Statistical implications of evolving monetary policy: the case of Indonesia[1]

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[1] This paper was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Statistical Implications of Evolving Monetary Policy: The Case of Indonesia

Hendy Sulistiowati[1], Widi Agustin Srihanoki[2]

Abstract

The monetary policy framework of a central bank evolves over time. That evolution process induces changes in the availability of statistics in terms of both scope and depth. In the case of Indonesia, prior to 1999, the overarching goals of monetary policy were price stability, sustainable economic growth and balance of payment soundness. The monetary instruments at that time included Open Market Operations (OMO), Discount Facilities and the Reserve Requirement, using Base Money as the operational target. Therefore, the availability of accurate statistics concerning Base Money (M0), Narrow Money (M1) and Broad Money (M2) was vital for monetary policymaking. However, after enforcement of the Bank Indonesia Act in 1999, monetary policy targeted a single objective, namely achieving and maintaining rupiah stability. To implement monetary policy, since July 2005 Bank Indonesia has adopted the Inflation Targeting Framework (ITF), using the BI Rate as the policy instrument. Consequently, information regarding inflation expectations and output gap became key underlying considerations when formulating monetary policy. This paper will explain the implications of monetary policy evolving for statistics, including for surveys, in Bank Indonesia.

Keywords: Monetary Policy Framework, Central Bank, Statistics, Surveys

JEL classification:

1.   Introduction

1.1   Overview

Pursuant to the Bank Indonesia Act (No. 23) of 1999, monetary policy making by Bank Indonesia evolved. Previously, monetary policy had targeted price stability, sustainable economic growth and a sound balance of payments (BOP), but subsequently evolved towards a single objective, which is to achieve and maintain the stability of the rupiah value. In pursuit of its overarching purpose, Bank Indonesia focused on three tasks: (1) to prescribe and to implement the monetary policy; (2) to regulate and to safeguard the smoothness of the payment system; and (3) to regulate and to supervise banks. When the Financial Services Authority (Otoritas Jasa Keuangan - OJK) was established in accordance with the Otoritas Jasa Keuangan Act (No. 21) of 2011, however, banking regulation and supervision function was transferred to OJK and Bank Indonesia was tasked with macro prudential regulation and supervision.

On 1st July 2005, Bank Indonesia applied an Inflation Targeting Framework (ITF), which prioritizes forward-looking monetary policy by publicly announcing projected inflation for the upcoming periods and explicitly states that the single target of long-term monetary policy is low and stable inflation. By announcing the inflation target, the central bank is required to implement disciplined, forward-looking policy. Consequently, public inflation expectations are influenced by the transparent and accountable inflation target that is announced.

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Any evolution of the monetary policy framework applied by Bank Indonesia will require a corresponding change in the available statistics needed in terms of the scope and depth of the data. Prior to 1999, the main monetary policy instruments included Open Market Operations (OMO), Discount Facilities and the Reserve Requirement (RR), with Base Money (M0) used as the operational target or monetary policy signal. Upon application of ITF, however, the Base Money (M0), Narrow Money (M1) and Broad Money (M2) aggregates became critical information to support monetary policy. Furthermore, ITF also required additional information on inflation expectations, which was collected through various surveys conducted by Bank Indonesia. In addition, Bank Indonesia also required supplementary data and information concerning bank lending as well as the lending standards applied by the banking industry to support macro prudential policy.

1.2 Objective of the paper

The objective of this paper is to illustrate the change in the data/statistics required as monetary policy at Bank Indonesia has evolved. The paper also reviews in greater detail the data requirements after application of ITF and "enhanced ITF", primarily in terms of inflation expectations and lending standards, as well as how Bank Indonesia collects the information through the various surveys performed. The structure of this paper is organized as follows. After the introduction, the second section summaries the monetary policy framework implemented by Bank Indonesia prior to and after the Bank Indonesia Act of 1999 was promulgated, focusing on ITF implementation. The third chapter of the paper will elaborate the implications of monetary policy evolution on Bank Indonesia statistics, the role of surveys to capture inflation expectations and lending standards as well as the development of such surveys. The paper will close with the conclusions drawn from the previous chapters.

2. Monetary Policy In Indonesia

Monetary policy is the policy of the monetary authority or central bank in the form of control over monetary aggregates to achieve the desired economic developments (Warjiyo and Juhro, 2003). Monetary policy plays a crucial role in the economy of a country because it influences price stability, economic growth and the balance of payments (BOP).

There are two types of monetary policy, namely expansive and contractive. In general, expansive monetary policy is applied to stimulate economic activity by increasing total demand for money or lowering interest rates in the economy, while contractive monetary policy aims hold inflation by reducing demand for money or raising interest rates.
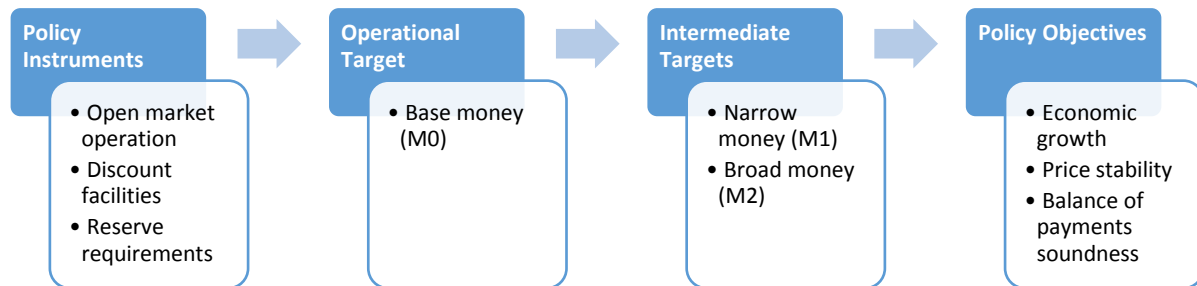
2.1 Monetary Policy prior to ITF

The monetary policy framework of a central bank can evolve over time. Global economic conditions, the domestic economy and financial sector developments are the main determinants of change. In the case of Indonesia, at the beginning of the 1980s, a decline in government revenues from oil exports due to the sliding oil price forced the government to deregulate the banking industry in order to stimulate domestic savings growth from the public as a source of development financing.

In 1983, banks were permitted to determine their own credit policy and interest rates, which precipitated rapid banking and financial sector growth in Indonesia. Thereafter in 1988, the government issued a further deregulation package that simplified the requirements to start up a bank, open branch offices and become a foreign exchange bank. The policy was accompanied in 1990 by refinements to the national credit system that encouraged banks and financial institutions to expand the intermediation function and confirmed Bank Indonesia's role in terms of maintaining monetary stability and banking industry supervision.

As a result of government deregulation in the 1980s, direct monetary policy that had previously limited credit and other assets, coupled with selective credit policy, evolved into indirect market-oriented monetary policy to control base money (M0). Using base money as the operational target, the amount of currency in circulation (M1 and M2) could be influenced to achieve the fundamental target of monetary policy. Monetary policy that uses monetary aggregates (base money and currency outside banks) is known as a quantity-based approach.

Figure 2.1 Monetary Policy Framework prior to ITF

Policy Instruments	Operational Target	Intermediate Targets	Policy Objectives
• Open market operation • Discount facilities • Reserve requirements	• Base money (M0)	• Narrow money (M1) • Broad money (M2)	• Economic growth • Price stability • Balance of payments soundness

Source: Bank Indonesia

To manage base money, Bank Indonesia controls liquidity in the economy through Open Market Operations (OMO) using monetary instruments, namely Bank Indonesia Certificates (SBI), Money Market Securities (SBPU), Discount Window, and Moral Suasion. Through Open Market Operations, Bank Indonesia could increase the amount of base money by purchasing securities and vice versa. Open market operations also influence short-term interest rates due to changes in bank liquidity predicated on increases or decreases to base money initiated by Bank Indonesia. In addition, the discount window, which allows eligible banks to borrow money from the central bank to meet temporary liquidity shortages, also influences short-term interest rates.

