Monetary policy regime in Indonesia. In A. Kohsaka (Ed.), *Macro-Financial Linkages in the Pacific Region* (pp. 219-248). London: Routledge.

Juhro, S. M., Siregar, R. Y., & Trisnanto, B. (2022). Exchange Rate Policy and Capital Flow Management. In P. Warjiyo, & S. Juhro (Eds.), *Central Bank Policy Mix: Issues, Challenges, and Policy Responses* (pp. 51-72). Singapore: Springer.

Kenward, L. R. (2013). Inflation targeting in Indonesia, 1999–2012: an ex-post review. *Bulletin of Indonesian Economic Studies, 49*(3), 305-327.

Kirakul, S. (2006). Comments on "Understanding monetary policy in Malaysia and Thailand: objectives, instruments and independence" by Robert Neil McCauley. *BIS Papers, 31*, 199-203.

Koepke, R. (2019). What Drives Capital Flows to Emerging Markets? A Survey of The Empirical Literature. *Journal of Economic Surveys, 33*(2), 516-540.

Kongsamut, P. (2001). Philippines Preparations for Inflation Targeting. *IMF Working Papers, 2001*(099).

Kose, M. A., Matsuoka, H., Panizza, U., & Vorisek, D. (2019). Inflation Expectations: Review and Evidence. In J. Ha, M. A. Kose, & F. Ohnsorge (Eds.), *Inflation in Emerging and Developing Economies: Evolution, Drivers, and Policies.* Washington, D.C.: World Bank.

Krušković, B. D. (2022). Central bank intervention in the inflation targeting. *Journal of Central Banking Theory and Practice, 11*(1), 67-85.

Kumhof, M. (2002). A Critical View of Inflation Targeting: Crises, Limited Sustainability and Aggregate Shocks. In N. Loayza, & R. Soto (Eds.), *Ten Years of Inflation Targeting: Design, Performance, Challenges.* Santiago: Central Bank of Chile.

Lai, N. A. (2015). *Essays on central banking in Vietnam (*Doctoral dissertation, Université Panthéon-Sorbonne-Paris I). Retrieved from https://theses.hal.science/tel-01625309/file/LAI.pdf

Laurens, M. B., Eckhold, K., King, D., Maehle, M. N. O., Naseer, A., & Durré, A. (2015). The journey to inflation targeting: Easier said than done the case for transitional arrangements along the road. *IMF Working Papers, 2015*(136). doi:10.5089/9781513567990.001

Lee, M., Gaspar, R., & Villaruel, M. L. (2017). *Macroprudential policy frameworks in developing Asian economies.* Asian Development Bank Economics Working Paper Series (No. 510).

Leiderman, L., Maino, R., & Parrado, E. (2006). Inflation Targeting in Dollarized Economies, *IMF Working Papers, 2006*(157).

Long, P. D., Hien, B. Q., & Ngoc, P. T. B. (2021). Money supply, inflation and output: an empirically comparative analysis for Vietnam and China. *Asian Journal of Economics and Banking*. doi:10.1108/AJEB-03-2021-0040

Luangaram, P., Sethapramote, Y., & Tontivanichanon, C. (2015). *Inflation Expectations and Monetary Policy in Thailand.* PIER Discussion Paper No.3.

Ma, Y., & Lin, X. (2016). Financial development and the effectiveness of monetary policy. *Journal of Banking & Finance, 68*, 1-11.

Mahathanaseth, I., & Tauer, L. W. (2019). Monetary policy transmission through the bank lending channel in Thailand. *Journal of Asian Economics, 60* , 14-32.

Mai, T. H. (2007). *Solutions for exchange rate policy of transition economy of Vietnam* (Doctoral dissertation, Martin-Luther-University Halle-Wittenberg). Retrieved from https://opendata.uni-halle.de/bitstream/1981185920/9498/1/prom.pdf

Maliszewski, W. (2010). Vietnam: Bayesian estimation of output gap. *IMF Working Papers, 2010*(149). doi:10.5089/9781455201327.001

Manasan, R. G. (2011). Assessment of the Impact of the Fiscal Stimulus, Fiscal Risk and Fiscal Transparency: The Philippines. In T. Ito, & F. Parulian (Eds.), *Assessment on the Impact of Stimulus, Fiscal Transparency and Fiscal Risk* (pp. 213-251). ERIA Research Project Report 2010-01.

