FINANCIAL LIBERALIZATION AND MONEY DEMAND IN INDONESIA: IMPLICATIONS FOR WEIGHTED MONETARY AGGREGATES

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ABSTRACT

FINANCIAL LIBERALIZATION AND MONEY DEMAND IN INDONESIA: IMPLICATIONS FOR WEIGHTED MONETARY AGGREGATES

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This study investigates Indonesia monetary regime changes and the significance of Divisia monetary aggregates in formulating the monetary policy in Indonesia from the period of 1981Q1 to 2005Q4. A money demand function has been constructed to compare the relative performance for Simple-sum M1 and M2 (SSM1 and SSM2) and Divisia M1 and M2 (DM1 and DM2) monetary aggregates. Empirical findings indicate that only DM1 model can yield excellent results amongst all of the money demand models. The obtained coefficients for DM1 model are consistent with *a prior* theoretical expectation and carried plausible magnitudes. The DM1 model is satisfactory as proven by the residual tests. The estimated residuals have normal distribution pattern and homoskedasticity variances. In a nutshell, Divisia monetary aggregates are proven not only theoretical superior but also empirical valid as useful measurement of money for the case of Indonesia. The Centre Bank of Indonesia may consider shifting back monetary aggregate targeting using Divisia money as the policy variable instead of inflation targeting since the inflation targeting in general is not a suitable framework for developing countries (Masson *et al.*, 1998).

ABSTRAK

LIBERALISASI KEWANGAN DAN PERMINTAAN WANG DI INDONESIA: IMPLIKASI UNTUK AGREGAT MONETARI WAJARAN

Oleh

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Kajian ini menyelidik perubahan rejim kewangan dan kepentingan agregat monetari Divisia dalam menggubal dasar kewangan di Indonesia dari 1981Q1-2005Q4. Fungsi permintaan wang telah dibina untuk membandingkan prestasi relatif di antara agregat penambahan mudah M1 dan M2 (SSM1 dan SSM2) serta agregat monetari Divisia M1 dan M2 (DM1 dan DM2). Penemuan empirik menunjukkan bahawa hanya model DM1 dapat menghasilkan keputusan yang terbaik antara semua model permintaan wang. Selain itu, koefisien yang diperolehi oleh model DM1 didapati konsisten dengan teori dan mempunyai magnitud yang munasabah. Keputusan model DM1 juga sangat memuaskan seperti yang dibuktikan oleh ujian terhadap ralatnya di mana ianya mempunnyai pola distribusi yang normal dan varians homoskedasticity. Secara ringkasnya, agregat monetari Divisia terbukti bukan sahaja lebih sah dari segi teori, malahan juga sahih secara empirik sebagai ukuran wang yang berguna di Indonesia. Bank Indonesia boleh mempertimbangkan supaya kembali kepada dasar penargetan agregat monetari dengan menggunakan wang Divisia untuk menggantikan dasar penargetan inflasi kerana dasar penargetan inflasi secara umumnya merupakan polisi yang tidak sesuai untuk negara-negara sedang membangun (Masson *et al.*, 1998).

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INTRODUCTION

1.0 Introduction

Financial liberalization is generally defined as "to surround with financial innovations and institutional or regulatory changes." Prominently, it has been playing an essential role in economic development by allowing financial market determined by market forced. Economies will never grow smoothly without financial support. Fry (1995) stated that the growth in financial system has positive effect on the volume and/or efficiency of investment and the long-run rate of economic growth. However, instability or poor management in the financial market in the country will create negative impact to the economic growth and development. Financial liberalization helps in promoting financial system efficiency and enhancing the effectiveness and flexibility of monetary policies. For instance, an open capital market can absorb more foreign investments, at the same time, it can generate higher return projects and lead to the financial market deepening. Therefore, financial liberalization plays an important role to boost up the economy growth.

Meanwhile, monetary policy is among the most important macroeconomic policies used by a government to affect the money supply and interest rate in the financial market. A central bank is nominated by the government to conduct the monetary policy in the country. For example, Bank Indonesia (BI) which acts as the central bank of Indonesia has the role to promote financial market stability by central bank of Indonesia has the role to promote financial market stability by safeguarding the Rupiah value, and controlling the money supply in the market to influence the liquidity condition, consequently, it will affect the real economy activities. The central bank can monitor the market liquidity through its monetary policies like open market operation, discount loan and required reserve ratio. Nevertheless, before any decision is made on how much of the money supply it shall channel into the market, the central bank needs to know about the amount of money demanded by the economy.