The monetary and banking crisis that befell Indonesia in 1997-1998, due to the Asian Financial Crisis, had a significant impact on Indonesia's economy. Dramatic rupiah depreciation, soaring inflationary pressures and spiraling interest rates severely impeded the bank intermediation function. Such conditions drastically eroded the effectiveness of monetary policy in terms of attaining the inflation target. The crippled bank intermediation function undermined monetary policy transmission through the interest rate channel. To overcome such dire circumstances, Bank Indonesia directed monetary policy towards controlling liquidity on the money market through base money (M0) as the operational target in line with the needs of the real economy.
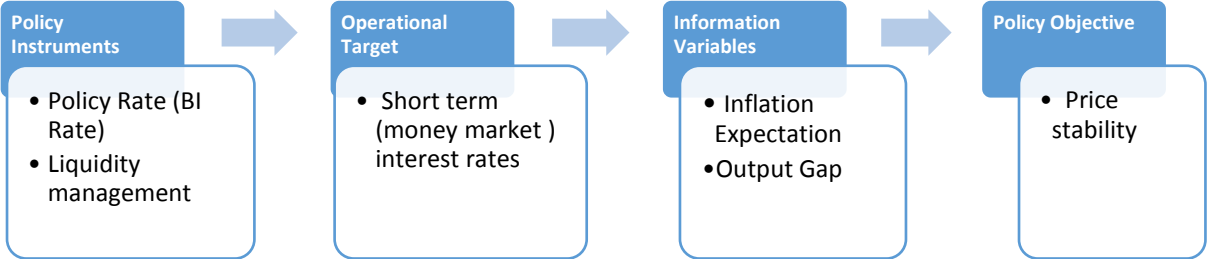
2.2 Inflation Targeting Framework

With the promulgation of the Bank Indonesia Act in 1999, the target of monetary policy shifted from a dual target to a single objective, namely rupiah stability against goods and services, as reflected by inflation and exchange rate stability against other currencies. In addition to stipulating the single objective, the Bank Indonesia Act of 1999 implicitly mandated for Bank Indonesia to apply the Inflation Targeting Framework (ITF). Subsequent to the transition period from 1999-2005, on 1st July 2005, Bank Indonesia officially adopted ITF.

The Inflation Targeting Framework is a monetary policy framework signaling the central bank's official position that the overarching goal of monetary policy is to create low and stable inflation, while announcing the inflation target publicly (Warjiyo and Juhro, 2003). Announcing the inflation target is indicative of the central bank's avowed commitment to control inflation and increase transparency.

Warjiyo and Juhro (2003) proposed a number of fundamental concepts of ITF-based monetary policy as follows: (i) inflation target; (ii) forward-looking monetary policy; (iii) transparency; as well as

(iv) accountability and credibility. ITF begins with determining and announcing the desired inflation target by the central bank for a predetermined period. The announced inflation target is also used to anchor the monetary policy of the central bank. Furthermore, ITF-based monetary policy is forward looking, implying that monetary policy includes anticipatory measures to attain the inflation target. ITF application demands central bank transparency and disclosure, thus demonstrating commitment to combat inflation and to anchor public inflation expectations.
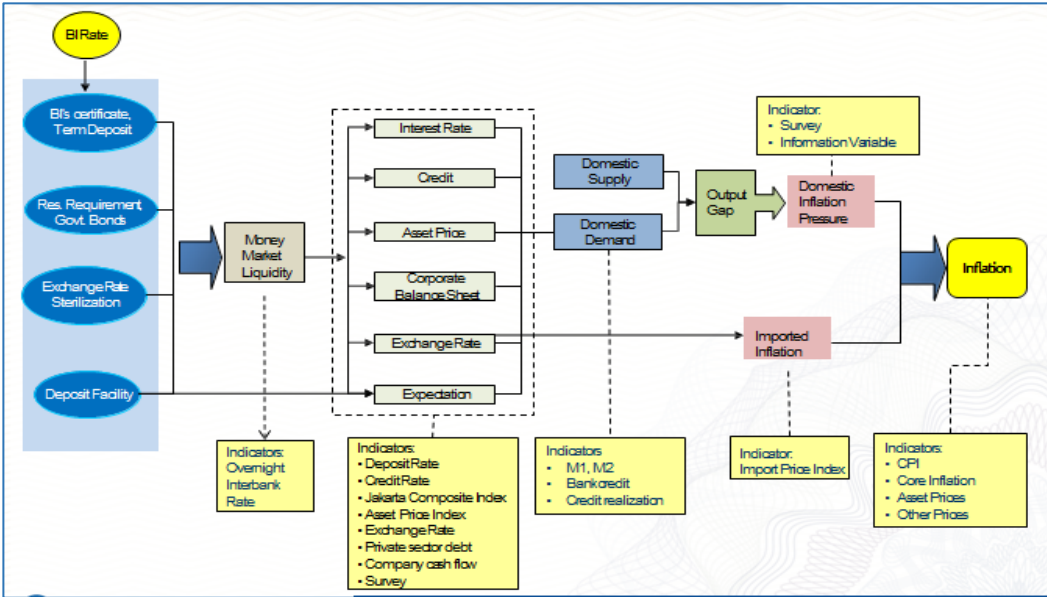
Figure 2.2 Monetary Policy Framework Under ITF

Policy Instruments		Operational Target		Information Variables		Policy Objective
• Policy Rate (BI Rate) • Liquidity management	→	• Short term (money market) interest rates	→	• Inflation Expectation • Output Gap	→	• Price stability

Source: Juhro, S. M. & Goeltom, M. S. (2015), modified

In general, the monetary policy transmission mechanism applied by Bank Indonesia after ITF adoption included various cannels, such as the interest rate channel, bank lending channel, assets prices, balance sheet, exchange rate and expectations. Furthermore, monetary policy transmission differs in each country where it is applied. The monetary policy transmission mechanism in Indonesia, however, is illustrated according to Figure 2.3.
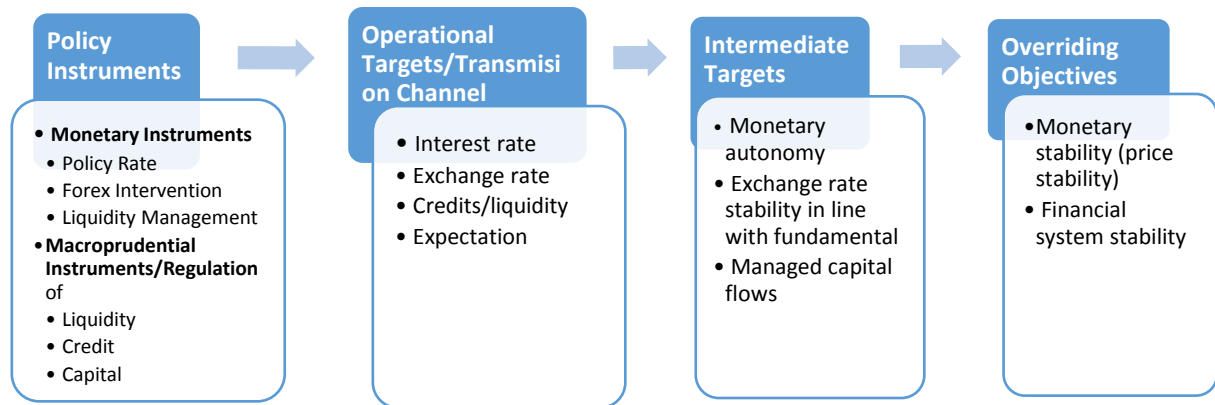
Figure 2.3 Monetary Policy Transmission

Source: Bank Indonesia, Intermediate Central Banking Certification Materials

Bank Indonesia executes a policy strategy through the implementation of monetary policy, while monitoring other indicators, including interest rates and exchange rates as well as monetary aggregates. Consequently, Bank Indonesia regularly observes a number of real economic variables, both demand and supply-side variables, to detect possible inflationary pressures early. Moreover, Bank Indonesia is also constantly expanding the availability of economic, monetary and banking information along with data on the flows of foreign exchange in order to support monetary policy effectiveness.

Consequently, Bank Indonesia released regulations concerning recurrent surveys to collect and collate comprehensive and up-to-date information on the economy, monetary sector, banking industry and real sector.

The Global Financial Crisis of 2008 prompted a structural change in the Indonesian economy. The Crisis provided an invaluable lesson that macroeconomic stability shall not be achieved without financial system stability. After the global financial crisis, Bank Indonesia paid due consideration to the growing interconnectedness between monetary stability, financial system stability and the payment system. Juhro and Goeltom (2015) explained that ITF, as applied by Bank Indonesia, required further development to incorporate a policy mix in order to mitigate financial system risks. Consequently, the policy rate response was complemented with exchange rate policy, capital flow management, macroprudential policy as well as policy coordination and communication.

Figure 2.4 Monetary and Macroprudential Policy Framework Under "enhanced" ITF

Source: Juhro, S. M. & Goeltom, M. S. (2015), modified

Thereafter, Bank Indonesia applied a new approach to achieve rupiah exchange rate stability through a policy mix comprised of three main policy strategies: (i) credible and consistent monetary policy; (ii) credible and proactive macro prudential policy supported by solid and tested surveillance; and (iii) credible and proactive payment system policy and rupiah management.

