

The Impact of Emissions, International Trade and Monetary Policy on Public Welfare in Indonesia

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ABSTRACT

This paper examines the impact of emissions, international trade, and monetary stabilization policies on the welfare of the Indonesian population. This study uses a structural vector autoregression (SVAR) model, with data from 1986-2018 sourced from the World Bank. The environmental impact is measured by CO₂ emissions, while international trade is represented by exports and imports. The monetary transmission policy path is defined by the path of domestic real interest rates and US real interest rates. The model is then solved by applying forecasting error variance decomposition to investigate the contribution of each variable to welfare, as measured by GDP per capita. The results demonstrate that inflation control is of paramount importance, as it has the largest contribution among other variables. With regard to monetary policy, domestic real interest rates exert a greater influence than US real interest rates. The real sector is predominantly shaped by domestic investment, which consequently has a more pronounced impact on people's welfare. International trade policy tends to prioritize the facilitation of export policies over the promotion of import policies. This is because exports tend to provide greater economic benefits to the community, as well as contributing to the stability of exchange rates. This is achieved through the implementation of policies that have been adopted in the present era, namely floating exchange rates. The environmental impact of CO₂ emissions has a detrimental effect on society, necessitating increased expenditure to mitigate the consequences of pollution. To curtail the emission of pollutants, it's imperative that the government fosters the adoption of eco-friendly technology by corporations, thereby reducing the overall level of emissions and pollution.

Keyword: Emissions, International Trade, Monetary Policy, Welfare, GDP Per Capita

Penelitian ini mengkaji dampak emisi, perdagangan internasional, dan kebijakan stabilisasi moneter terhadap kesejahteraan masyarakat Indonesia. Studi ini menggunakan model A Structural Vector Autoregression Regression (SVAR) dengan data periode 1986–2018 yang bersumber dari Bank Dunia. Dampak lingkungan diukur melalui emisi CO₂, sedangkan perdagangan internasional diwakili oleh ekspor dan impor. Jalur transmisi kebijakan moneter ditentukan oleh pergerakan suku bunga riil domestik dan suku bunga riil AS. Model tersebut kemudian diselesaikan dengan menerapkan dekomposisi varians kesalahan peramalan untuk menyelidiki kontribusi masing-masing variabel terhadap kesejahteraan, sebagaimana diukur oleh PDB per kapita. Hasilnya menunjukkan bahwa pengendalian inflasi sangatlah penting, karena memiliki kontribusi terbesar di antara variabel-variabel lainnya. Berkaitan dengan kebijakan moneter, suku bunga riil domestik memberikan pengaruh yang lebih besar daripada suku bunga riil AS. Sektor riil sebagian besar dibentuk oleh investasi domestik, yang akibatnya memiliki dampak yang lebih nyata terhadap kesejahteraan masyarakat. Kebijakan perdagangan internasional cenderung memprioritaskan fasilitasi kebijakan ekspor daripada promosi kebijakan impor. Hal ini karena ekspor cenderung memberikan manfaat ekonomi yang lebih besar bagi masyarakat, serta berkontribusi pada stabilitas nilai tukar. Hal ini dicapai melalui implementasi kebijakan yang telah diadopsi pada era saat ini, yaitu nilai tukar mengambang. Dampak lingkungan dari emisi CO₂ memiliki efek merugikan bagi masyarakat, sehingga memerlukan peningkatan pengeluaran untuk memitigasi konsekuensi polusi. Untuk menekan emisi polutan, pemerintah harus mendorong adopsi teknologi ramah lingkungan oleh perusahaan, sehingga mengurangi tingkat emisi dan polusi secara keseluruhan.

Kata kunci: Emisi, Perdagangan Internasional, Kebijakan Moneter, Kesejahteraan, PDB Per Kapita

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INTRODUCTION

Public welfare is one of the primary goals of macroeconomic development, particularly in developing countries such as Indonesia. In macroeconomic literature, welfare is generally measured by per capita income, as this figure reflects the public's economic capacity to access goods, services, employment opportunities, education, and healthcare facilities. According to the report by Stiglitz et al. (2009), well-being should not be interpreted solely as aggregate economic growth, but also as the economic system's capacity to improve quality of life and social well-being. However, in developing countries, efforts to enhance well-being increasingly face challenges such as environmental degradation, global trade integration, inflationary pressures, and international monetary instability. These issues create multidimensional relationships between environmental sustainability, macroeconomic policy, and social welfare that require more comprehensive empirical investigation.