The idea of demand for money relates to the reasons the people hold the money balances. By estimating the money demand equation, the monetary authority can obtain useful information on which monetary aggregate is better to be used as the monetary policy tool under the current economic conditions. Money is just like the backbone of a country which plays an essential role in the transmission and formation of monetary policy. Like many other countries, financial liberalization plays a key role in determining money demand and its fluctuations in Indonesia. However, does the rapid financial development in Indonesia bring any significant impact on the use of monetary aggregate as the monetary policy tool? Belongia (1996) contended that the incompetence of the conventional monetary aggregates to internalize the pure substitution effects leads to the instability of money demand functions. Therefore, it is crucial for the policymakers to know which monetary aggregate is the most suitable policy variable in formulating monetary policy in Indonesia.

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1.1 Financial Development in Indonesia[1]

Since the government of Indonesia focused on political interests from 1960-1965, its economy faced hyperinflation (635 percent in 1966), extremely low GDP growth and flagging investment. To ease hyperinflation, BI implemented monetary policies which were concerning in supply side (monetary targeting). This policy burdened with multiple objectives. Firstly, the objective was to maintain the stability of Rupiah. Secondly, this policy was implemented to disburse loan advance to the government, direct loans to the state institutions as well as the businessman and also extend the liquidity loans. Table 1 in page 11 shows the timeline of Indonesia monetary policy implications.

Initially in 1959, BI issued the tight money policies, namely credit supervision policy (quantitatively and qualitatively), Rupiah devaluation policy, monetary sanitation policy and foreign exchange policy for foreign payment traffic. On 25 August 1959, BI devalued the Rupiah exchange from Rp 11.40 against USD to Rp 45 against USD (74.4 percent). At the same time, government announced the monetary sanitation by lowering the value of fractions of Rp 500 and Rp 1,000 to Rp 50 and Rp 100 respectively. Moreover, current accounts deposit and time deposit were frozen as much as 90 percent for the value more than Rp 25,000 and turned it into the long-term saving.

[1] See more on special unit for Bank Indonesia Museum: History of Bank Indonesia (Monetary), especially from 1959-2005; special unit for Bank Indonesia Museum: History of Bank Indonesia (Banking), especially from 1983-1997 and Coutsoukis (1992) for an insightful background of monetary policies in Indonesia.

However, the inflation rate still kept increasing from 1959 to 1965 which was 22 percent to 594 percent due to the government's expenditure was soaring. To cope with this inflationary pressure, BI emitted the new Rupiah banknotes where the domination of Rp 1,000 was squeezed to Rp 1 on 13 December 1965. The value of Rupiah was compressed. Simultaneously, government also controlled the foreign exchange resources (earning and spending of foreign exchange in services sectors, traffic of the trading and capital supervision to prevent capital flight).

The economic condition that became uncontrollable under the "Guided Economy" made the government prohibited BI from issuing its Annual Report and Monetary Statistics during 1966. The bank was aimed at maintaining the country's economic stability. The transition from the Old Order regime to the New Order regime had a significant impact to the economic development in Indonesia. The previous government left the new government a lot of mess including hyperinflation, damaged economic infrastructure, moral degradation of the civil servants due to rampant corruption and poverty. This hyperinflation was mainly caused by two major factors, namely deficit spending policy and short supply of goods, particularly foodstuff.

During 1966, the government took action to issue monetary policy concerning the supply side, that is increasing the banks' Minimum Mandatory Current Account (GWM) up to 30 percent, raising bank interest rate (for loans and time deposit), imposing the expansion ceiling of bank net assets and banning of long-term bank lending and import credit, particularly for consumption goods. These policies were made more effective with the help of fiscal policy, especially from the deficit spending policy to balance budget policy which would no longer covered with printing money with foreign loans. The interest rate targeting lasted until the end of 1969.

The multiple rate system (interest rate targeting and monetary targeting) was simplified during 1967-1986. On 28 July 1967, BI fixed the Rupiah exchange rate against US dollar based on the basic conversion rate, namely Export Bonus and Supplementary Foreign Exchange System (DP). Every time the exporters sold the foreign exchange, they were eligible to export bonus and supplementary foreign exchange. BI replaced the sole exchange rate system offering conversion rate of Rupiah 378 against US dollar on 17 April 1971. However, this exchange rate was further devalued on 23 August 1971 which was to Rp 415 against US dollar. BI also lifted most restrictions on international transactions that were heavily regulated. Central bank was obliged to buy or sell as much foreign currency to maintain exchange rate.

