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Dynamics of Monetary Freedom, Labour, and FDI in Indonesia: A VECM Analysis

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Abstract

The research outlined here was directed by the Vector Error Correction Model (VECM) in its investigation of the connection between monetary freedom, labor market, and foreign direct investment in Indonesia. Historical time series data have been used in the model and diagnostic tests employed to ensure the validity and reliability of the results. The cointegration test confirms the cointegration of all variables which reflects the presence of linkages both in the short run and long run. This research contributes to the understanding of monetary freedom, labor market dynamics, and foreign direct investment in Indonesia through a better comprehension of their economic interrelationships.

Keywords: VECM, Monetary Freedom, FDI, Labor, Indonesia

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INTRODUCTION

Monetary freedom is one of the key pillars of an economy (Vinayagathasan, 2013); (Kareem, et al., 2013). In economies with a higher level of monetary freedom, individuals and businesses can use any legal currency for their transaction, have the right to open foreign bank accounts, and are able to exchange currencies with little to no government supervision or intervention. Also, everyday use of digital currency is readily accepted. On the other hand, in countries with little monetary freedom, the government may prohibit the use of foreign currencies, restrict the amount of cash and/or negotiable

instruments a person can own or exchange, and impose stringent regulations concerning foreign exchange transactions. Such measures can restrict the ability of individuals and businesses to partake in cross-border transactions and are economically detrimental. The influence of economic freedom on economic growth has been studied in the OECD and it has been determined that monetary freedom, in conjunction with the freedom to do business, invest, act in the labor market, and the fiscal realm, attain property rights, absence of corruption, and other factors is positively correlated with economic growth (Cebula, 2011).

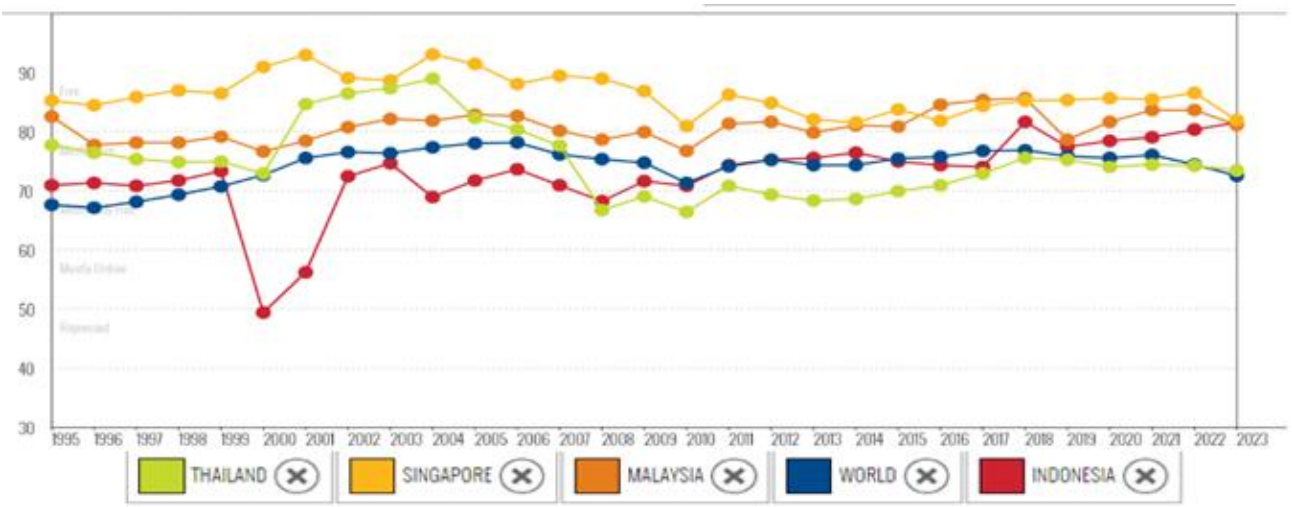

Figure 1. Monetary Freedom Index of ASEAN-5 Countries (1995-2023)
Source: The Heritage Foundation (2023)

Overall, monetary freedom contributes to spending, investing, and ultimately innovation and economic growth, both for businesses and the public. In the graph is figure 1, we see Indonesia's monetary freedom index is in the fairly free section, and for the past few years, it has been over the world average. The freedom tied to the access and movment of capital and resources helps encourage trade and investement in the economy.