Mariano, R. S., & Villanueva, D. P. (2006). Monetary policy approaches and implementation in Asia: the Philippines and Indonesia. *BIS papers, 31*, 207-226.

Masson, P. R., Savastano, M. A., & Sharma, S. (1997). The Scope for Inflation Targeting in Developing Countries. *IMF Working Papers, 1997*(130).

McCauley, R. N. (2006). Understanding monetary policy in Malaysia and Thailand: objectives, instruments and independence. *BIS Papers , 31*, 172-198.

McCauley, R. N. (2007). Core versus headline inflation targeting in Thailand. In *Bank of Thailand International Symposium: Challenges to inflation targeting in emerging countries* (pp. 174-228). Bank of Thailand.

McDermott, J., & Williams, R. (2018). Inflation Targeting in New Zealand: An Experience in Evolution. *Central bank frameworks: Evolution or revolution. RBA Annual Conference. 2018*, pp. 7–24. Sydney: Reserve Bank of Australia.

McLeod, R. H. (1997). Survey of Recent Developments. *Bulletin of Indonesian Economic Studies, 33*(1), 3-43.

Meerza, S. I. (2020). Do Preconditions of Inflation Targeting Framework Matter? *International Journal of Economics and Finance, 12*(5), 1-51.

Menna, L., & Tobal, M. (2018). *Financial and price stability in emerging markets: the role of the interest rate.* BIS Working Papers No. 717.

Minea, A., & Tapsoba, R. (2014). Does inflation targeting improve fiscal discipline? *Journal of International Money and Finance, 40*, 185-203.

Minea, A., Tapsoba, R., & Villieu, P. (2021). Inflation targeting adoption and institutional quality: Evidence from developing countries. *The World Economy, 44*(7), 2107-2127.

Misati, R. N., Nyamongo, E. M., Njoroge, L. K., & Kaminchia, S. (2012). Feasibility of inflation targeting in an emerging market: evidence from Kenya. *Journal of Financial Economic Policy, 4*(2), 146-159.

Mishkin, F. S. (2000). Inflation targeting in emerging-market countries. *American Economic Review, 90*(2), 105-109.

Mishkin, F. S. (2004). *Can Inflation Targeting Work in Emerging Market Countries?* NBER Working Paper No. 10646. doi:10.3386/w10646

Mishkin, F. S. (2008). Challenges for inflation targeting in emerging market countries. *Emerging Markets Finance and Trade, 44*(6), 5-16.

Montoro, C., Takats, E., & Yetman, J. (2012). Is monetary policy constrained by fiscal policy? *BIS Papers, 67*, 11-30.

Morgan, P. J. (2013). *Monetary Policy Frameworks in Asia: Experience, Lessons, and Issues.* ADBI Working Papers No. 435. Asian Development Bank Institute (ADBI).

Nakornthab, D. (2009). Thailand's monetary policy since the 1997 crisis. *Kobe University Economic Review, 55*, 75-88.

Nguyen, T. D. (2019). Impact of government spending on inflation in Asian emerging economies: Evidence from India, China, and Indonesia. *The Singapore Economic Review, 64*(05), 1171-1200.

Nguyen, T. M. L., Papyrakis, E., & Van Bergeijk, P. A. (2019). Assessing the price and output effects of monetary policy in Vietnam: evidence from a VAR analysis. *Applied Economics, 51*(44), 4800-4819.

Nguyen, T. N., Pham, T. T. X., & Nguyen, T. C. (2022). Forecasts of GDP Growth and Inflation Under the Influence of the Covid-19 Pandemic: The Case of Vietnam. In N. Ngoc Thach, D. T. Ha, N. D. Trung, & V. Kreinovich (Eds.), *Prediction and Causality in Econometrics and Related Topics. ECONVN 2021* (Vol. 983, pp. 483-497). Springer. doi:10.1007/978-3-030-77094-5_38

Niedźwiedzińska, J. (2018). *Inflation targeting: Institutional features of the strategy in practice.* NBP Working paper No. 299.