The oil revenue increased and BI found itself in the excess of printing Rupiah currency in the exchange for the oil-generated dollar revenues in the year of 1974. Bank credit rose precipitously once the currency was deposited in domestic banks. Inflation surged to over 40 percent that same year. BI responded aggressively by imposing direct controls on the amount of credit issued by individual banks, a policy that also contributed to the lack of competition with the favoured state banks.

By using multiple rate system, inflation was reduced to less than 10 percent per year since 1978, but four years of double-digit inflation had seriously undermined Indonesia's exporters. Due to the eroding profits of exporters, BI was compelled to devalue the Rupiah by 50 percent in 1978, bringing the exchange rate to Rupiah 625 per US$1. At the same time, both private and foreign banks and state banks were allowed to set their own interest rate on time deposits with maturities not more than 3 months (Habibullah, 1999).

Rupiah was further devaluated on 30 March 1983 from Rp 702.50 to Rp 970 per US$1 to improve the country's competitiveness. Furthermore, this devaluation was accompanied by a major financial reform that eliminated the direct controls BI had relied on in the past to manage the growth in bank credit. At the same time, the state banks' interest rates on most categories of deposits and on all loans except for high priority loans are deregulation (Habibullah, 1999).

Inflation rate was creeping up due to the higher cost of fuel in early 1984 and the devaluated of Rupiah although the Indonesian economy grew quite significantly compared of previous years. However, the Rupiah was further devaluated 31 percent in 1986 with response to the decline in foreign exchange earnings through oil exports. The currency has depreciated from Rupiah 1,134 per US$1 to Rupiah 1,641 per US$1. Later on, the government launched the monetary tightening policies known as Sumarlin's First Move on June 1987 and 1991 since the speculative transaction on foreign currencies was so rampant.

On 27 October 1988, the Deregulation Policy Package for the Monetary, Finance and Banking which known as Pakto 1988 had been introduced. In order to curb inflation and strengthen the banking structure, the March 1989 Package and January 1990 Package were introduced in the later year. Moreover, further monetary tightening known as Sumarlin's Second Move was imposed due to the apparently spurred excessive and less selective banking credit expansion after received the freedom from Pakto 1988. Furthermore, Soekarni's (1995) study found the following:

> Liquidity credits from BI were streamlined to direct at three priority areas in 1990 (food procurement, cooperatives and investment). The aimed for this policy are to improving credit structure, removing the distortions in the market mechanism by promoting more market-oriented interest rates, and lastly increasing the efficiency in the allocation of funds.

The deposit bank rates went up to 27 percent p.a. on average which has triggered expensive cost of fund for domestic banks although the inflation rate gradually slowed down to 4.9 percent on 1992 after the monetary tightening policies has been imposed. Afterwards, there were measures to promote the effective conduct of monetary policy, especially by improving the open market operation system, by replaying the Cut-Off Rate (COR) system and introducing Stop-Out Rate (SOR) system in the auctioning of BI Certificate in 1993. Licenses were issued to the brokerage firms to reduce segmentation in the Rupiah and foreign exchange markets.

Government forced to adopt a certain market intervention band since the Rupiah exchange rate was floated in a more flexible fashion up to 1994. Other than adopted intervention through the foreign currency market to restrict exchange rate fluctuation, BI also used other instruments which were control of Rupiah liquidity, restriction of Bank Net Foreign Exchange Position and control of Offshore Commercial Loans. With this intervention, the Rupiah exchange rate was relatively steady until the first half of July 1997 which was Rp 2350/USD. However, Rupiah was under pressure. Rupiah was floated and abolishment of the intervention band BI intervened in the foreign exchange market with forward sales, followed by spot sales in 1997 (Djiwandono, 2005). Government announced its decision to get help from IMF. After the year, there was restriction on indirect lending by onshore banks to non-residents via swap market (Fane, 2005). Djiwandono (2005) also suggested that:

> The 1997/1998 budget that was released was heavily criticized by the market where the budget contained a deficit of around 1% of GDP and this was a violation of letter of intent (LOI). The GDP should be increased 1% in 1998. Other than that, there is a great Asian Financial Crisis during this period. Therefore, the Rupiah went under pressure.

Indonesia faced the greatest currency depreciation after the Asian Financial Crisis. The target was set for the CPI excluding the impacts of government-administered prices and incomes policy. Mariano and Villanueva's (2006, pp. 219) study also found the following:

> On 2000 and 2001, the inflation targets were set at 3-5% and 4-6% respectively. During 2002, due to the banking sector was in a weak condition and the risks in the real sector were high, the attempt to stimulate base money growth was not effective. Moreover, additional economic liquidity through banks would just return to the central bank. The base money was far below demand conditions was largely affected the base money performance more than monetary policy.