Under enhanced ITF, macro prudential instrument in addition to monetary instruments is utilized. Monetary instruments (policy rate, forex intervention and liquidity management) will be utilized to influence monetary variables, such as the exchange rate, credit and expectation. In the other side, macro prudential instrument will be utilized mainly to manage risk potential or perception in financial market. The last picture describes improvement of monetary policy under enhanced ITF.

The discussion above clearly shows that the monetary policy applied by Bank Indonesia has evolved over time to address the changing landscape, while paying due consideration to the overarching purpose of monetary policy.

3. Statistics To Support Monetary Policy

The evolution of monetary policy precipitated a corresponding change in the statistics required in terms of scope and depth. ITF implementation by Bank Indonesia demanded information on inflation expectations. In addition, the application of macro prudential policy also required data to support the monitoring of financial system stability. The new requirement for statistics and information to support monetary and macro prudential policy was met, amongst others, through various surveys.

3.1 Provision of Inflation Expectations Data

As a central bank implementing ITF, Bank Indonesia is required to anchor public inflation expectations within the predetermined target corridor. Consequently, it has become imperative to know the medium and long-term inflation expectations of the public. To that end, Bank Indonesia conducts various surveys that seek to collate information on inflation expectations. For example, the Business Survey (BS) collects information on inflation expectations from the perspective of the business community, while the Retail Sales Survey captures the inflation expectations of retailers and the Consumer Survey probes the inflation expectations of consumers. Bank Indonesia also conducts the Forecasting Macroeconomic Indicators Survey (MIFS) to gauge the inflation expectations of economists and financial market analysts.

Based on an assessment of the various surveys conducted, Bank Indonesia initiated a review in 2015 to redesign the survey questionnaires after it was decided that the information gleaned from the aforementioned surveys was inadequate to formulate medium and long-term policy. The existing questions were sufficiently diverse, incorporating qualitative and quantitative questions, but failed to apply a uniform time horizon, thus undermining in-depth comparisons. In general, comparisons of the questions on inflation expectations contained in each respective survey are presented in Table 3.1.

Table 3.1 Questions on Inflation Expectations in the Existing Surveys

TYPE OF SURVEY	PERIOD	INDICATORS	QUESTIONS	METHODOLOGIES	NOTES
CONSUMER SURVEY	Monthly	- Price Expectation for the next 3 months - Price Expectation for the next 3 months for 7 grups of commodities ((1) Foodstuff, (2) Food, Beverage,s Cigarettes, and Tobacco, (3) Housing, Electricity, Gas and Fuel, (4) Clothing, (5) Health, (6) Transportation, Communication, and Financial Services, (7) Education, Recreation, and Sport)	- How do you estimate the price change in general in the next 3 months compared to this time? (go up, go down, remain the same) - How do you estimate the price change in general in the next 3 months compared to this time by commdity grup? (go up, go down, remain the same)	Weighted Balance Score. The results of a survey using Balance Score method ie Net Balances plus 100. Balance Score = (% Increasing Answer-% Decreasing Answer) + 100	The correlation between the price expectations to the real inflation for the next 3 months, 6 months, and 12 months are 0.35, 0.34, dan 0.45.
		Price Expectation for the next 6 months	How do you estimate the price change in general in the next 6 months compared to this time? (go up, go down, remain the same)		
		Price Expectation for the next 12 months	How do you estimate the price change in general in the next 12 months compared to this time? (go up, go down, remain the same)		
RETAIL SALES SURVEY	Monthly	Price Expectation for the next 3 months	During the next 3 months, what do you expect about prices in general compare to where they are now? (go up, go down, remain the same)	*Weighted Balance Score .*	The inflation expectations SPE correlation of 0.28 (three month period) and 0.26 (a period of 6 months) .
		Price Expectation for the next 6 months	During the next 6 months, what do you expect about prices in general compare to where they are now? (go up, go down, remain the same)		
BUSINESS SURVEY	Quarterly	Expectation for annual inflation	-What is your expectation for annual inflation in 2016? (yoy)	*Simple average*	If using quarterly data I to IV the correlation will be negative 0.07. If using the fourth quarter data only then the outcome is significantly improved 0.82, however deviation still high at 1.78%.
MACROECONOMIC INDICATORS FORECASTING SURVEY	Quarterly	The next quarterly inflation forecast (yoy) The inflation forecasts (yoy) in the current year and the following year (yoy)	- In your point of view , what is the inflation rate forecast upcoming quarters (yoy) - In your point of view , what is the inflation rate forecast in the year x (the current year)? - In your point of view , what is the inflation forecast in the year x+1 ? - If you expect inflation in year x is higher or lower than a year x-1, mention of the main reasons that change according to priority (1, 2, 3)?	Mean point estimate (MPE) is the average response point estimate (level) of the respondents	The correlation between inflation and inflation projections for the coming quarter by 0.66 with deviation of 1.10% .

Source: Redesign of Inflation Expectations Survey, Bank Indonesia

Based on the results of literature studies in various countries, separate surveys could be used to observe indicators of inflation expectations form various economic agents, as had been the case in Indonesia. The questions were generally quantitative in nature, allowing direct processing to calculate the mean and median. Nonetheless, a number of surveys were found to enquire directly the expected "inflation rate" but other surveys favored more indirect questions in the form of "general prices" or "prices you pay" to gauge expected and perceived inflation.

Table 3.2 Comparison of Questions on Inflation Expectations in the Consumer Survey

Countries	Surveys	Questions
USA	*Survey Of Consumers*	*Price in general*
Japan	*The Monthly Consumer Confidence Survey (MCCS)*	*Prices of goods and services that you frequently purchase*
India	*Inflation Expectations Survey of Households (IESH)*	- *Expectation on Prices* - *inflation rate*
England	*Bank of England/Gfk NOP Inflation Attitudes Survey*	- *Prices in the shops generally to change (perceived & expectation)* - *Changes in interest rate (perceived & expectation)*
Australia	*Survey of Consumer Inflationary Expectations*	*Prices of things you buy*
New Zealand	*Household Inflation Expectations (HIE)*	*Inflation rate*
Indonesia	Consumer Survey	*Price in general*

Source: Redesign of Inflation Expectations Survey, Bank Indonesia

Nonetheless, through the questionnaire redesign, indirect questions were favoured in the form of "changes in general prices" in order to overcome any difficulties respondents might have in terms of answering the questions that could potentially erode the response rate.

Subsequently, the questionnaires of the Inflation Expectations Survey were redesigned to include the following points in order to enhance the quality and functionality of the data collected:

- Questions applied a uniform time horizon in order to facilitate comparisons between surveys. Therefore, each survey contained additional questions about inflation expectations in one year and possibly two years. In addition to questions in the form of a moving average for 3 months, 6 months, 1 year and 2 years, questions were also included regarding yearend CPI for the current year and for the following year.

- In order to confirm qualitative answers to inflation expectations (net balance processing and direction), the scope of the questions included the magnitude of price change (inflation/deflation) to facilitate analysis.

- The reasons behind the respondents' answers to questions on inflation were also disclosed/analysed to help explain respondent behavior when forming inflation expectations.

- To anchor the inflation target, questions were included on whether the respondents were aware of the inflation target set by the Government, the level of confidence towards the inflation target and whether the respondent's inflation expectations were forward looking.