The same is the freedom to adopt new technologies in a competitive financial system. Conversely, a poorly supervised monetary freedom could increase inflation and debt, and hence the need to strike a balance with necessary rules to prevent financial crimes like moneylaundering and financing of terrorism. Striking a balance between monetary freedom and essential regulations is vital for maintaining financial stability and economic growth. Studies related to monetary freedom as a supporter of economic growth in Indonesia become crucial to conduct.

Found a positive relationship between economic freedom and economic growth (Hayrdaroglu, 2016). On the other hand, De Haan (2000) and Carlsson (2002) investigated the relationship between various components of freedom and growth and observed that some are associated with growth while others are not. Monetarists argue that monetary policies are more efficient than fiscal policies (Özer et.al., 2018). In Kindleberger (2013), controlling the money supply should be the primary goal of

economic policy, and government intervention in economic activities should be avoided.

Özer (2018) found that monetary policy variables create short-term effects, while fiscal policy variables have significant long-term effects and contribute to growth. Monetary policies affecting economic growth, both short and long term, were also found by (Ali et.al., 2008) (Fasanya et.al., 2013), (Coibion, 2012), and (Chaudhry et.al., 2012).

Therefore, plentiful, skilled, and highly efficient workforce can elevate production and productivity levels, consequently fostering investment and economic expansion (Korkmaz et.al., 2017); (Wijaya et.al., 2021). The impact of Foreign Direct Investment (FDI) can be felt throughout an entire nation's economy. Economic expansion can be greatly enhanced by the combination of financial liberalization and the influx of investments.

Also important to the achievement of FDI is the presence of a skilled and highly productive workforce. Inactivity of a workforce is highly valued by foreign investors as it is the determinant of significant monetary returns. Consequently, the integration of FDI, financial liberalization and workforce determines the economic advancement and competitiveness of a nation. This research seeks to examine the specific relationship among FDI, monetary liberalization and the workforce in Indonesia, as well as its economic implications.

Monetary policy involves government actions concerning the money supply, interest rate determination, and stabilization of exchange rates, fostering specific economic outcomes, including, but not limited to, price stability, inflation control, and remedying an economic recession. Several studies have sought to understand the relevance of outcomes from the above policy to the economy of a country (Brunner et.al., 1972). On the contrary, monetary freedom is when individuals and/or institutions have the latitude to elect to use a certain currency or engage in financial and remittance transactions across borders, without high government control/restrictions.

In reality, a government's monetary policy may/may not improve the monetary freedom of a society. Should the government impose high control or limitations to individuals and/or institutions concerning the types of currencies and financial transactions they are allowed to use, such a country will have lower levels of monetary freedom.

On the other hand, a country may have high levels of monetary freedom, as a result of sound monetary policy, and in so doing improve the social financial security of its citizens and economic stability of the country, while expanding the ability of the country's institutions to engage in economic sphere. The dominant policy focuses may change over time within a country, or between countries (Özer et.al., 2018).

Monetary policy has an impact on economic growth, both in the short and long term, suggesting that developing countries should implement intensive financial development measures (Twinoburyo et.al., 2018). Economic freedom (EF) in BRICS countries was analysed using panel regression methods, covering variables such as governance freedom, property rights, monetary freedom, trade freedom, business freedom, and infrastructure (Hayrdaroglu, 2016).

Singh (2020) examined economic freedom and its relationship with foreign direct investment. Furthermore, Twinoburyo (2018) confirmed that in countries with relatively

developed financial markets and independent central banks, monetary policy is considered effective in supporting economic growth. However, in developing countries with immature financial markets that are structurally weak and less integrated into global markets, this relationship tends to be weaker.