However, inflation kept on increasing until 2004 due to the increase in administered prices, depreciation of the exchange rate, and rising inflation expectations. To cope with this, BI further tightened the monetary policy and strengthened the policy coordination with the government and directed measures to stabilize the exchange rate. In addition, the key measures of the enhanced monetary policy framework focused on four main areas, which were:

a. The move from base money to the BI rate as operational target for monetary operations (policy instrument);
b. Enhanced decision-making process consistent with forward-looking strategy of directing current monetary policy response to achieve the inflation target;
c. More transparent communication strategy to signal the stance of monetary policy and to guide private sector expectations; and
d. Strengthened policy coordination with government to mitigate inflationary pressures stemming from increase in administered prices and volatile food prices, as well as for better and concerted management of the overall economy.

In addition, BI was free to make monetary policies in compliance to the inflation targeting in line its independence from 1999. Sarwono (2007, pp. 3-4) had highlighted the issues that illustrated the challenges of inflation targeting:

> Central Bank Act 1999 was imposed with the aim to focus on maintaining Rupiah stability and to achieve goal of instrument and institutionally independent. Afterwards, inflation targeting start announced in 2000 and base money target also utilized under IMF program. The inflation fell down until end of 2003, but the target hardly to achieve. Due to this problem, Central Bank Act was amended in 2004. At the same time, government reset the instrument independent and reset the inflation target for 2005, 2006 and 2007. However, Indonesia faced oil shock again on 2005. Hence, government revises the CPI on 2005 for the following year which are 2006, 2007 and 2008.

Indonesia used base money target until July 2005, and then shifted to BI interest rate targeting (Mariano and Villanueva, 2006, pp. 209). Sarwono (2007, pp. 5-6) further illustrated the policies implemented within 2005 and 2006 as follow:

> Due to forward looking monetary policy decision-making, government announced the other framework which is interest rate targeting during July 2005. Moreover, the other reason is interest rate has influence expectation where it can quickly response to any pressure of inflation and easier to be understood. BI used the interest rate (BI rate) as the policy reference rate. This can enhanced the transparent communication strategy and improving policy coordination with the government. Furthermore, when maintaining the monetary independence and balancing the pressure on exchange rate, a multiple rate system (inflation targeting, interest rate targeting and exchange rate) of a small-open economy like Indonesia need to deal with the capital flows uncertainly.

Table 1: Timeline of Indonesia Monetary Policy Implications

Year(s)	Events
1959	• Monetary targeting. • BI used the tight money policies:- ➢ Credit supervision policy (quantitatively and qualitatively); ➢ Rupiah devaluation policy; ➢ Monetary sanitation policy; and ➢ Foreign exchange policy for foreign payment traffic. • Rupiah exchange was devaluated from Rp 11.40/USD to Rp 45/USD. • Lowering the value of fractions of Rp 500 and Rp 1,000 to Rp 50 and Rp 100 accordingly. • CAD and TD were frozen as much as 90 % for the value more than Rp 25,000 and turned them into the long-term saving.
1965	• Monetary targeting. • BI emitted the new Rupiah banknotes where the domination of Rp 1,000 was squeezed to Rp 1. • Government also controlled the foreign exchange resources.
1966	• Interest rate targeting. • Government adopted monetary policy concerning the supply side:- ➢ Increasing the banks' GWM up to 30%; ➢ Raising bank interest rate (for loans and time deposit); and ➢ Imposing the expansion ceiling of bank net assets and banning of long-term bank lending and import credit, particularly for consumption goods.
1967	• Multiple exchange rate system. • BI fixed the Rp USD based on the basic conversion rate, namely Export Bonus and Supplementary Foreign Exchange System (DP).
1971	• Multiple exchange rate system. • 17 April 1971, BI replaced the sole exchange rate system offering conversion rate of Rp 378 USD. • Further devaluated on 23 August 1971 (Rp 415/ USD). • Lifted most restrictions on international transactions that were heavily regulated. • BI was obliged to buy or sell as much foreign currency to maintain exchange.
1974	• Multiple exchange rate system. • Oil revenue increased, bank printed excess money to exchange for oil-dollar. • Imposed direct control on the amount of credit issued by individual banks, created less competition to the state bank.
1978	• Multiple exchange rate system. • Rupiah exchange was devaluated to Rp 625/USD. • Both private and foreign banks and state banks were allowed to set their own interest rate on time deposits with maturities not more than 3 months.