- An additional question was also included concerning assumed inflation when formulating corporate budgets.
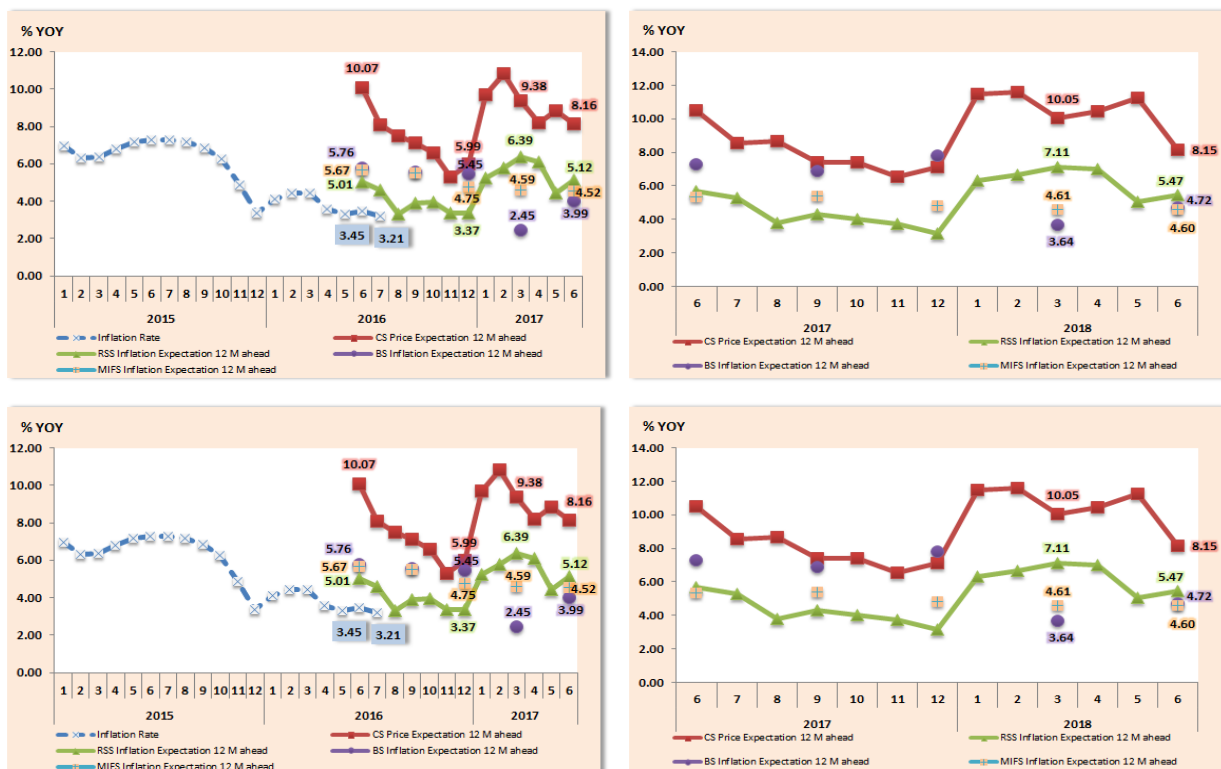
In the subsequent phase, Bank Indonesia initiated an Inflation Expectations Survey pilot project with the respondents of the Business Survey, Consumer Survey, Retail Sales Survey and the Macroeconomic Indicators Forecasting Survey, while adjusting the time horizon to match existing surveys. Therefore, as the Consumer Survey and Retail Sales Survey were conducted monthly, the pilot project for such respondents would also be conducted monthly. Similarly, the pilot project for respondents of the Business Survey and Macroeconomic Indicators Forecasting Survey were conducted on a quarterly basis.

An example of the Inflation Expectation Survey (IES) pilot project in March 2016 could be described as follows:

- Household respondents predicted average (mean) inflation expectations for 3 months, 6 months, 12 months and 24 months at 13.35% (yoy), 9.41% (yoy), 9.38% (yoy) and 10.05% (yoy).

- Retailers predicted average (mean) inflation expectations for 3 months, 6 months, 12 months and 24 months at 8.92% (yoy), 5.38% (yoy) 6.39% (yoy) and 7.11% (yoy).

- Corporate respondents predicted average (mean) inflation expectations for 3 months, 6 months, 12 months and 24 months at 3.62% (yoy), 3.13% (yoy), 2.45% (yoy) and 3.64% (yoy).

- Economic analysts and observers predicted average (mean) inflation expectations for 3 months, 6 months, 12 months and 24 months at 4.44% (yoy), 4.43% (yoy), 4.59% (yoy) and 4.61% (yoy).

- Respondent awareness of the inflation target set by the Government for 2016 was relatively low, particularly amongst consumers. Only 3.95% of consumers were aware of the 2016 inflation target, followed by retailers (24.12%) and corporate respondents (58.3%). Conversely, nearly all economists were aware of the 2016 inflation target.

The latest results of pilot project inflation expectation survey showed that consumer inflation expectations are always higher than other respondents for all time horizon. Inflation expectations of respondents Business Survey (BS) and Forecasting Macroeconomic Indicators Survey (MIFS) within the next 3 months, especially June 2016 was much lower than the results of other surveys. Inflation expectations were also relatively close compare to the inflation rate (3.45%). Meanwhile inflation expectation in 3 months ahead for September 2016 from Business Survey, Forecasting Macroeconomic Indicators Survey and Retail Sales Survey relatively coinciding approximately 3.7-3.9%.

Graph 3.1 Pilot Project Inflation Expectation Survey (IES)

Source: Bank Indonesia

The longer time horizon of the question, the harder for respondents to provide inflation expectations answers (uncertainty inflation). This is also reflected in the increasing number of standard

deviations (Table 3.3).   For example, when time horizon of question is 12 months ahead, all respondents expected that inflation to June 2016 was greater than 5%. Whereas for the same period and the time horizon of question is 3 months ahead, BS and MIFS respondents expected that inflation rate will be 3.62% and 4.44%, respectively, which were lower than expectation of 12 months ahead.

Table 3.3 The Result of Pilot Project IES – *Standard Deviation (%)*

Survey	3 months	6 months	12 months	24 months
Consumer Survey	9.95	9.80	10.83	12.25
Retail Sales Survey	4.63	4.42	5.49	6.16
Business Survey	4.07	4.03	5.02	6.72
Macroeconomic Indicator & Forecasting Survey	0.91	0.84	0.73	0.86

3.2   Provision of Lending Policy Information

Complementing the lending data submitted by banks through reports, Bank Indonesia also conducts a Banking Survey to collate early information on bank policy to accumulate deposits, to provide credits or loans, to place excess liquidity, to set lending and deposit rates as well as the supply and demand of new loans.
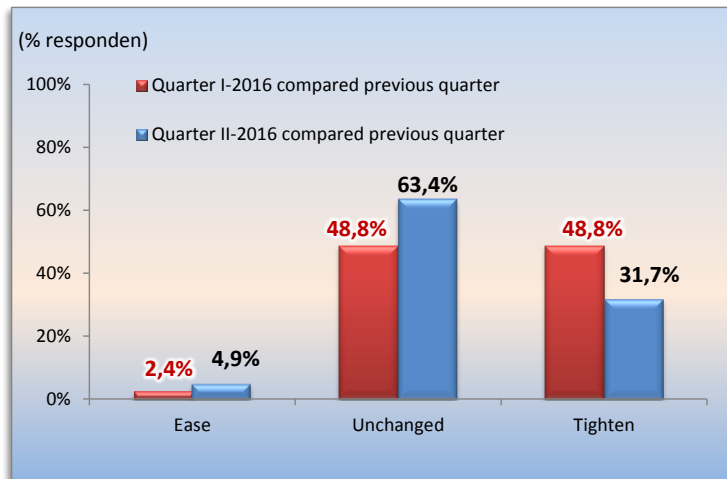
Information on bank lending standards is collected through the Banking Survey as a net balance that merely indicates the direction. Congruent with the pressing need to observe indications of future supply-side shifts in credit and the level of monetary policy/financial sector policy transmission as well as in keeping with international best practices (United States, Europe, the Philippines, Thailand, etc), the Banking Survey was also honed. Additional questions were incorporated into the questionnaire on lending standards, for instance 'How have the lending standards/guidelines on credit lines at your bank changed from the previous quarter?' The question is broken down for loans in general, investment loans, working capital loans, consumer loans, etc. Respondents are only required to answer "tighter', 'slightly tighter', 'unchanged', 'slightly looser' or 'looser'. In addition, a question was added concerning the determinants of the change in lending policy, for example, bank capital, economic projections, real sector conditions, bank liquidity, etc.