Changes in monetary policy will affect investment through interest rates and monetary expectations. Monetarists argue that monetary policy is more efficient than fiscal policy (Özer et.al., 2018). Kindleberger (2013) states that controlling the money supply should be the primary goal of economic policy, and government intervention in economic activity should be avoided.

Özer (2018) found that monetary policy variables create short-term effects, while fiscal policy variables have significant long-term effects and contribute to growth. Monetary policy affecting economic growth, both in the short and long term, was also found by (Ali et.al., 2008) (Fasanya et.al., 2013), (Coibion, 2012), and (Chaudhry et.al., 2012). To maintain economic conditions, monetary authorities must act aggressively against inflation (Asafu-Adjaye, 2000).

There is a reciprocal relationship between labor and investment. Studies cover aspects such as labor size, productive age, labor quality, and human capital (Kuznets, 1963); (Gallman et.al., 2007); (Topel, 1999); (Hanushek et.al., 1995); (Pissarides et.al., 2006); (Mubarak et.al., 2020). An increase in the size, skill and productivity of the labor force results in a rise in production and increased productivity, which in turn results in additional investment and economic growth (Korkmaz et.al., 2017); (Wijaya et.al., 2021). Several studies indicate that economic growth can be enhanced through increased labor force participation, improved labor quality, and advocated training of workers, which in turn can lead to enhanced consumption and investment. Improved worker wellbeing also positively impacts economic growth.

RESEARCH METHODS

The methodology of the research employs the Vector Error Correction Model (VECM) to assess the interdependent relationship of the study's focus variables.

Table 1. Data Sources

Variable	Description	Source
Monetary Freedom (MF)	The Monetary Freedom Index assesses the level of economic freedom in a country, considering factors such as price stability and regulations, such as inflation, that affect economic operations. These regulations can influence economic effectiveness.	The Heritage Foundation
Foreign Direct Investment (FDI)	Foreign Direct Investment (FDI) is the net inflow of investment made by foreign entities into the Indonesian economy, measured in US dollars.	World Bank
Labor (LABOR)	Total number of workers in Indonesia, measured in individuals (people)	World Bank

Source: Data processed, 2025

The model employs a history of time series data to arrive at results, and various standard checks to ensure that the results passed the tests of reliability and validity. The study addresses monetary freedom, the labor market, and foreign direct investment in Indonesia in the short and long term. The data sources are indicated in Table 1.

The Monetary Freedom Index compiled by The Heritage Foundation combines measures of price stability and price controls to evaluate the extent to which a country's economy operates freely. This index considers both inflation and price controls, which can disrupt market activity. Ideally, free markets operate with stable prices and minimal intervention.

The VECM approach allows for the analysis of dynamic interactions and cause-and-effect relationships between monetary freedom, labor market trends, and foreign direct investment in Indonesia, considering both long-term and short-term impacts. The model used is as follows:

$$MF_t = \beta 0 + \sum_{i=1}^{j} \Gamma_i \, MF_{t-i} + \sum_{i=1}^{j} \Gamma_i \, FDI_{t-i} + \sum_{i=1}^{j} \Gamma_i \, LABOR_{t-i} + \varepsilon_{1t}$$

$$FDI_t = \beta 0 + \sum_{i=1}^{j} \Gamma_i \, MF_{t-i} + \sum_{i=1}^{j} \Gamma_i \, FDI_{t-i} + \sum_{i=1}^{j} \Gamma_i \, LABOR_{t-i} + \varepsilon_{1t}$$

$$LABOR_t = \beta 0 + \sum_{i=1}^{j} \Gamma_i \, MF_{t-i} + \sum_{i=1}^{j} \Gamma_i \, FDI_{t-i} + \sum_{i=1}^{j} \Gamma_i \, LABOR_{t-i} + \varepsilon_{1t}$$

The index is calculated using two main factors; the average inflation rate over the past three years, with different weights, and an assessment of the level of price controls. The monetary freedom score is then calculated using a formula that involves the weighted average inflation rate and a price control penalty.