The accelerated pace of economic growth and expansion enables all nations to adapt to the consequences of globalization. One form of state can address the unstable economy; thus, it is imperative that every government adopt an open economic system. This is because the technology utilized in the production of goods and services is becoming increasingly sophisticated, and it is provided by the state. As a developing country, Indonesia would be well advised to follow the example of China, which underwent a significant transformation in its economic system as a result of rapid technological advancement. China, which was once a closed country, began to engage in international trade but maintained governmental control over this sector. International trade allows Indonesia to adopt technology and knowledge from developed countries, thereby advancing technology and knowledge in the production of domestic goods and services. This, in turn, will have an impact on the welfare of its people. The following data shows the development of Indonesia's GDP per capita, which reflects the welfare of the people:

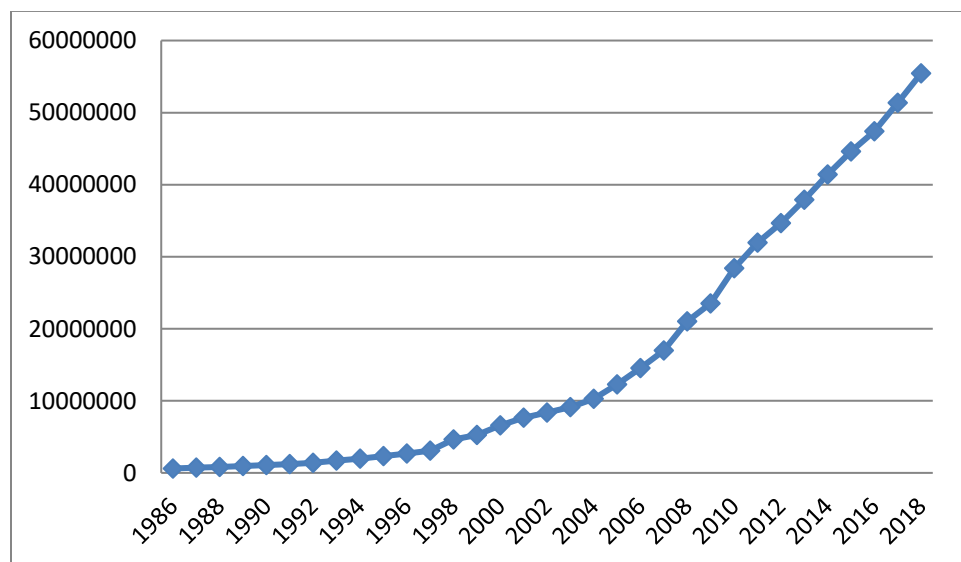


Figure 1. Development of Indonesia's GDP Per Capita from 1986 to 2018

Source: World bank, 2021

Technological advancements in the production of goods and services have resulted in the generation of waste and emissions that have a detrimental impact on the quality of human life. The aggregation of these emissions engenders adverse externalities for society and will constitute a burden for the government in addressing the impact of these emissions. The negative externalities associated with the presence of technology encompass a range of issues, including air pollution caused by emissions, residual production waste, noise pollution from the operation of production goods, and others. As the impact of emissions on the natural environment is reduced, there will be an improvement in the quality of life for citizens. However, the production activities that meet human needs tend to result in high emissions Hidayatno et al. (2019), China has initiated policies that encourage its citizens to consume less in order to reduce their impact on the environment. The transition to a low-emission economy will require the production of goods with lower emissions and investment in low-emission technology (Springer et al., 2019). Monetary policy also has a significant impact on welfare through interest rates and the money supply, as the leading sector (Sari et al., 2021).

Environmental degradation has become one of the major issues in global economic development. Rapid industrialization and energy-intensive economic activities contribute significantly to rising carbon dioxide (CO₂) emissions, particularly in developing countries. The Environmental Kuznets Curve (EKC) hypothesis proposed by Grossman & Krueger (1994) explains that environmental degradation tends to increase in the early stages of economic growth before eventually declining once these countries reach higher income levels. However, many developing countries remain trapped in a phase where economic expansion continues to exacerbate environmental damage. Increased emissions can negatively impact public welfare through reduced environmental quality, deteriorating health, productivity losses, and increased vulnerability to climate-related risks. Research conducted by Stern (2008) emphasizes that climate change and emissions impose substantial long-term economic costs that can reduce social welfare and economic sustainability. Similarly, a study by Shahbaz et al. (2012) confirms that emissions and energy consumption significantly affect economic performance and welfare dynamics in developing countries (Sugiyarto et al., 2025).

