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Integration Of Monetary And Macroprudential Policies Under The Influence Of Foreign Capital Flows In Controlling Inflation And Financial Stability

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Abstract

This study integrates monetary policy and macroprudential policy under the influence of foreign capital flows in controlling price stability and realizing financial stability. The transmission channel for monetary policy uses the interest rate channel (Keynesian approach), while the macroprudential channel uses the capital channel (Central Bank of Indonesia).

This study uses Structural Vector Auto Regression (SVAR) analysis with Impulse Response Function (IRF) and Variant Decomposition (VD) estimation tools. The research data is secondary data sourced from the World Bank and Indonesian Economic and Financial Statistics published by Bank Indonesia with quarterly time series data for the period 2005 to 2021.

The interest rate channel as a proxy for monetary policy and the capital channel as a proxy for macroprudential policy under the pressure of foreign capital flows, integrate with each other in controlling inflation and realizing financial stability. High capital inflows to Indonesia, especially portfolio investment, are the main cause of shocks to foreign exchange reserves, inflation, and exchange rate changes. Changes in policy rates, however, significantly affect the magnitude of capital inflows into Indonesia.

On the other hand, the benchmark interest rate and capital buffer are complementary in controlling price stability and financial stability. The balanced value of the contribution of each instrument shows the commitment of both policies that strengthen each other to achieve price stability and financial stability.

Keywords: monetary transmission, macroprudential transmission, foreign capital flows, inflation, financial stability.

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INTRODUCTION

Achieving financial system stability is a very important goal of a country's economic policy. The crisis that occurred in 2008 showed that maintaining economic stability is not enough to maintain price stability, but it is also necessary to maintain financial system stability.

The increasingly integrated global financial system has led to the opening up of the country's economy, resulting in higher mobility of capital inflow and capital outflow. Foreign capital flows not only affect the exchange rate and other financial asset prices, but also impact liquidity conditions and credit growth. Fluctuations in capital flows will further affect the effectiveness of monetary policy. On the other hand, the mobility of foreign capital flows is influenced by a country's exchange rate system and foreign exchange system.

In determining and maintaining its exchange rate system, every country faces a trade off. The country has to give up one of the three goals of (1) exchange rate stability (hard peg), (2) monetary independence, (3) financial market integration (no capital controls) which is called The Impossible Trinity.

Capital inflow can increase domestic investment increase liquidity and reduce the cost of capital, generate collateral benefits, and lead to increased economic growth (Mileva, 2008). On the other hand, capital inflows are also accompanied by future liabilities (Eichengreen, 2006), as well as the threat of surges (and/or capital reversals) that can jeopardize resilience and increase macroeconomic risks in a country (Ostry, et al, 2010).

In many countries, foreign capital flows are often associated with portfolio investment flows as they are more volatile than other capital flows. Foreign capital inflow to Indonesia once reached more than USD 26.6 million (USD 13.2 million of which was portfolio investment) in 2010. These capital flows led to an appreciation of the rupiah by 12.5%.

The imbalance of capital outflow and inflow in an economy directly impacts the exchange rate. When there is a capital outflow that is much larger than the capital inflow, the demand for foreign exchange increases sharply, resulting in the exchange rate depreciating. In the next stage, the sudden stop has an impact on the performance of the current account. A study conducted by Edward (2004) on 157 countries in the period 1970 - 2001, there were 5.6% sudden stops and 11.8% Current Account (CA) reversals. From these events, it can generally be seen that the two phenomena are interrelated. Of the 2228 observations, 46% that experienced a sudden stop also faced a CA reversal.

The sudden stop phenomenon, which is defined as a large decrease in the net inflow of foreign capital, has also occurred in Indonesia in the period after the 1997/1998 crisis. The high capital outflow caused the demand for forex to be much greater than the supply. This caused the rupiah to experience depreciation pressure. Bank Indonesia implemented a large amount of forex intervention policy which was reflected in the decline of foreign exchange reserves.

Capital inflows tend to increase foreign exchange reserves, thereby improving balance of payments performance. The increase in foreign exchange reserves causes the exchange rate of the recipient country's currency to appreciate. Conversely, a capital account deficit indicates a net capital outflow. When this happens, the flow of foreign exchange reserves abroad increases which will further deteriorate the balance of payments and be followed by the depreciation of the country's currency.