This index refers to the following sources to obtain data related to monetary policy, listed in order of priority: International Monetary Fund (IMF), International Financial Statistics Online; World Economic Outlook, Economist Intelligence Unit, ViewsWire, and official publications of each country's government.

RESULTS AND DISCUSSION

Based on Table 2, the ADF test is obtained by comparing the probability values in the MacKinnon table. ADF Test Results test on variables at the level show that three variables have not been stationary.

Table 2. Augmented Dickey-Fuller Unit Root Test

Variables	Level	1st difference	2nd difference
	Prob.	Prob.	Prob.
MF	0.4672	0.0008	0.0008
LABOUR	0.9240	0.0019	0.0002
FDI	0.5717	0.0001	0.0000

Source: Data processed, 2025

This is indicated by a probability value greater than α (5%). Then the ADF test is conducted on the first derivative of the three variables. The results obtained at the first derivative level show that these three variables are stationary.

The VAR lag order selection criteria on table 3 reveal that a majority of asterisks are associated with lags 2 and 5. However, selecting a lag of 5 would introduce additional time considerations. Therefore, the optimal lag chosen is 2. Based on table 4, it is evident that both the trace statistic and max eigenvalue

surpass the critical value. This implies that all variables are cointegrated, indicating a long-term relationship among them.

Table 3. VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-746.0185	NA	1.92e+27	71.33510	71.48431*	71.36748
1	-740.1840	9.446341	2.63e+27	71.63657	72.23344	71.76611
2	-718.6430	28.72128*	8.51e+26*	70.44219	71.48672	70.66888
3	-708.1003	11.04474	8.72e+26	70.29527	71.78744	70.61911
4	-697.5435	8.043305	1.09e+27	70.14700	72.08683	70.56799
5	-678.4931	9.071592	9.41e+26	69.18982*	71.57730	69.70797*

Source: Data processed, 2025

Based on the AR root values in table 5, it is evident that all specifications have values less than one. This indicates that the VAR model we have is stable, validating the interpretations of IRF and VS. Additionally, graphically as in figure 2, if all points lie within the circle, our VAR model is considered stable.

Table 4. Cointegration

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.70199	49.7877	29.7970	0.0001
At most 1 *	0.41490	21.9430	15.4947	0.0046
At most 2 *	0.34168	9.61556	3.84146	0.0019

Source: Data processed, 2025

The Granger causality test in table 6 examines whether there is a causal relationship among the variables. The test results indicate the following causal relationships: (1) FDI has a unidirectional relationship with MF, (2) LABOUR has a unidirectional relationship with MF, (3) LABOUR has a unidirectional relationship with FDI. The Impulse Response Function (IRF) in appendix 1 and graphically in figure 3 shows that from MF to FDI, a shock of one standard deviation in the MF variable causes an increase in the FDI variable which reaches a peak in the second period, then decreased in the third to fifth periods.

Table 5. VAR Stability

Root	Modulus
0.146844 - 0.804709i	0.817997
0.146844 + 0.804709i	0.817997
-0.100466 - 0.671492i	0.678966
-0.100466 + 0.671492i	0.678966
-0.211729 - 0.176825i	0.275856
-0.211729 + 0.176825i	0.275856

Source: Data processed, 2025

However, in the sixth period it experienced an increase and decreased again in the seventh to ninth periods. And then experienced an increase again in the tenth period.

From MF to Labor, a shock of one standard deviation in the MF variable causes an increase in the labor variable in the second period. Then it decreased in the third and fourth periods. In the fifth period it increased until the sixth period. Then it decreased again in the seventh and eighth periods and the ninth and tenth periods experienced an increase again.

From Labor to MF, a shock of one standard deviation in the labor variable causes the monetary freedom variable the highest decline in the first period. Then it experienced the highest increase in the third period and thereafter continued to decline until the tenth period.