Bankers are also asked about other aspects of lending policy, for which they must answer tighter/unchanged/looser, such as the ceiling on credit lines, loan maturity, costs of loan approval, loan agreements, collateral, administrative requirements, etc. For each aspect, respondents are only required to answer "tighter', 'slightly tighter', 'unchanged', 'slightly looser' or 'looser'. All questions on lending standards use a time horizon of the upcoming three months.
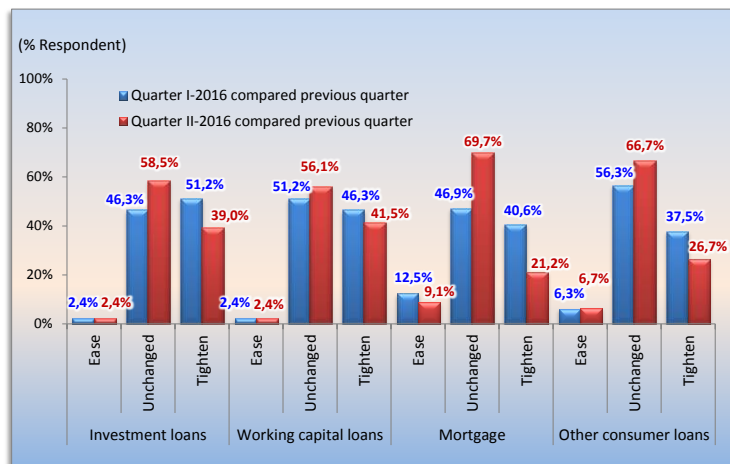
Analysis examples concerning the lending standards contained in the Banking Survey in Q1/2016 are as follows:

- Bank lending policy for Q2/2016 also helped to drive credit growth. As many as 63.4% of respondents stated that lending standards would remain unchanged from the previous quarter. In addition, the percentage of respondents who disclosed that lending standards would be tighter dropped from 48.8% to 31.7% (Graph 3.2)

- By loan type, the majority of respondents also confirmed no change in lending standards from the previous quarter. In Q2/2016, the percentage of respondents who planned to tighten lending standards decreased on the previous period (Graph 3.3).

Graph 3.2 Lending Standards in Q1 and Q2/2016

Graph 3.2 Lending Standards by Loan Type in Q2/2016

Source: Bank Indonesia

The latest Banking Survey (Q3/2016) revealed that the majority (63.4%) of respondents stated that bank policy to extend credit would remain relatively unchanged from the previous period, up from 58.5% last quarter, while the percentage of those who reported a tighter credit policy fell from 39.0% to 36.6%. Based on loan type, more respondents confirmed lending policy would remain relatively unchanged from the previous period, with the exception of working capital loans. A total of 57.5% of respondents stated that lending policy for working capital loans would remain unchanged from the previous period, down from 62.5% last quarter

Both examples of survey refinements made by Bank Indonesia demonstrate that monetary policy evolution ultimately affects the requirement for data/statistics. Data processing through survey activity accommodates the additional requirement for data and information.

4.   Conclusion

The monetary policy framework of a central bank evolves over time. Any evolution of the monetary policy framework applied by Bank Indonesia will require a corresponding change in the available statistics needed in terms of the scope and depth of the data. Under quantity-based approach, statistics of Base Money (M0), Narrow Money (M1) and Broad Money (M2) aggregates became critical information to support monetary policy.

The implementation of ITF by Bank Indonesia demanded information on inflation expectations. In addition, the application of macro prudential policy also required data to support the monitoring of financial system stability.

The new requirement for statistics and information to support monetary and macro prudential policy was met, amongst others, through various surveys. By redesigning the questionnaires of some surveys, Bank Indonesia tries to fulfill the new requirement for statistics and information to support monetary and macro prudential policies.

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Statistical implications of evolving monetary policy: the case of Indonesia[1]

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Bank Indonesia

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[1] This presentation was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

STATISTICAL IMPLICATIONS OF EVOLVING MONETARY POLICY: The Case of Indonesia

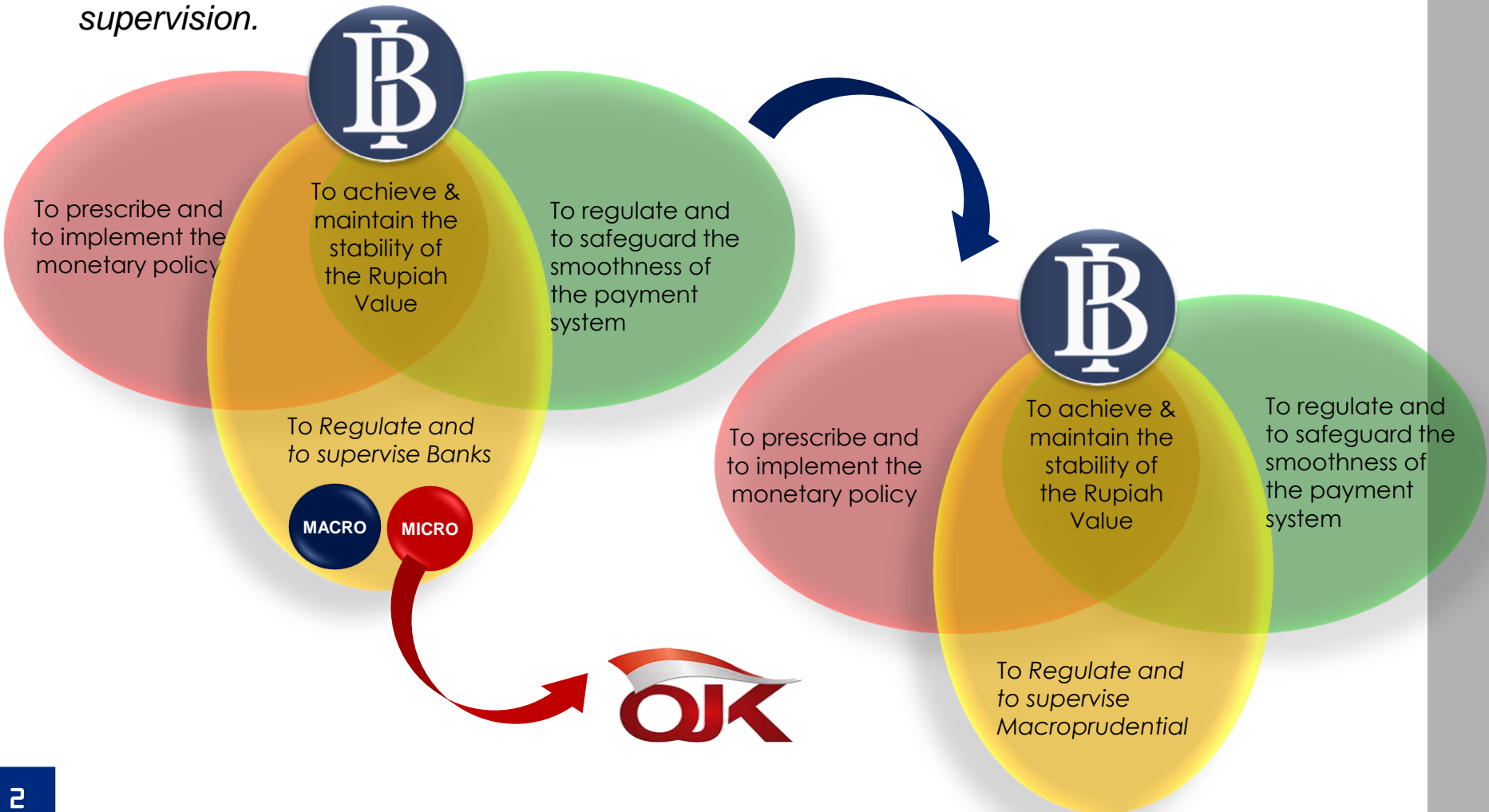Presented in the 8th IFC Conference

Hendy Sulistiowaty & Widi A. Srihanoki
Bank Indonesia

BIS, Basel, 8 September 2016

BANK INDONESIA

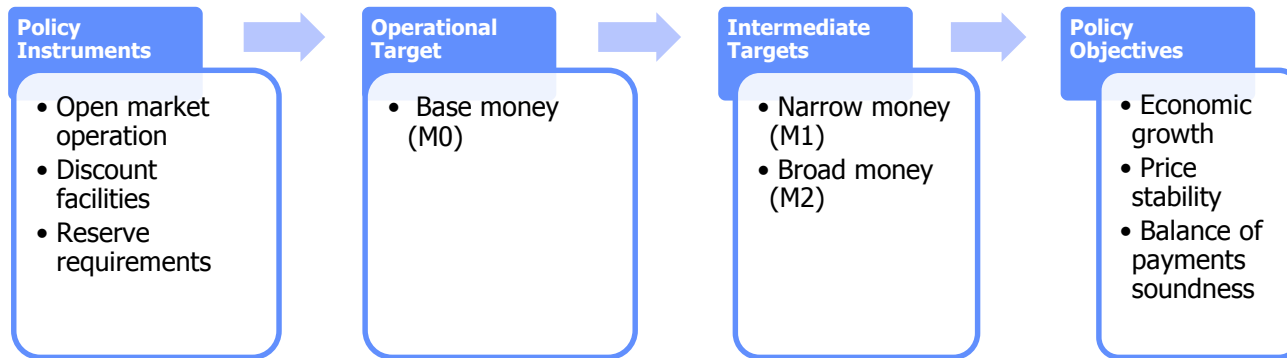# 1. OBJECTIVE AND TASKS OF BANK INDONESIA

In 2015, banking regulation and supervision function was transferred to OJK (Finansial Services Authority) and Bank Indonesia was tasked with macroprudential regulation and supervision.