In the aftermath of the 2008 global financial crisis, loose monetary policies pursued by developed countries encouraged high foreign capital inflows to emerging market countries (EMEs), including Indonesia. The inflow of foreign capital then pushed the interbank rate to be very low. On the other hand, lowering the benchmark interest rate is difficult given that pressures on domestic inflation and the current account deficit are still high. Then the spread between the benchmark interest rate and the interbank rate widened, resulting in less than optimal monetary policy signaling and transmission.

The realization of price stability and financial stability depends on the effectiveness of monetary policy which is transmitted through the benchmark interest rate, thus affecting money market and banking interest rates. Meanwhile, whether or not monetary policy is effective depends on how fast banks can pass-through monetary policy to deposit and lending rates, where the money market is the platform for implementing the policy.

Since 2005, price stability in Indonesia has been based on inflation targeting through various channels of monetary policy transmission. Maski (2005) found that the interest rate channel is more effective than the money quantity channel in influencing inflation. Meanwhile, the quantity of money channel has lost its effectiveness and relevance with the development of financial markets and the integration of global financial markets. Financial system stability is established by the soundness of financial institutions and stable financial market conditions. Therefore, proper implementation of macroprudential policies is important to prevent financial instability from spreading throughout the economy.

Excessive credit growth, often linked to systemic risk, is considered a key factor contributing to crises and disruptions to financial stability.

The banking crises that occurred in Chile (1982), Denmark, Finland, Norway and Sweden in 1990/1991, Mexico (1994) and Thailand and Indonesia (1997/1998) were also preceded by a period of credit boom (Dell Aricia, et all 2012).

Many factors affect the stability of a country's financial system, which can be broadly divided into two main factors, namely external factors and internal factors. External factors stem from global liquidity shocks that encourage short-term capital inflows or outflows, global imbalances and contagion effects.Internal factors include interest rates, exchange rates and the ability to control capital inflows, credit and banking.

The positive or negative impact of capital flows resulting from financial liberalization is something that is very important to study. The stability of the financial system in this paper is reflected through the integrated development of foreign exchange reserves, inflation, and exchange rates under the influence of foreign capital flows.

Based on the background of the problem, the main research problems can be formulated as follows: How much the role of foreign capital flows affects changes in foreign exchange reserves, inflation and exchange rates ? Is there a complementary effect between monetary and macroprudential policies in achieving financial stability ?

LITERATURE REVIEW

A stable financial system is able to allocate resources and absorb shocks, thereby preventing disruptions to real sector activities and the financial system. Issing 2003 defines financial stability as a situation characterized by stable asset prices and the absence of financial crises, where market interest is transmitted easily to interest rates.

Price stability is a prerequisite for sustainable economic growth, as unstable inflation creates uncertainty. The Mundell-Fleming model is a reference model in determining policies in an open economic system with perfect capital mobility. This model shows that the effect of almost every economic policy on a small economy depends on the exchange rate system adopted by the economy. In other words, the effectiveness of a policy in affecting aggregate income depends on the exchange rate system.

The Mundell-Fleming model can be used to analyze effective policies applied to a floating exchange rate system (Mankiw, 2007). Transmission of the Mundell-Fleming model can occur through the trade channel where a country will lower interest rates, depreciate the exchange rate and create competition. So that the country will experience a trade surplus due to an increase in exported products and a decrease in imports from other countries.

Identifying the effectiveness of the monetary policy transmission mechanism can be measured by two indicators (Mishkin, 2001). The first indicator is measured by the speed or time lag and the second is the strength of the variables in responding to monetary policy instrument shocks.

Monetary policy transmission according to the Keynesian approach is through the interest rate channel (price approach). This approach argues that the relationship between the monetary sector and the real sector is not direct, but through changes in interest rates or the price of money in the monetary sector which in turn affects the output gap and inflation as the ultimate target of monetary policy (Bofinger, 2001; Mishkin, 2004 and Taylor, 1995).

Natsir (2011) showed that the monetary transmission mechanism through the interest rate channel was very effective in transmitting monetary policy in realizing the ultimate goal of monetary policy in Indonesia for the period 1990:2 - 2007:1.

The transmission mechanism of macroprudential policy is the mechanism by which macroprudential policy works until it affects the banking and credit cycle.

Conceptually, macroprudential policy is a regulatory instrument aimed at promoting overall financial system stability. Macroprudential instruments are used to mitigate three categories of systemic risk, namely the risks posed by overly strong credit growth, liquidity risk and the risks posed by heavy capital inflows (Angelini et. al, 2014).