Table 1: Timeline of Indonesia Monetary Policy Implications (continued)

Year(s)	Events
1983	• Multiple exchange rate system. • Announced Package of Policies June 1, 1983. • Rupiah exchange devaluated from Rp 702.50 /USD to Rp 970/USD. • State banks' interest rates on most categories of deposits and on all loans except for high priority loans were deregulation.
1986	• Interest rate targeting. • Decline in foreign exchange earnings through oil exports. • Rupiah exchange devaluated from Rp 702.50 /USD to Rp 970/USD.
1987	• Interest rate targeting. • Speculative transaction on foreign currencies was rampant. • Government launched the monetary tightening policies known as Sumarlin's First Move.
1988-1999	• Exchange rate targeting. • Introduced Deregulation Policy Package for the Monetary, Finance and Banking (1988) and March 1989 Package:- ➢ To curb inflation and strengthen the banking structure.
1990	• Exchange rate targeting. • Introduced January 1990 Package to curb inflation and strengthen the banking structure. • Imposed Sumarlin's Second Move (1990):- ➢ Apparently spurred excessive and less selective banking credit expansion after received the freedom. Liquidity credits from BI were streamlined to direct at three priority areas, namely food procurement, cooperatives and investment.
1993	• Exchange rate targeting. • Improved the open market operation system, by replaying the Cut-Off Rate (COR) system and introducing Stop-Out Rate (SOR) system in the auctioning of BI Certificate
1994	• Exchange rate targeting. • Adopted intervention through the foreign currency market. • BI controlled rupiah liquidity, restriction of Bank Net Foreign Exchange Position and control of Offshore Commercial Loans.
1997	• Exchange rate targeting. • Rupiah exchange rate was relatively steady (Rp 2350/USD). • Rupiah was floated and abolishment of the intervention band BI intervened in the foreign exchange market with forward sales, followed by spot sales in 1997.

Table 1: Timeline of Indonesia Monetary Policy Implications (continued)

Year(s)	Events
1998	• Exchange rate targeting. • The budget contained a deficit of around 1% of GDP. This was a violation of letter of intent (LOI). The GDP should be increased to 1%. • Asian Financial Crisis. • Rupiah went under pressure. • Restriction on indirect lending by onshore banks to non-residents via swap market.
2000	• Inflation targeting. • Set the inflations target from 2000 to 2003 as a result of government-administered prices and incomes policy.
2004	• Inflation targeting • Inflation kept on increasing until 2004. • BI has responded with further tightening monetary policy, accompanied by direct measures to stabilize the exchange rate and strengthened policy coordination with the government to mitigate the impacts of administered prices and prices of volatile foods. • Monetary framework focused on four main areas:- ➢ Base money to the BI rate; ➢ Enhanced decision-making process; ➢ More transparent communication strategy; and ➢ Strengthened policy coordination with government to mitigate inflationary pressures. • Central Bank Act was amended in 2004 due to target hardly to achieve:- ➢ Reset the instrument independent. ➢ Reset the inflation target for 2005, 2006 and 2007.
2005-2006	• Multiple rate system (inflation targeting, interest rate targeting and exchange rate targeting) Indonesia faced oil shock again on 2005. • Revised the CPI on 2005 for the following year which are 2006, 2007 and 2008. • After using base money until July 2005, it shifted to BI interest rate.
2007-2008	• Inflation targeting based on CPI revise on 2005.

Sources: Bank Indonesia Museum: History of Bank Indonesia (Monetary, 1959-2005); Bank Indonesia Museum: History of Bank Indonesia (Banking, 1983-1997); Coutsoukis (1992); Soekarni (1995); Habibullah (1999); Djiwandono (2005); Mariano and Villanueva (2006); Sarwono (2007).

1.2 Monetary Policy and Money Demand

Definition of the phrase monetary policy is commonly used in today's world. What does this phrase imply? The basic meaning of the word monetary simply means that something that is related to or involving money. The word policy in this context means a plan of action adopted by an individual or a social group of people. Therefore, the phrase monetary policy can be understood as an action involving money that is adopted by an individual or a group of people. According to Mankiw (2007), monetary policy means the setting of money supply by policymakers in the central bank. Thus, the monetary policy in Indonesia is controlled by the Bank Indonesia.

For the money demand, it is defined as the money that is demanded or wanted by the society. The money demand is controlled by the needs of the people. But why money is important that the people control it not the government. This relates to the price in the market. When a price of a product increases, this would lead to a higher demand for the money. What is more important here is that the money demand plays an important role in fixing the price as well.