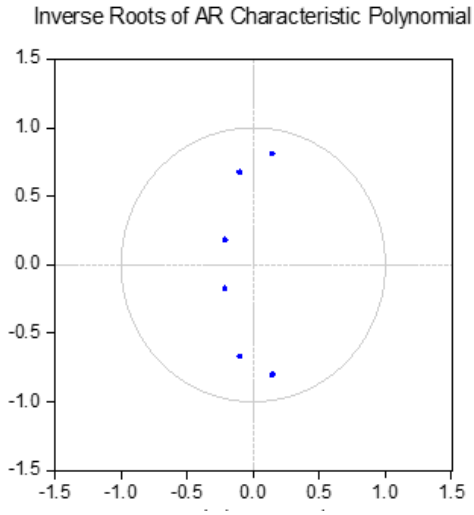

Figure 2. VAR Stability Graph
Source: Data processed, 2025

From Labor to FDI A shock of one standard deviation in the Labor variable causes an increase in the FDI variable in the second and third periods. then decreased and increased again in the sixth and seventh periods. Then it decreased again until the ninth period and increased again in the tenth period. From FDI to MF, a shock of one standard deviation in the FDI variable causes the MF variable to experience the highest increase in the first period, followed by a decrease in the following periods.

From FDI to Labor, a shock of one standard deviation in the FDI variable causes the Labor variable to experience the highest increase in the first period and then decrease in the second period. In the third period and then decreased until the seventh period. The eighth period experienced an increase and in the tenth period it experienced a decrease.

Table 6. Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
FDI does not Granger Cause MF	26	6.59519	0.0060
MF does not Granger Cause FDI		0.10022	0.9051
LABOUR does not Granger Cause MF	25	5.96019	0.0093
MF does not Granger Cause LABOUR		1.57599	0.2314
LABOUR does not Granger Cause FDI	25	3.56561	0.0474
FDI does not Granger Cause LABOUR		0.11529	0.8917

Source: Data processed, 2025

Based on appendix 2 and graphically in Figure 4, the Cholesky One Standard Deviation Innovation analysis shows a dynamic response between variables. When there is a shock to the Monetary Freedom (MF) variable, this triggers significant fluctuations in Foreign Direct Investment (FDI) and Employment.

The variable that has a major impact is the MF variable itself. FDI experiences an initial increase followed by subsequent fluctuations. Meanwhile, employment experiences a decline at the beginning and then increases.

Similarly, when employment experiences a shock, the impact is significant on itself and is followed by other variables that continue to fluctuate. The same applies to the FDI variable. Regarding whether there is a shock to FDI, its most influencing factor is itself and the other variables (MF and Employment), thereby cause volatility across periods. This overall analysis draws attention to the intricate relationships

and dependencies between these core economic variables.

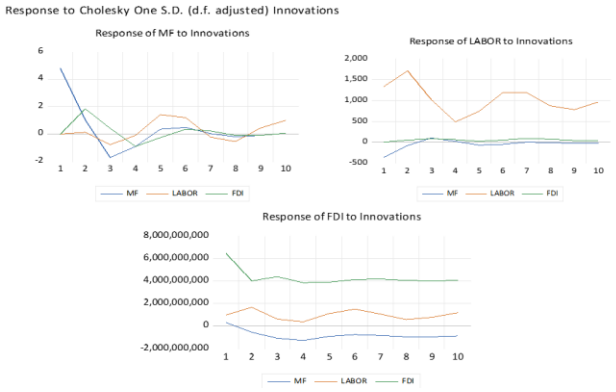

Figure 3. Impulse Response Combined Graph
Source: Data processed, 2025

Monetary freedom is also influenced by the foreign direct investments (FDI). A one standard deviation shock in the FDI variable leads to the largest increase of the monetary freedom (MF) variable in period 1 that after begins to decrease. The degree of monetary freedom represented by stability indicates that FDI is closely related with the level of monetary freedom.