This procyclical behavior in the credit growth cycle further magnifies financial and economic fluctuations and instability. The principle is to encourage financial institutions to prepare sufficient buffers in good and bad economic times. Countercyclical Capital Buffer (CCB) is a capital regulation instrument that requires banks to hold additional capital above minimum capital.

Stephan Fahr and John Fell's (2017) found that macroprudential policy is more effective than monetary policy in achieving financial stability, while monetary policy is more effective than macroprudential policy in achieving price stability.

Empirical research by Pramono, et al. (2015) on all banks in Indonesia, shows that changes in capital regulations that require banks to maintain higher buffers are expected to reduce excessive credit growth as one of the sources of systemic risk.

The exchange rate is the price of a foreign currency that can be expressed in terms of the domestic currency (Dominic Salvator, 2013). Several factors influence exchange rate movements, namely fundamental factors, technical factors, and market sentiment. Fundamental factors relate to economic indicators such as inflation, interest rates, relative income differences between countries, market

expectations and Central bank intervention. Technical factors relate to supply and demand conditions for foreign exchange.

In the era of globalization of the world economy, the value of a country's currency is strongly influenced by capital flows between countries and speculation activities. There are three kinds of exchange rate systems: fixed exchange rate system, floating exchange rate system and managed floating exchange rate. In an open economy with a free foreign exchange regime and a floating exchange rate system, external volatility should be dampened by exchange rate adjustments, so that domestic interest rates need not fluctuate (Manurung & Rahardja 2004).

Foreign exchange reserves illustrate the financial strength of a country because of its ability to finance balance of payments imbalances as an effort to maintain financial stability and intervene in the market so that the exchange rate remains stable.

Based on the Keynesian Balance of Payment Theory, if for some reason a country's interest rate increases, it will lead to a decrease in investment in the country, thus reducing aggregate income. Furthermore, a decline in aggregate income can reduce import capacity. If the value of imports is lower than the value of exports, this can lead to a balance of payments surplus through the trade balance and increase the position of foreign exchange reserves, and vice versa. Therefore, assuming ceteris paribus, the relationship between interest rate and foreign exchange reserves is positive (Nopirin, 2009).

RESEARCH METHODS

The analysis of the volatility of short-term capital flows in relation to foreign exchange reserves, inflation and exchange rates is an interesting study, considering that global financial system issues and their impacts are always associated with the stability of the domestic financial system.

In studying the volatility dynamics, the author uses a Structured Vector Auto Regression (SVAR) model consisting of several equations, which describes how the volatility of short-term foreign capital flows, interest rates, foreign exchange reserves and exchange rates interact with each other.In the SVAR method, a restriction is made based on strong theoretical relationships on the ordering scheme of the variables used.

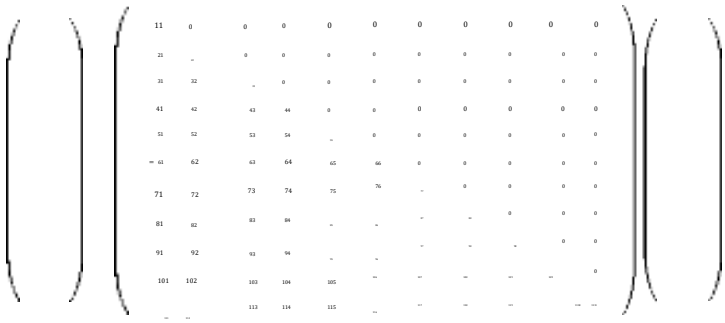
The SVAR model is used to obtain non-recurrent orthogonalization of the error term in the impulse response analysis framework. To obtain orthogonalization of the non-recusive error term, a number of restrictions must be established that identify the structural component in the error term with the estimation equation A(et) =

B(ut) ; E[u.u'] = I, where et is the structural shock and ut is the residual shock. Matrix A is a lower-triangular matrix, matrix B is a diagonal matrix, and I is an Identity matrix. The innovation structure is assumed to be othonormal so the covariance matrix is the identity matrix. SVAR short-term restriction is obtained from the equation: e = S.u and long-term restriction is e = phi. F. u. Matrix S is the triangular matrix of the Short Recursive Impulse Response, F is the triangular matrix of the Long Recursive Impulse Response, while phi is the golden ratio of 1.618.

The VAR model is denoted as follows: A0 Xt = A(L) Xt-1 + Bet.