To prescribe and to implement the monetary policy

To achieve & maintain the stability of the Rupiah Value

To regulate and to safeguard the smoothness of the payment system

To *Regulate and to supervise Banks*

MACRO **MICRO**

OJK

To prescribe and to implement the monetary policy

To achieve & maintain the stability of the Rupiah Value

To regulate and to safeguard the smoothness of the payment system

To *Regulate and to supervise Macroprudential*

2. MONETARY POLICY IN INDONESIA

Monetary policy evolved..........

Monetary Policy Framework (Quantity Based Approach)

Policy Instruments		Operational Target		Intermediate Targets		Policy Objectives
• Open market operation • Discount facilities • Reserve requirements	→	• Base money (M0)	→	• Narrow money (M1) • Broad money (M2)	→	• Economic growth • Price stability • Balance of payments soundness

Source: Bank Indonesia

Monetary Policy Under ITF

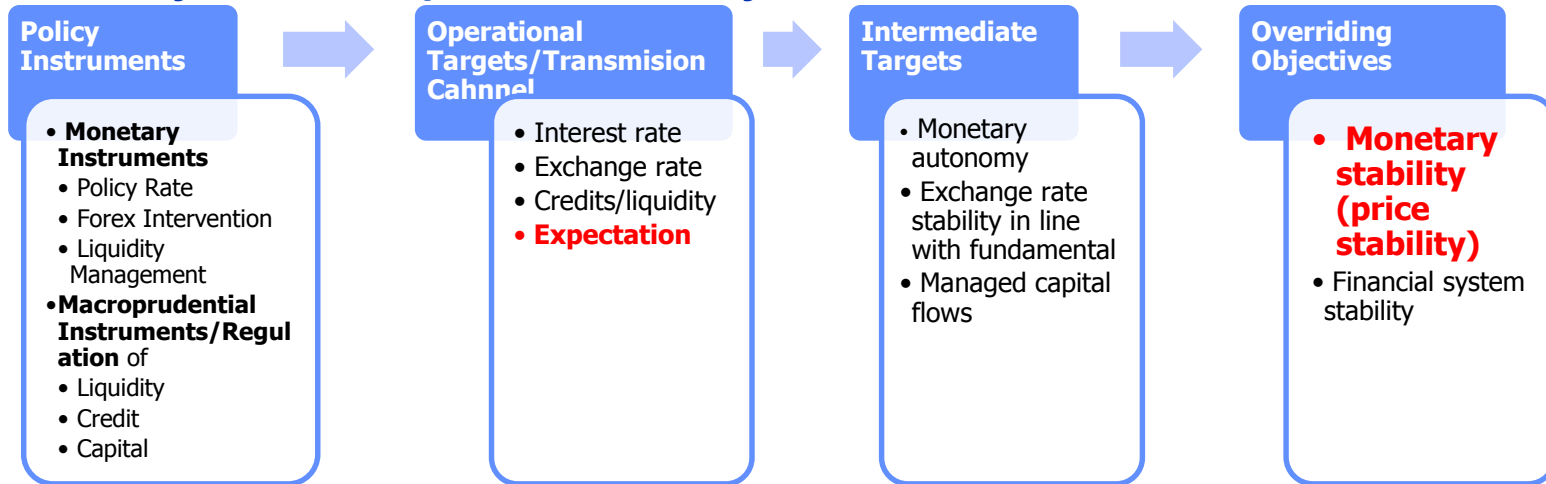| Policy Instruments		Operational Target		Information Variables		Policy Objective
• Policy Rate (BI Rate) • Liquidity management	→	• Short term (money market) interest rates	→	• **Inflation Expectation** • Output Gap	→	• Price stability

Source: Juhro, S. M. & Goeltom, M. S. (2015), modified

2. MONETARY POLICY IN INDONESIA

Monetary policy evolved..........

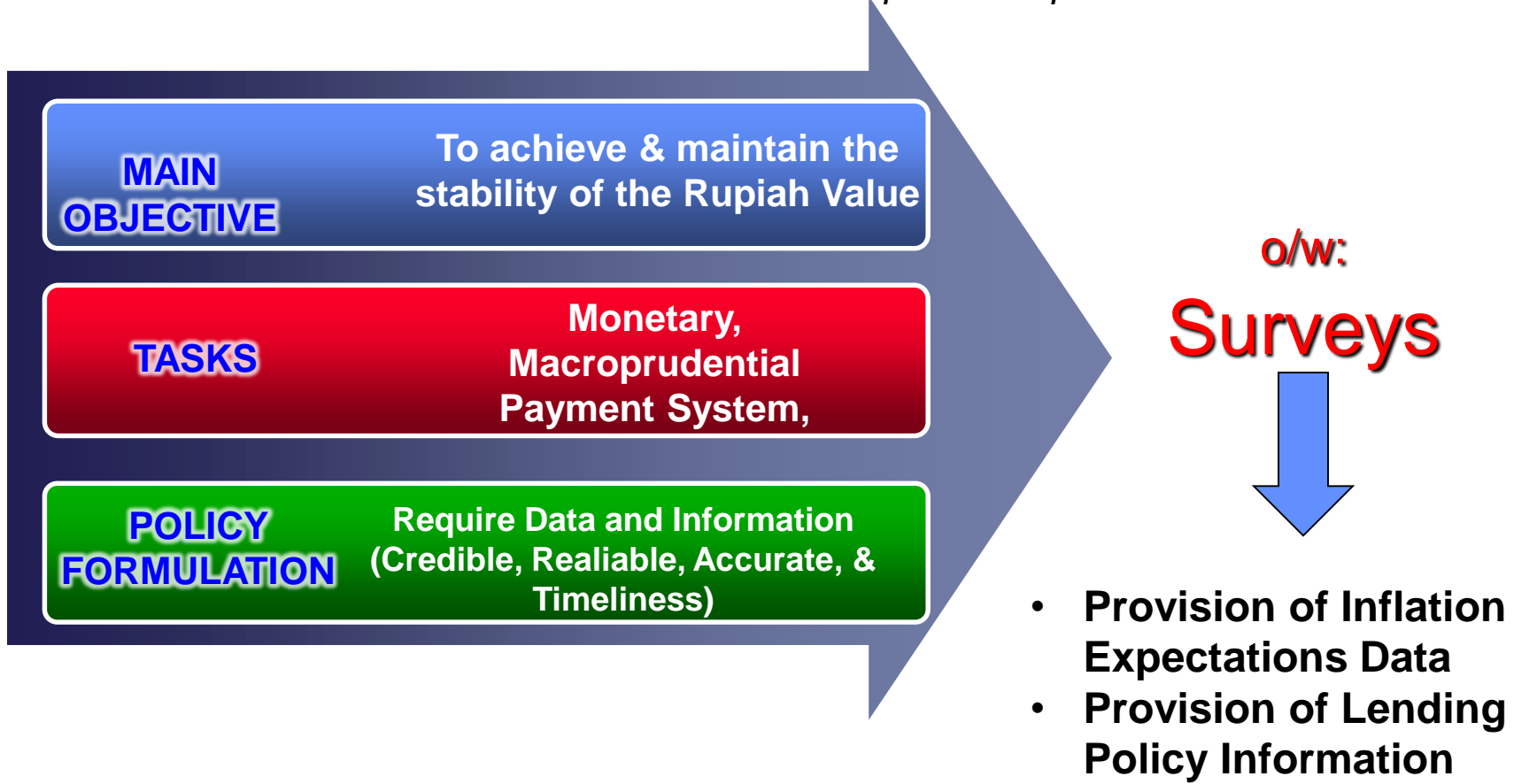## Monetary and Macroprudential Policy Framework Under "enhanced" ITF

Policy Instruments	Operational Targets/Transmision Cahnnel	Intermediate Targets	Overriding Objectives
• **Monetary Instruments** • Policy Rate • Forex Intervention • Liquidity Management • **Macroprudential Instruments/Regulation** of • Liquidity • Credit • Capital	• Interest rate • Exchange rate • Credits/liquidity • **Expectation**	• Monetary autonomy • Exchange rate stability in line with fundamental • Managed capital flows	• **Monetary stability (price stability)** • Financial system stability