This is consistent with research Indrawati (2012) indicating FDI has a positive effect towards the price stability, especially for controlling inflation, which would be reduced as foreign capital inflow in Indonesia. This is because most foreign capital in the form of FDI does not primarily focus on exports, as Indonesia is not yet fully integrated into the global economic supply chain.

However, there are risks associated with short-term foreign capital, such as portfolio investment, which is vulnerable to negative sentiment, potentially triggering large and sudden capital outflows (referred to as "large and sudden reversal of capital"). This has the potential to put pressure on macroeconomic stability and increase the complexity of monetary policy.

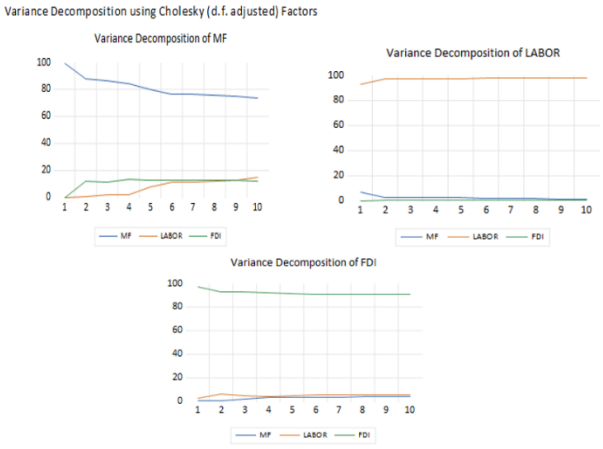

Figure 4. Variance Decomposition Combined Graph
Source: Data processed, 2025

Foreign direct investment does not have a significant effect on labor. This finding is in line with research conducted by Zamzami et.al., (2015) which states that the FDI variable has a positive but not significant effect on the labor variable in the manufacturing sector.

This shows that the positive direction of the influence shows that the FDI variable can increase the number of labor in the manufacturing sector, however, is not significant and this is the focus of attention, especially by the government, so that foreign investment in the form of FDI is used more effectively and contributes to the manufacturing sector in helping to increase employment opportunities and increase the productivity of workers in this sector so that there is an opportunity to earn more income.

Benefits can be obtained, and this can create interest in working in the manufacturing sector so that the number of workers is expected to increase every year. According to Shin et.al., (2019), labor density leads to the threat of

company profits if the FDI variable is included excessively; there needs to be an adjustment in institutional functions and labor benefits to achieve maximum profit for the company, where the generated profit may be greater than the injected investment.

Monetary Freedom does not have a significant effect on Foreign Direct Investment. When shock of one standard deviation in the MF variable causes an increase in the FDI variable which reaches a peak in the second period, then decreased in the third to fifth periods.

However, in the sixth period it experienced an increase and decreased again in the seventh to ninth periods. And then experienced an increase again in the tenth period. The influence of Monetary Freedom on FDI is represented by the interest rate value.

Based on the validity testing results, it was found that the interest rate does not have a significant impact on foreign direct investment (FDI). This finding aligns with previous research conducted by Madura et.al., (2011), which also shows that the interest rate does not have a significant influence on foreign direct investment (FDI).

Monetary Freedom does not have a significant effect on Foreign Direct Investment. A shock of one standard deviation in the MF variable causes an increase in the labor variable in the second period. Then it decreased in the third and fourth periods. In the fifth period it increased until the sixth period. Then it decreased again in the seventh and eighth periods and the ninth and tenth periods experienced an increase again.

Economic openness has an impact on labor absorption in Indonesia. Economic openness is characterized by a well-functioning economy. Domestic economic stability encompasses both producer and consumer price levels. On the other hand, stability in the external sector includes stability in a country's exchange rate against the currencies of its trading partners or more broadly, stability in the context of the global exchange rate.