Xt is the contemporaneus relations between variables, A(L) is a finite-order polynominal matrix with lag operator L, et is a structural disturbance matrix with non-zero diagonal and B is a matrix with non-zero diagonal.

So that the restriction of the residual equation in the SVAR model which will be carried out the iteration process to obtain all the matrix coefficients, is arranged as follows:



The variable ordering used are :

--> e_{cif} --> e_{cb} --> --> e_{puab} --> e_{kdt} --> e_{gdp} --> e_{npl} --> e_{jub} --> e_{inf} --> e_{nt}

The ordering scheme shows that a shock to the benchmark interest rate will result in a shock to foreign capital flows, capital cushion and ultimately affect the value of inflation and the exchange rate.

Based on the above matrix, 66 restrictions in the form of 11 residual equations are entered into the model, then an iteration process is carried out to obtain all matrix coefficients. With the SVAR estimation obtained, it will be used as the basis for Impulse Response Function (IRF) and Variance Decomposition (VD) analysis. IRF analysis is to measure the response of a variable due to a shock to other variables at the present and future time, while VD is to determine the influence between transmit variables.

ANALSIS RESULT

Research Results

The interest rate path reflects Monetary policy and the capital path reflects Macroprudential policy. The analysis procedure starts from the identification of research variables, data description, stationarity test, variable ordering, lag length determination, SVAR model formation, model stability test, Impulse Response Function and Variance Decomposition. The data used is quarterly time series data during the period 2005:1 - 2021:4. The selection of this period is based on the consideration that during this period the Inflation Targeting Framework (ITF) policy was implemented by Bank Indonesia.

Stationarity Test

Data stationarity test with unit root test using unit root test with Augmented Dickey-Fuller (ADF) test with the following test results:

Augmented Dickey-Fuller unit root test

Variabel	ADF test stat	1% level	5% level	p-value
A t level I(0)				
SBA	(2.757)	(3.533)	(2.906)	0.438
CIF	(3.242)	(3.533)	(2.906)	0.021
CB	(1.677)	(3.531)	(2.905)	0.436
PUAB	(2.583)	(3.534)	(2.906)	0.116
CADEV	(1.433)	(3.531)	(2.905)	0.560
KDT	(3.713)	(3.546)	(2.911)	0.006
GDP	(2.891)	(3.542)	(2.910)	0.042
JUB	(2.535)	(3.538)	(2.908)	0.112
NPL	(4.253)	(3.540)	(2.909)	0.001
INF	(4.793)	(3.544)	(2.910)	0.000
NT	(4.171)	(3.533)	(2.906)	0.001

Notes: * critical value at 1 per cent level of significance

** critical value at 5 per cent level of significance

Variabel	ADF test stat	1% level	5% level	p-value
1'st difference I(1)				
SBA	(4.548)	(3.533)	(2.906)	0.000
CIF	(9.829)	(3.533)	(2.906)	0.000
CB	(7.548)	(3.531)	(2.905)	0.000
PUAB	(15.743)	(3.534)	(2.906)	0.000
CADEV	(7.013)	(3.531)	(2.905)	0.000
KDT	(5.379)	(3.546)	(2.911)	0.000
GDP	(4.048)	(3.542)	(2.910)	0.002
JUB	(2.914)	(3.538)	(2.908)	0.049
NPL	(3.487)	(3.540)	(2.909)	0.011
INF	(6.629)	(3.544)	(2.910)	0.000
NT	(9.985)	(3.533)	(2.906)	0.000

Notes: * critical value at 1 per cent level of significance

** critical value at 5 per cent level of significance

The results of the unit root test with the ADF-test show that the stationarity condition of the data is partly stationary at the level and partly stationary at first difference. Variables whose data are stationary at I(0) level and significant at 5% are CIF, KDT, GDP, NPL, INF and NT while other variables are stationary at 1'st difference or I(1).

Determination of Optimum Lag Length

Based on the lag optimum test lag order selection criteria, the transmission path of foreign capital flow policy, monetary policy and macroprudential has a significant 3rd quarter lag optimum on the LR (Likelihood Ratio), FPE (Final Prediction Error), AIC (Akaike Information Criterion), and (HQ) Hannan-Quinn Information Criterion criteria.