Source: Juhro, S. M. & Goeltom, M. S. (2015), modified

3. STATISTICS TO SUPPORT MONETARY POLICY

Any evolution of the monetary policy framework will require a corresponding change in the available statistics needed in terms of the scope and depth of the data.
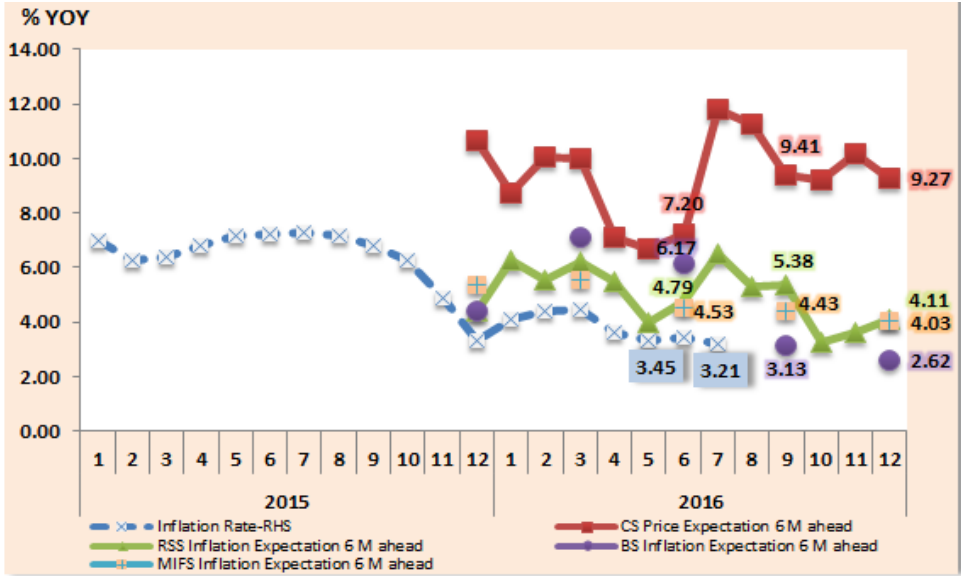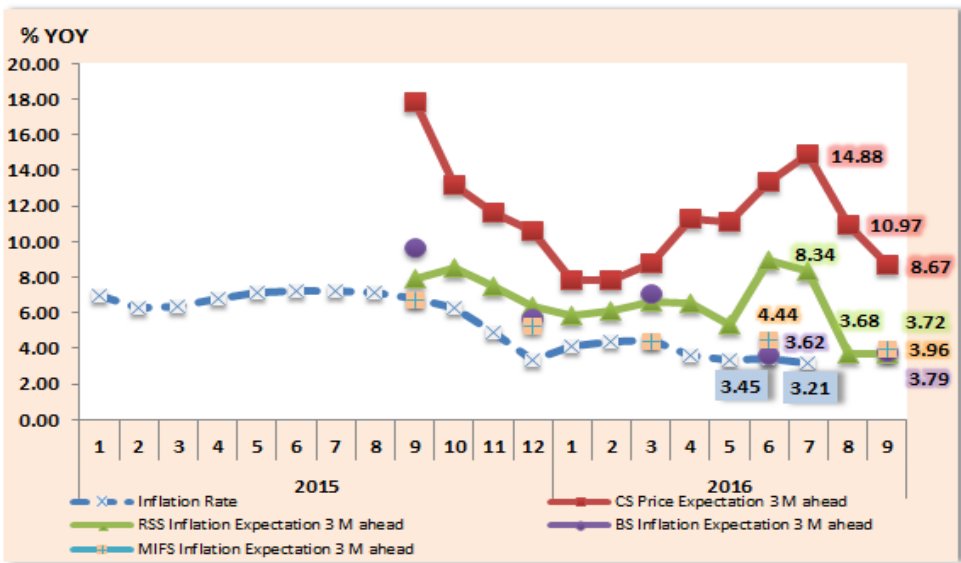
MAIN OBJECTIVE — To achieve & maintain the stability of the Rupiah Value

TASKS — Monetary, Macroprudential Payment System,

POLICY FORMULATION — Require Data and Information (Credible, Realiable, Accurate, & Timeliness)

o/w:
Surveys

- **Provision of Inflation Expectations Data**
- **Provision of Lending Policy Information**

3.a. PROVISION OF INFLATION EXPECTATION DATA

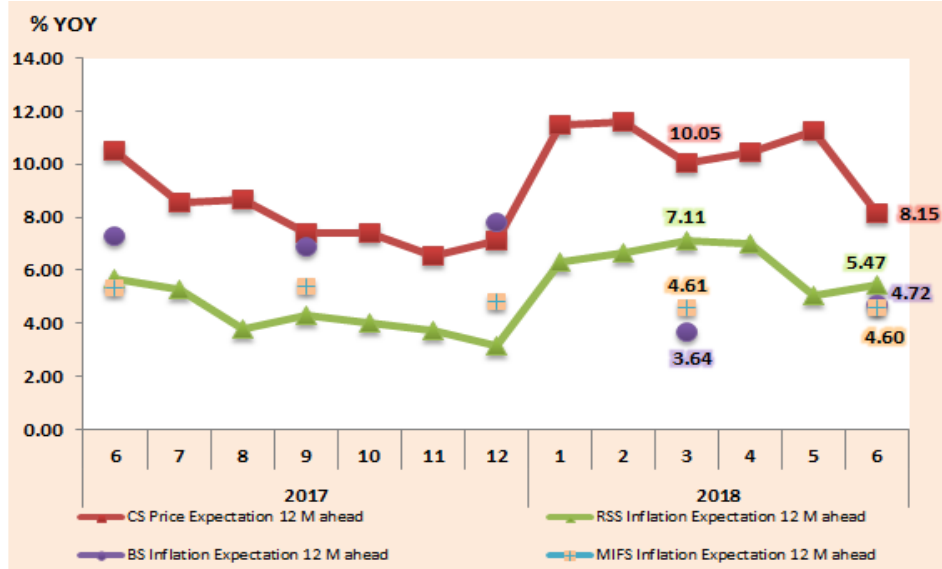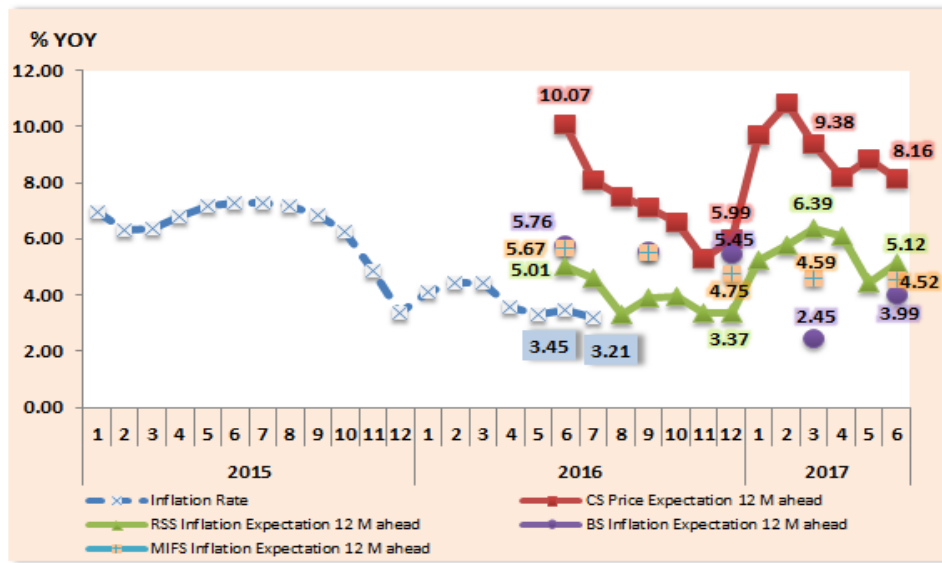*Information on inflation expectations was collected through various surveys conducted by Bank Indonesia.*