The exchange rate is a crucial policy variable as it affects trade flows, capital flows, foreign direct investment, inflation rates, international reserves, and a country's economic transactions. Research by Komariyah et.al. (2019), indicates that economic openness, including exports, and foreign direct investment, has a positive and significant influence on labor absorption. Empirical evidence from Burya et.al., (2022) shows that labor market strength amplifies the impact of monetary policy on labor demand, but does not disproportionately affect wage growth.

Labor has a significant effect on foreign direct investment. Foreign direct investment is crucial for a country as it can stimulate the creation of new jobs, enhance technology transfer, and aid in industrial development (Zeb et.al., 2013).

The Indonesia Investment Coordinating Board (BKPM) states that Indonesia has the fourth largest population in the world with a significant labor force, making it an attractive destination for investment. When a shock of one standard deviation in the Labor variable causes an increase in the FDI variable in the second and third periods. then decreased and increased again in the sixth and seventh periods.

Then it decreased again until the ninth period and increased again in the tenth period. This research is in line with research by Baskoro et.al., (2019) labor productivity has a positive impact on foreign direct investment (FDI). Research by Meidayati (2017) indicates that the

labor force influences the inflow of FDI. Labor has a significant effect on monetary freedom. A shock of one standard deviation in the labor variable causes the monetary freedom variable the highest decline in the first period. Then it experienced the highest increase in the third period and thereafter continued to decline until the tenth period.

Based on research by Bergman et.al. (2020), they assert that the tightness of the labor market and the impact of monetary policy on workers with low labor force attachment are significant. They argue that recent shifts in Federal Reserve monetary policy, from strict inflation targeting to average targeting, will overtime increase labor market activity among demographic groups with historically lower employment rates. Equation results are presented in appendix 3.

CONCLUSION

Through this analysis, the complicated and dynamic interactions among Monetary Freedom (MF), Foreign Direct Investment (FDI), and Labor are brought to light. A change in one of these factors leads to a notable reaction in the others, revealing the strong interdependence of the whole system.

To be more specific, MF is the main factor that affects FDI and Labor the most, while the shocks in MF cause different types of responses for the two. The same is true for the FDI and Labor variables that also exert their influence on MF, thus shocks on both lead to large-scale oscillations.

These results point to the fact that economic policies must take into account the interrelationships of these variables. Moreover, the present research brings out the necessity to deal with the shocks and their effects, with regard to economic stability and growth. The economic analysis as a whole has been enriched with the understanding of the intricate relationships between economic factors and their interdependencies.

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APPENDIX

Appendix 1. Impulse Response

Response of MF:			
Period	**MF**	**LABOUR**	**FDI**
1	4.787500	0.000000	0.000000
2	1.018691	0.110616	1.823354
3	-1.722497	-0.796382	0.403006
4	-0.907899	-0.110749	-0.904118
5	0.354462	1.406857	-0.253443
6	0.470568	1.193496	0.360913
7	0.020595	-0.234771	0.212370
8	-0.209070	-0.546096	-0.114592
9	-0.092592	0.437401	-0.112212
10	0.062802	0.996602	0.069788
Response of LABOUR:			
Period	**MF**	**LABOUR**	**FDI**
1	-359.2027	1340.051	0.000000
2	-76.75953	1712.654	54.40998
3	104.7927	1021.047	79.54356
4	22.05382	488.3404	65.35379
5	-66.72416	744.9041	19.73846
6	-44.72416	1194.348	51.50210
7	-3.412118	1181.124	89.00337
8	-8.617982	873.3450	69.87483
9	-31.39016	780.3842	36.58118
10	-31.39566	858.5660	41.80639
Response of FDI:			
Period	**MF**	**LABOUR**	**FDI**
1	3.04E+08	9.84E+08	6.44E+09
2	-5.76E+08	1.66E+09	4.00E+09
3	-1.10E+09	5.98E+08	4.36E+09
4	-1.28E+09	3.68E+08	3.85E+09
5	-9.09E+08	1.08E+09	3.90E+09
6	-7.51E+08	1.50E+09	4.14E+09
7	-8.43E+08	1.04E+09	4.19E+09
8	-9.52E+08	5.90E+08	4.06E+09
9	-9.53E+08	7.86E+08	4.01E+09
10	-8.98E+08	1.18E+09	4.07E+09