The welfare of the Indonesian people has been subjected to significant challenges since the advent of the global pandemic. The necessity to limit transactions with other countries in order to halt the spread of the virus has had a considerable impact on international trade indicators, particularly with regard to exports and imports. Domestic production is unable to be exported abroad, and domestic demand for imported goods, particularly input factor goods, consequently affects domestic economic activities. The results of Salvatore (2020) revealed several empirical facts. Firstly, the global decline in GDP growth due to the significant impact of the COVID-19 pandemic on international transactions was not universal. Secondly, while the world is interdependent due to globalization, India and Indonesia demonstrated stability in their GDP growth. Thirdly, China continued to experience positive growth despite reaching double-digit GDP growth prior to the covid-19 pandemic. International trade plays a significant role in enhancing welfare, provided that it is underpinned by sustainable export policies while still incorporating export costs (Sun et al., 2020). This stands in contrast to the findings of Alessandria et al. (2021), which suggest that implementing a low-cost export tariff policy may prove more beneficial for enhancing welfare than pursuing long-

term consumption changes. This is particularly relevant for new companies that may face challenges in undertaking export activities.

Monetary policy frequently captures the attention of investors, influencing their decisions regarding investments in both real and financial markets. The phenomenon of globalization also exerts an influence on the behavior of investors, who are inclined to direct their investments toward countries that offer the greatest potential for profit. The potential for increased profits is amplified when supported by globalization, such that there are no limitations on investors investing in any country, whether in the real market or the financial market of a country that adheres to an open economic system. The Federal Reserve (the FED) exerts considerable influence over investor attitudes and investment policies, given the numerous economic benefits associated with investing in a superpower. Similarly, the central banks of developing countries (the ECCB) would be well advised to take the Fed's policy decisions into account when formulating their own domestic policy decisions and directions. The following data illustrates the real interest rates between Indonesia and the United States.