Lag	LR	FPE	AIC	SC	HQ
0	NA	0.012108	26.80274	27.17071	26.94793
1	954.1283	7.98E-09	12.52339	16.93907*	14.26566
2	176.1866	6.75E-09	12.05155	20.51494	15.3909
3	200.7704*	1.07e-09*	9.298166*	21.80926	14.23459*

Notes: * Significance level (5 per cent); LR = sequential modified LR test statistic; FPE = final prediction error; AIC = Akaike information criterion; SIC = Schwarz information criterion; HQ = Hannan-Quinn information criterion

Cointegration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Tracen statistic	0.05 critical value	Prob.**
None *	0.958	826.662	285.143	0.000
At most 1 *	0.922	624.443	239.235	0.000
At most 2 *	0.864	461.471	197.371	0.000
At most 3 *	0.717	334.006	159.530	0.000
At most 4 *	0.692	253.254	125.615	0.000
At most 5 *	0.579	177.842	95.754	0.000
At most 6 *	0.512	122.548	69.819	0.000
At most 7 *	0.404	76.597	47.856	0.000
At most 8 *	0.328	43.509	29.797	0.001
At most 9 *	0.204	18.074	15.495	0.020
At most 10	0.053	3.512	3.841	0.061

Trace test indicates 10 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The results of the cointegration test show that there are a number of equations that are cointegrated, so long-term estimation can be done.

Stability Test

Stability test

Roots of Characteristic Polynomial

Lag specification: 1 3

Root	Modulus
0.996	0.996
0.699571+ 0.636482i	0.946
0.699571- 0.636482i	0.946
0.892311- 0.160404i	0.907
0.892311+ 0.160404i	0.907
-0.159367 + 0.379011i	0.411
-0.240	0.240

No root lies outside the unit circle.
VAR satisfies the stability condition.

The results of testing the stability of the SVAR model by calculating the roots of the characteristic polynomial function are smaller than one. Thus the SVAR model meets the stability value, so the Impulse

Response Function and Variance Decomposition produced are considered valid.

Monetary and Macroprudential Policy Integration under the influence of Foreign Capital Flows.

The interest rate channel (Keynesian) is more effective than the quantity channel in influencing inflation in the period after ITF implementation and the capital channel is one of the effective channels in macroprudential policy in influencing the exchange rate. Therefore, the policy integration analysis conducted is an integration of the interest rate channel (monetary policy) and the capital channel (macroprudential policy) under the influence of foreign capital flows.

SVAR estimation results on the transmission of monetary and macroprudential policy integration under the influence of foreign capital flows on price stability and financial stability take place in a time lag of 3 quarters and meet the criteria of LR, FPE, AIC and HQ, the stability value is smaller than 1 and the log likelihood value is quite small at -22.68. This data shows that the integration path of monetary policy transmission, macroprudential and capital flows is effective in maintaining financial stability.

Structure Vector Auto Regression (S-VAR) Test

Results Structure Impulse Response Function

Impulse Response Analysis of exchange rate is conducted to determine the response of inflation when there is a shock of one standard deviation on other variables.

Figure 1. IRF of Inflation

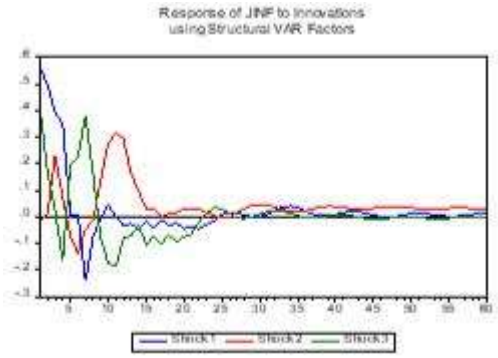
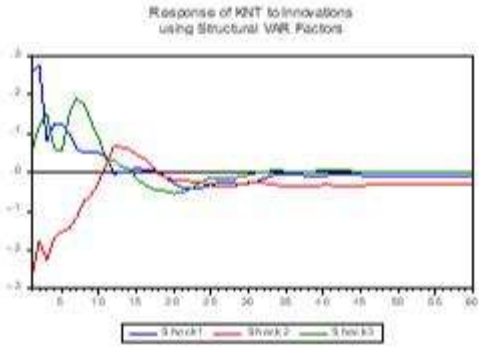


Figure 2. IRF of Exchange Rate



From the graphical visualization of IRF, it can be seen that all variables lead to convergence in the long run. From the figure, we can see the strong response of Inflation and Exchange Rate response if there is a shock to the benchmark interest rate, capital flow and capital cushion each by one standard deviation. The direction of the response changes for a certain period, but the response gets smaller in the long run and eventually approaches zero.