Source: Data processed, 2025

Appendix 2. Variance Decomposition

Variance Decomposition of MF:				
Period	**S.E**	**MF**	**LABOUR**	**FDI**
1	4.78750	100.000	0.0000	0.0000
2	5.22443	87.7747	0.04482	12.1804
3	5.57300	86.6912	2.08143	11.2273
4	5.71947	84.8277	2.01369	13.1585
5	5.90605	79.9129	7.56267	12.5244
6	6.05455	76.6450	11.0820	12.2729
7	6.06285	76.4363	11.2016	12.3620
8	6.09207	75.8228	11.8980	12.2791
9	6.10948	75.4142	12.3428	12.2429
10	6.19094	73.4529	14.6115	11.9355
Variance Decomposition of LABOUR:				
Period	**S.E**	**MF**	**LABOUR**	**FDI**
1	1387.35	6.70350	93.2965	0.0000
2	2206.08	2.77222	97.1669	0.06082
3	2434.47	2.46176	97.3815	0.15671
4	2483.82	2.37259	97.4076	0.21975
5	2594.15	2.24153	97.5512	0.20726
6	2856.69	1.87295	97.9236	0.20342
7	3092.53	1.59831	98.1452	0.25641
8	3214.25	1.48026	98.2351	0.28461
9	3307.98	1.40657	98.3124	0.28094
10	3444.46	1.30562	98.4205	0.27385
Variance Decomposition of D(LABOUR):				
Period	**S.E**	**MF**	**LABOUR**	**FDI**
1	6.52E+09	0.21706	2.27962	97.5032
2	7.85E+09	0.68809	6.05031	93.2615
3	9.07E+09	1.99377	4.97130	93.0349
4	9.94E+09	3.32835	4.27173	92.3999
5	1.08E+10	3.54695	4.65202	91.8010
6	1.17E+10	3.44126	5.62927	90.9294
7	1.25E+10	3.470339	5.63097	90.8986
8	1.32E+10	3.63890	5.25535	91.1057
9	1.38E+10	3.77994	5.09450	91.1255
10	1.45E+10	3.82695	5.29874	90.8743

Source: Data processed, 2025

Appendix 3. Result Equation

D(LABOUR,2) = - 0.0541940993715*(D(LABOR(-1)) + 8.51340968289e-07*D(FDI(-1)) - 80.3858771269*D(MF(-1)) - 2008.93748512) - 0.537051028954*D(LABOUR(-1),2) - 0.593566506021*D(LABOR(-2),2) + 4.02433929084e-08*D(FDI(-1),2) + 2.10450768815e-08*D(FDI(-2),2) + 23.4263687796*D(MF(-1),2) + 45.4943212911*D(MF(-2),2) - 60.8928601828

D(FDI,2) = - 2261257.02297*(D(LABOUR(-1)) + 8.51340968289e-07*D(FDI(-1)) - 80.3858771269*D(MF(-1)) - 2008.93748512) + 1540676.46453*D(LABOR(-1),2) + 412937.363002*D(LABOR(-2),2) + 0.390678184628*D(FDI(-1),2) + 0.143788396844*D(FDI(-2),2) - 193648445.407*D(MF(-1),2) - 164961891.207*D(MF(-2),2) - 422247656.027

D(MF,2) = - 5.45530241594e-06*(D(LABOR(-1)) + 8.51340968289e-07*D(FDI(-1)) - 80.3858771269*D(MF(-1)) - 2008.93748512) - 0.000842223700512*D(LABOR(-1),2) - 0.000981480132292*D(LABOR(-2),2) + 7.57354435454e-11*D(FDI(-1),2) + 6.2405217516e-11*D(FDI(-2),2) - 0.678975897768*D(MF(-1),2) - 0.492472921056*D(MF(-2),2) - 0.108247621402