Nookhwun, N. (2019). Estimates of exchange rate passthrough for Thailand. *Focused and Quick (FAQ), Bank of Thailand*, (141), 1–8.

Obstfeld, M., Ostry, J. D., & Qureshi, M. S. (2017). A Tie That Binds: Revisiting the Trilemma in Emerging Market Economies. *IMF Working Papers, 2017*(130).

OECD. (2021). *Economic Outlook for Southeast Asia, China and India 2021: Reallocating Resources for Digitalisation.* Paris: OECD Publishing.

Ötker-Robe, I., & Freedman, C. (2009). Country experiences with the introduction and implementation of inflation targeting. *IMF Working Papers, 2009*(161).

Ötker-Robe, I., & Freedman, C. (2010). Important Elements for Inflation Targeting for Emerging Economies. *IMF Working Papers, 2010*(113).

Park, H., & Son, J. C. (2022). Dollarization, inflation, and foreign exchange markets: A cross-country analysis. *International Journal of Finance & Economics, 27*(3), 2724-2736.

Peerawattanachart, K. (2015). *Administered Price and Inflation Targeting in Thailand.* Retrieved from https://www.bot.or.th/Thai/Segmentation/Student/setthatat/DocLib_Settha_Paper_255 8/B_Doc_Prize3_2558.pdf

Pham, T. A. (2016). *Monetary policies and the macroeconomic performance of vietnam.* (Doctoral dissertation, Queensland University of Technology). Retrieved from https://eprints.qut.edu.au/95942/1/Tuan_Pham%20Anh_Thesis.pdf

Pham, T. H. (2017). Dollarization and De-dollarization Policies: The Case of Vietnam. In K. Kubo (Ed.), *Dollarization and De-dollarization in Transitional Economies of Southeast Asia* (pp. 131-166). Palgrave Macmillan.

Pham, T. T. T., & Riedel, J. (2012). On the conduct of monetary policy in Vietnam. *Asian-Pacific Economic Literature, 26*(1), 34-45.

Purwono, R., Yasin, M. Z., & Mubin, M. K. (2020). Explaining regional inflation programmes in Indonesia: Does inflation rate converge? *Economic Change and Restructuring, 53*, 571-590.

Rennhack, R., & Nozaki, M. (2006). Financial Dollarization in Latin America. In A. Armas, A. Ize, & E. Yeyati (Eds.), *Financial Dollarization. Procyclicality of Financial Systems in Asia.* London: Palgrave Macmillan. doi:/10.1057/9780230380257_4

Roger, S. (2009). Inflation Targeting at 20 - Achievements and Challenges. *IMF Working Papers, 2009*(236). doi:10.5089/9781451873832.001

Roger, S., & Stone, M. R. (2005). On Target? The International Experience with Achieving Inflation Targets. *IMF Working Papers, 2005*(163). doi:10.5089/9781451861822.001

Rogoff, K. (2022). Emerging Market Sovereign Debt in the Aftermath of the Pandemic. *Journal of Economic Perspectives, 36*(4), 147-166.

Sahay, R., Arora, V., Arvanitis, T., Faruqee, H., N'Diaye, P., & Griffoli, T. M. (2014). Emerging Market Volatility: Lessons from The Taper Tantrum. *IMF Staff Discussion Notes, 2014*(009).

Sarwono, H. (2008). Monetary policy in emerging markets: The case of Indonesia. In *Monetary Policies and Inflation Targeting in Emerging Economies.* Paris: OECD Publishing. doi:10.1787/9789264044630-6-en

Schaechter, A., Stone, M. R., & Zelmer, M. (2000). *Adopting inflation targeting: Practical issues for emerging market countries.* Washington, D.C.: International Monetary Fund. doi:10.5089/9781557759917.084

Schmidt-Hebbel, K., & Carrasco, M. (2016). The past and future of inflation targeting: implications for emerging-market and developing economies. In C. Ghate, & K. Kletzer (Eds.), *Monetary policy in India* (pp. 583-622). New Delhi: Springer. doi:10.1007/978-81-322-2840-0_18

Shuaibi, A. J. (2019). Monetary policy strategies and their applicability in Afghanistan. *International Journal Of All Research Writings, 1*(12), 150-159.