Structure Variance Decomposition

Variance Decomposition serves to see the contribution of the shock from transmitting variables to the shock of certain variables in the current period and the future period.

Table 1. Variance Decomposition of INF

Variance Decomposition of Inflation												
		Shock1	Shock2	Shock3	Shock4	Shock5	Shock6	Shock7	Shock8	Shock9	Shock10	Shock11
Quartal	S.E.	SBA	CIF	CB	CADEV	PUAB	KDT	JUB	GDP	NPL	INF	NT
1	0.95932	16.3215	4.8773	0.4747	23.7367	10.5637	16.2217	2.7365	6.3736	5.9403	12.2265	0.5276
5	1.88089	21.1953	4.1916	12.7466	10.3320	20.0931	11.6498	3.3321	8.8451	3.2242	4.1037	0.2866
20	3.48397	22.8721	8.1981	15.8764	5.8617	19.6315	8.8395	1.4332	8.8665	5.0218	2.7483	0.6510
40	4.10520	22.5516	11.2564	15.4773	4.6700	19.4714	9.1859	2.3539	7.5390	4.3944	2.4549	0.6451
60	4.32071	22.4978	11.5079	15.6428	4.2904	19.7688	9.1491	2.2788	7.4163	4.3910	2.3885	0.6687

In the short-term period (Q-5), the contribution of the benchmark interest rate to the inflation shock is 21.195% and in the long-term (Q-60) increased to 22.497%. The contribution of interbank money market to inflation shock is 20.093% and in the long run (Q-60) is 19.768%. The contribution of capital buffer in the short term (Q-5) to inflation shock is 12.746% and in the long term (Q-60) is 15.642%. While the contribution of capital inflows to inflation in the short term (Q-5) is to 4.191% and in the long term (Q-60) increased considerably to 11.507%.

The variance decomposition results above show that the benchmark interest rate, interbank money market, capital buffer and foreign capital flows are the main variables that are dominant in determining

the variation of inflation. The results above show that monetary policy with the benchmark interest rate, which is transmitted through money market interest rates, is dominant in influencing shocks to price stability (inflation). While foreign exchange reserves, which is one indicator reflecting financial strength, only contributes 4.290% to give shocks to price stability (inflation).

Table 2. Variance Decomposition of NT

Variance Decomposition of NT:												
		Shock1	Shock2	Shock3	Shock4	Shock5	Shock6	Shock7	Shock8	Shock9	Shock10	Shock11
Quartal	S.E.	SBA	CIF	CB	CADEV	PUAB	KDT	JUB	GDP	NPL	INF	NT
1	0.65758	1.7011	45.4159	11.9653	0.4859	10.3297	7.8444	5.7630	10.2572	0.5454	3.8500	1.8421
5	1.09657	7.9279	40.4020	9.7509	2.4870	23.5796	5.0682	2.8684	4.1976	1.1800	1.5137	1.0246
20	1.73698	21.7843	24.4426	15.9216	2.0717	18.6406	6.5299	1.9608	3.2623	3.0850	1.1948	1.1063
40	1.90971	22.4713	23.7053	15.7115	1.9180	18.2391	6.9182	2.2871	3.2081	3.2670	1.1576	1.1168
60	1.96736	22.7839	23.1938	15.6828	1.8471	18.3438	6.9986	2.2225	3.2729	3.3396	1.1620	1.1530

In the short-term period (Q-5), the contribution of capital inflows to the exchange rate shock in the short term (Q-5) amounted to 40.402% and in the long term (Q-60) amounted to 23.193%. The contribution of the benchmark interest rate to the exchange rate shock in the short term (Q-5) amounted to 7.927% and in the long term (Q-60) amounted to 22.783%. The contribution of interbank money market in the short term (Q-5) is 23.579% and in the long term (Q-60) is 18.343%.

The contribution of capital buffer in the short term (Q-5) to the exchange rate shock is 9.750% and in the long term (Q-60) is 15.682%. The four variables, capital inflows, benchmark interest rates, interbank money market and capital buffer contribute 80.001% in influencing the variation of exchange rates. The small contribution of foreign exchange reserves to the exchange rate shock is due to its role which is more focused on maintaining capital inflows and capital outflows when an intervention policy is carried out on forex in maintaining exchange rate stability.