TYPE OF SURVEY	PERIOD	INDICATORS	QUESTIONS	METHODOLOGIES	NOTES
CONSUMER SURVEY	Monthly	- Price Expectation for the next 3 months - Price Expectation for the next 3 months for 7 grups of commodities ((1) Foodstuff, (2) Food, Beverage,s Cigarettes, and Tobacco, (3) Housing, Electricity, Gas and Fuel, (4) Clothing, (5) Health, (6) Transportation, Communication, and Financial Services, (7) Education, Recreation, and Sport)	- How do you estimate the price change in general in the next 3 months compared to this time? (go up, go down, remain the same) - How do you estimate the price change in general in the next 3 months compared to this time by commdity grup? (go up, go down, remain the same)	Weighted Balance Score. The results of a survey using Balance Score method ie Net Balances plus 100. Balance Score = (% Increasing Answer- % Decreasing Answer) + 100	The correlation between the price expectations to the real inflation for the next 3 months, 6 months, and 12 months are 0.35, 0.34, dan 0.45.
		Price Expectation for the next 6 months	How do you estimate the price change in general in the next 6 months compared to this time? (go up, go down, remain the same)		
		Price Expectation for the next 12 months	How do you estimate the price change in general in the next 12 months compared to this time? (go up, go down, remain the same)		
RETAIL SALES SURVEY	Monthly	Price Expectation for the next 3 months	During the next 3 months, what do you expect about prices in general compare to where they are now? (go up, go down, remain the same)	*Weighted Balance Score .*	The inflation expectations SPE correlation of 0.28 (three month period) and 0.26 (a period of 6 months) .
		Price Expectation for the next 6 months	During the next 6 months, what do you expect about prices in general compare to where they are now? (go up, go down, remain the same)		
BUSINESS SURVEY	Quarterly	Expectation for annual inflation	-What is your expectation for annual inflation in 2016? (yoy)	*Simple average*	If using quarterly data I to IV the correlation will be negative 0.07. If using the fourth quarter data only then the outcome is significantly improved 0.82, however deviation still high at 1.78%.
MACROECONOMIC INDICATORS FORECASTING SURVEY	Quarterly	The next quarterly inflation forecast (yoy) The inflation forecasts (yoy) in the current year and the following year (yoy)	- In your point of view , what is the inflation rate forecast upcoming quarters (yoy) - In your point of view , what is the inflation rate forecast in the year x (the current year)? - In your point of view , what is the inflation forecast in the year x+1 ? - If you expect inflation in year x is higher or lower than a year x-1, mention of the main reasons that change according to priority (1, 2, 3)?	Mean point estimate (MPE) is the average response point estimate (level) of the respondents	The correlation between inflation and inflation projections for the coming quarter by 0.66 with deviation of 1.10% .

3.a. PROVISION OF INFLATION EXPECTATION DATA

- The results of pilot project inflation expectation survey showed that consumer inflation expectation are always higher than other respondents for all time horizon.

- Inflation expectations of respondents Business Survey (BS) and Forecasting Macroeconomic Indicators Survey (MIFS) within the next 3 months, especially June 2016 was much lower than the results of other surveys. Inflation expectations were also relatively close compare to the inflation rate (3,45%). Meanwhile inflation expectation in 3 months ahead for September 2016 from BS, MIFS and RSS relatively coinciding approximately 3,7-3,9%.
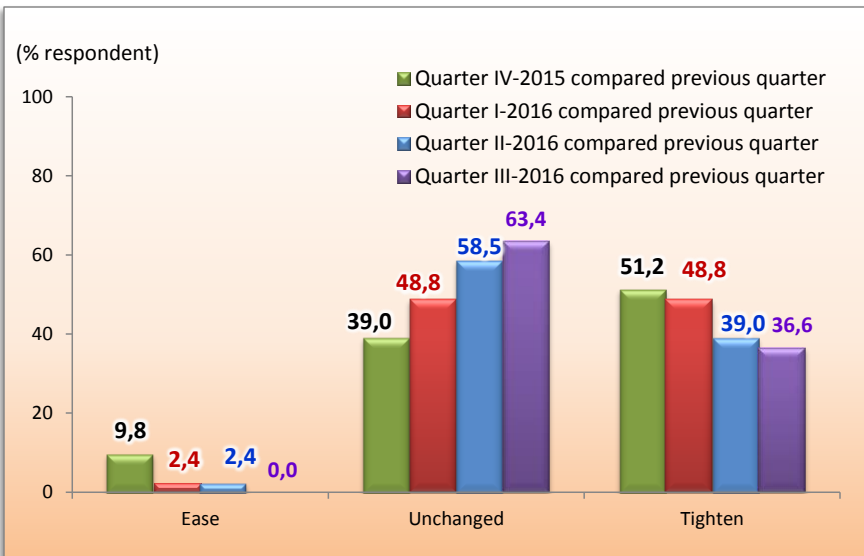
3.a. PROVISION OF INFLATION EXPECTATION DATA

- The longer time horizon of the question, the harder for respondents to provide inflation expectations answers (uncertainty inflation). This is also reflected in the increasing number of standard deviations.

- For example, when time horizon of question is 12 months ahead, all respondents expected that inflation to June 2016 was greater than 5%. Whereas for the same period and the time horizon of question is 3 months ahead, BS and MIFS respondents expected that inflation rate will be 3,62% and 4,44%, respectively, which were lower than expectation of 12 months ahead.
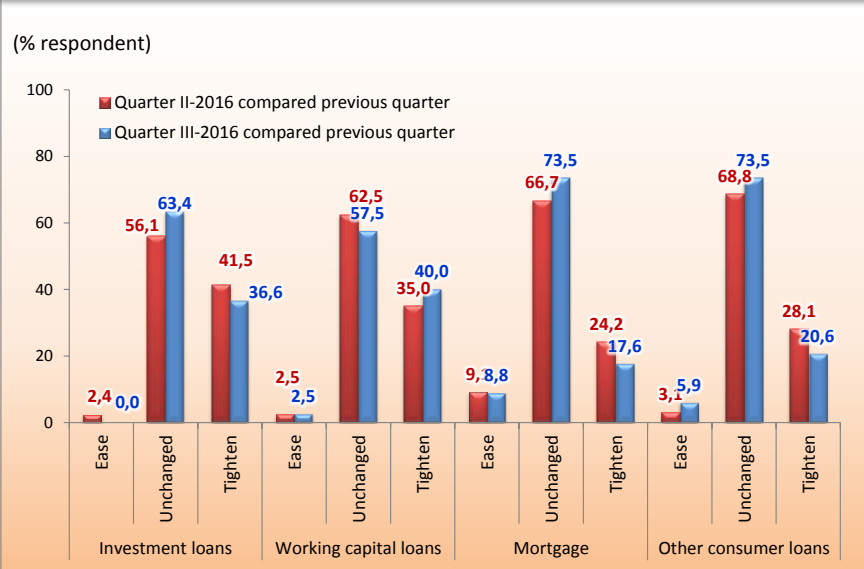
3.b. PROVISION OF LENDING POLICY DATA

- *Complementing the lending data submitted by banks through reports, Bank Indonesia also conducts a Banking Survey to collate early information on bank policy to accumulate deposits, disburse loans, place excess liquidity, lending and deposit rates as well as the supply and demand of new loans.*

- *In order to provide Lending Policy Information, additional questions were incorporated into the questionnaire on lending standards sections in the questionnaire.*

  - *the lending standards/guidelines on credit lines compare to that in the previous quarter. (The question of lending standards is broken down for loans in general, investment loans, working capital loans, consumer loans, etc.)*

  - *the aspects of lending policy, such as the ceiling on credit lines, loan maturity, costs of loan approval, loan agreements, collateral, administrative requirements,*

  - *the determinants of the change in lending policy*

- *Respondents are only required to answer "tighter', 'slightly tighter', 'unchanged', 'slightly looser' or 'looser'.*

3.b. PROVISION OF LENDING POLICY DATA

- *The latest Banking Survey revealed that the majority (63.4%) of respondents stated that bank policy to extend credit would remain relatively unchanged from the previous period, up from 58.5% last quarter, while the percentage of those who reported a tighter credit policy fell from 39.0% to 36.6%.*

- *Based on loan type, more respondents confirmed lending policy would remain relatively unchanged from the previous period, with the exception of working capital loans. A total of 57.5% of respondents stated that lending policy for working capital loans would remain unchanged from the previous period, down from 62.5% last quarter*

4. CONCLUSION

- ❑ The monetary policy framework of a central bank evolves over time. Any evolution of the monetary policy framework applied by Bank Indonesia will require a corresponding change in the available statistics needed in terms of the scope and depth of the data.
- ❑ The implementation of ITF by Bank Indonesia demanded information on inflation expectations. In addition, the application of macroprudential policy also required data to support the monitoring of financial system stability.
- ❑ By redesigning the questionnaires of some surveys, Bank Indonesia tries to fulfill the new requirement for statistics and information to support monetary and macroprudential policy.

Thank You

The Result of Pilot Project IES – *Standard Deviation*

(%)

Survey	3 month	6 month	12 month	24 month
Consumer Survey	9.95	9.80	10.83	12.25
Retail Sales Survey	4.63	4.42	5.49	6.16
Business Survey	4.07	4.03	5.02	6.72
Macroeconomic Indicator & Forecasting Survey	0.91	0.84	0.73	0.86