Singh, S. (2023, March). The case for intervention. *Finance & Development, 60*(1), 46-47. Retrieved from https://www.imf.org/en/Publications/fandd/issues/2023/03/POV-malaysia-the-case-for-intervention-sukudhew-singh

Steiner, A. (2017). Central banks and macroeconomic policy choices: Relaxing the trilemma. *Journal of Banking & Finance, 77*, 283-299.

Stojanovikj, M., & Petrevski, G. (2019). *Adopting inflation targeting in emerging markets: exploring the factors behind the decision.* MPRA Papers No. 115797. Retrieved from https://mpra.ub.uni-muenchen.de/115797/1/MPRA_paper_115797.pdf

Svensson, L. E. (2010). Inflation targeting. In B. Friedman, & M. Woodford (Eds.), *Handbook of Monetary Economics* (Vol. 3, pp. 1237-1302). Elsevier.

Taguchi, H., & Wanasilp, M. (2018). Monetary policy rule and its performance under inflation targeting: the evidence of Thailand. *Asian Journal of Economics and Empirical Research, 5*(1), 19-28. doi:10.20448/journal.501.2018.51.19.28

The State Bank of Vietnam (SBV). (2010-2021). *Annual Report.* Hanoi: SBV.

Tien, N. H. (2021). Relationship between inflation and economic growth in Vietnam. *Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12*(14), 5134-5139.

To, T. A. D., Bui, Q. T., Pham, S. A., Duong, T. T. B., & Tran, T. K. C. (2012). *Inflation Targeting and Implications for Monetary Policy Framework in Vietnam.* Hanoi, Vietnam: Knowledge Publishing House.

Tran, T. H. (2018). The Inflation-Economic Growth Relationship: Estimating the Inflation Threshold in Vietnam. In L. Anh, L. Dong, V. Kreinovich, & N. Thach (Eds.), *Econometrics for Financial Applications* (pp. 1014-1034). Springer. doi:10.1007/978-3-319-73150-6_73

Truman, E. M. (2003). *Inflation Targeting in the World Economy.* Washington, D.C.: Peterson Institute for International Economics.

Turner, P. (2011). *Fiscal Dominance and the Long-Term Interest Rate.* Financial Markets Group (FMG) Special Papers No. 199.

Villar, L. (2023, March). Sticking to the Target. *Finance & Development, 60*(1), 48-49. Retrieved from https://www.imf.org/en/Publications/fandd/issues/2023/03/POV-Colombia-sticking-to-the-target-leonardo-villar

Warjiyo, P. (2013). Indonesia: stabilizing the exchange rate along its fundamental. *BIS Papers, 73*, 177-187.

Warjiyo, P. (2014). *Flexible ITF in Indonesia: Framework, Modeling, and Policy Making.* Paper presented at the International Conference on Economic Modeling July 16–18. Bali, Indonesia.

Warjiyo, P. (2016). Central Bank Policy Mix: Key concepts and Indonesia's Experience. *Bulletin of Monetary Economics and Banking, 18*(4), 379-408.

Warjiyo, P. (2017). Indonesia: The Macroprudential Framework and the Central Bank's Policy Mix. *BIS Papers, 94*, 189-205.

Warjiyo, P. (2022). Central bank policy mix: Key concepts and Indonesia’s experience. In P. Warjiyo, & S. M. Juhro (Eds.), *Central Bank Policy Mix: Issues, Challenges, and Policy Responses* (pp. 3-16). Singapore: Springer. doi:10.1007/978-981-16-6827-2_1

Warjiyo, P., & Juhro, S. (2019). Inflation Targeting Framework: Concept and Implementation at Central Banks. In *Central Bank Policy: Theory and Practice* (pp. 223-260). Bingley: Emerald Publishing Limited. doi:10.1108/978-1-78973-751-620191012

Wattanakoon, P. (2013). Exchange Rate Pass-through and Inflation in Thailand. *Thailand and The World Economy, 31*(2), 64–80.

Woodford, M. (2012). *Inflation Targeting and Financial Stability.* NBER Working Papers No. 17967. doi:10.3386/w17967

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