The variance decomposition also shows that capital inflows affect the exchange rate and credit growth. Foreign capital flows between countries affect not only exchange rates and other financial asset prices, but also have an impact on liquidity conditions and credit growth. This finding is in line with Levine (1997).

Table 3. Variance Decomposition of CADEV

Variance Decomposition of CADEV:												
		Shock1	Shock2	Shock3	Shock4	Shock5	Shock6	Shock7	Shock8	Shock9	Shock10	Shock11
Quartal	S.E.	SBA	CIF	CB	CADEV	PUAB	KDT	JUB	GDP	NPL	INF	NT
1	0.02652	5.6251	71.3510	5.7807	0.8548	8.4221	1.0562	4.5347	0.3502	0.6086	1.3319	0.0847
5	0.06419	8.4499	72.0655	5.1142	2.0008	7.2520	0.8190	1.7701	1.6025	0.3510	0.5304	0.0448
20	0.08680	16.6603	54.9561	8.1626	2.0720	9.3131	4.2123	1.2938	1.4985	1.0372	0.5485	0.2456
40	0.08896	16.4205	53.5028	9.0612	2.0718	9.4653	4.6818	1.4270	1.5371	1.0343	0.5546	0.2438
60	0.08938	16.6361	53.1201	9.0794	2.0798	9.5389	4.7385	1.4312	1.5444	1.0325	0.5565	0.2426

Variance Decomposition shows that foreign capital flows make a dominant contribution to foreign exchange reserves (53.12%). This fact shows that shocks to foreign exchange reserves are strongly influenced by fluctuations in foreign capital flows of more than 50%. With this broad and large influence, it indicates that shocks to foreign exchange reserves are directly influenced by foreign capital flows in financing balance of payments imbalances as an effort to maintain financial stability in Indonesia. One way to increase the position of foreign exchange reserves is by increasing interest rates, because the relationship between interest rates and foreign exchange reserves is positive.

The effect capital inflow, capital buffer and interest rate in controlling price stability and financial stability in the period after ITF is summarized as follows:

Table 4. The effect of CIF, Capital Buffer and Interest rate to inflation and exchange rate

Variabel	Short Time (Q-5)		Long Time (Q-60)	
	Inflation	Exc. Rate	Inflation	Exc. Rate
Capital Inflow	4,19	40,40	11,50	23,19
Capital Buffer	11,64	9,75	15,64	15,68
Interest rate	21,19	7,92	22,49	22,78

From the table, it can be seen that the benchmark interest rate and capital cushion are complementary in controlling price stability and financial stability. This can be seen from the balanced amount provided by the benchmark interest rate and capital buffer to inflation and exchange rate. The benchmark interest rate contributed 22.49% in influencing inflation and 22.78% in supporting financial stability. While the capital cushion instrument contributes 15.64% to support price stability and 15.68% to financial stability.

Conclusion

Shocks to foreign exchange reserves, inflation, exchange rates are predominantly affected by capital inflows, but interest rates contribute the most in influencing capital inflows in the integration of monetary and macroprudential policies in Indonesia.

Free foreign exchange flows, independent monetary policy with a floating exchange rate system is the Trinity Impossible option that supports the realization of financial stability. The results of this study show that the shock of foreign capital flows contributes greatly to changes in the exchange rate in Indonesia, where the shock of foreign capital flows is absorbed by changes in the exchange rate itself, so that monetary policy concentrates more on controlling price stability. The Impossible Trinity which is the core of the monetary policy framework, where one of the options used is the free foreign exchange system, it is expected that monetary policy will be more independent in controlling inflation, without the need to be too active in controlling the exchange rate.

The benchmark interest rate and capital cushion support each other complementarily in controlling price stability and financial stability, and are not substitutes. The benchmark interest rate contributes 22.49% in influencing inflation and 22.78% in supporting financial stability. Meanwhile, the capital cushion instrument contributes 15.64% to support price stability and 15.68% to financial stability. The balanced contribution of the two instruments, both to price stability and to financial stability, indicates a complementary situation.

Success in maintaining monetary stability without being followed by financial system stability, will not mean much in supporting sustainable economic growth.

Monetary policy has a significant impact on financial stability and vice versa, financial stability is the pillar underlying the effectiveness of monetary policy.The financial system is one of the transmission channels of monetary policy, so if there is financial system instability, the transmission of monetary policy cannot run normally. Conversely, monetary instability will fundamentally affect financial system stability due to the ineffective functioning of the financial system.

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