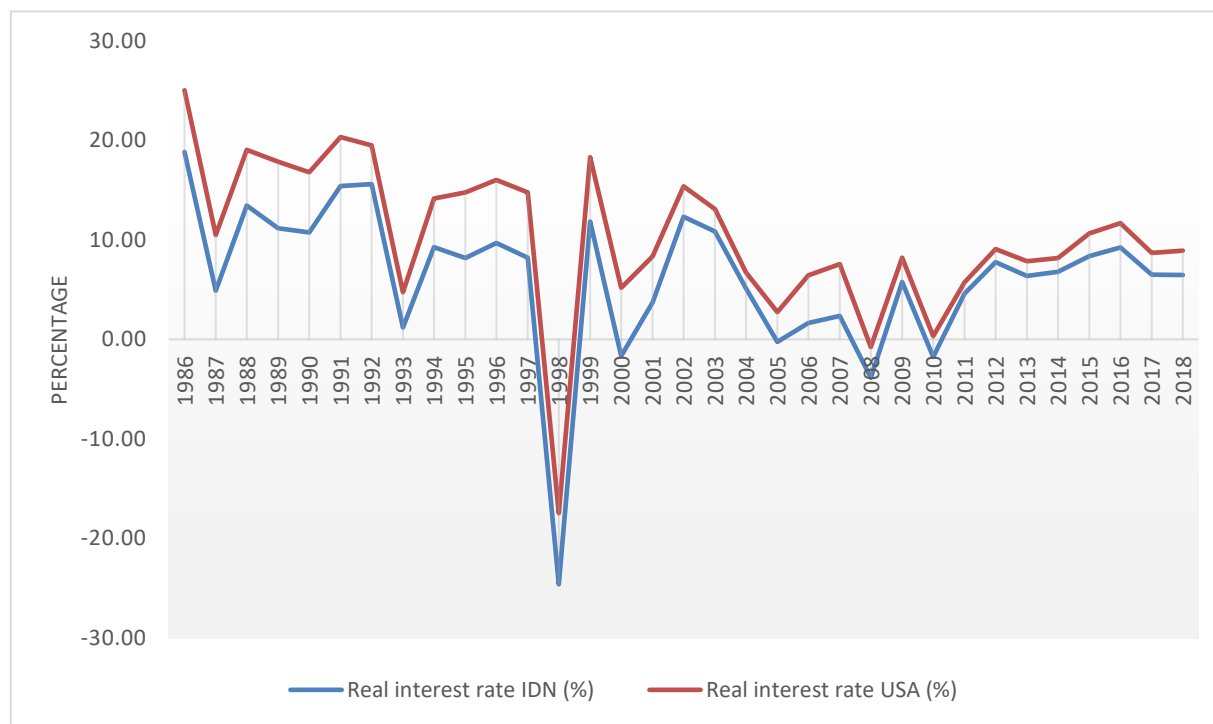


Figure 2. Real Interest Rates in Indonesia and the United States

Source: World Bank, 2021

Tetik (2020) posits that when the policy rate of policymakers reaches a very low level, the Central Bank begins to utilize unconventional monetary policy practices. In such instances, the capacity for central banks to adapt their policies is constrained. Major central banks, such as the Federal Reserve, frequently employ techniques such as portfolio expansion and balance sheet restructuring. The implementation of unconventional monetary policies by financial policymakers has been observed to exert an influence on long-term interest rates, whereby expectations and risk premiums are affected. In the academic literature, the impact of unconventional monetary policies has been predominantly assessed in terms of their transmission from advanced economies to emerging

market economies (EMEs). In light of the aforementioned explanation, this paper seeks to investigate whether emissions, international trade, and monetary policy exert a long-term impact on the welfare of the Indonesian people. It would be beneficial to ascertain the impact of emissions, international trade, and monetary policy on the welfare of Indonesian society. This paper is organized into sections, namely Literature Review (section 2), Methodology and Research Design (section 3), Data Analysis and Interpretation (section 4), and Conclusions and Recommendations (section 5), followed by a Conclusion.

LITERATURE REVIEW

The objective of every nation is to advance the wellbeing of its citizenry on a yearly basis. In order for social welfare improvement schemes to succeed, it is essential that they are aligned with a stable economic outlook, characterized by a positive trend. The stabilization of the economy is influenced by a number of factors, including the impact of emissions generated by domestic production factors, international trade, exchange rates, domestic and international interest rates, and economic policies implemented. Agénor & Montiel (2019) posit that in developing countries, a multitude of market imperfections emerge. The rigidity of bank lending rates within a given economy is contingent upon the country's financial structure, shaped by a constellation of factors, including the degree of financial market development, the level of competition within the banking system, and the structure of financial ownership. To illustrate, a reduction in competition within the credit market will result in a narrower range of alternative financing options, leading to a constrained elasticity of loan demand and a limited responsiveness of lending rates to policy shifts. Consequently, the transmission process of monetary policy in developing countries is influenced by a range of instruments, including the interest rate effect, the nominal exchange rate effect, the asset price and balance sheet effect, the credit availability effect, and the expectation effect.

In regard to the regulation of economic stabilization in developing countries, as proposed by Agénor & Montiel (2019) economic stabilization policies based on inflation control in developing countries can be classified into the following categories:

1. A populist policy is one that involves direct intervention in the wage-price process through the implementation of wage and price controls, which may or may not be accompanied by adjustments to the underlying fiscal imbalances.
2. Orthodox policies, which may be either money-based or exchange rate-based, rely on the imposition of restrictions on the rate of monetary expansion in order to provide a nominal anchor for the economy while allowing the exchange rate to float. In contrast, exchange rate-based programs rely on exchange rate pegging to provide a nominal anchor (boundary).
3. Heterodox policies are fiscal adjustments that are designed to be implemented in a single step, whereas "gradual" programs aim to reduce the fiscal deficit over time. The most complex approach to stabilization is the "heterodox" option, which incorporates several features of the other approaches, including fiscal corrections, exchange rate freezes or pre-announced exchange rate paths, and income policy in the form of explicit wage-price controls or "social contracts."

Populist policies tend to fully control economic activities by the government and ignore international market mechanisms in maintaining economic stabilization. Orthodox policies consist of

two types, namely money-based where the policy of stabilizing the demand and supply of money is left to market mechanisms, so that wages and prices are fully determined in the market, both money and goods markets, exchange rate-based orthodox policies where economic stabilization focuses on the exchange rate system using improving the quality of a country's exports, usually developing countries often use a floating exchange rate system because the quantity of exports must also be balanced with the country's import levels to meet basic domestic needs. Heterodox policies are defined as those that diverge from the conventional tenets of economic orthodoxy, thereby challenging the dominant theoretical paradigms that have traditionally informed economic thinking. Such policies place a greater emphasis on the role of the government in the economy, advocating for more assertive fiscal policy, tighter market regulation, and intervention in specific sectors to address crises and stimulate economic growth. Heterodox policies acknowledge the inherent instability and imperfections of the market, emphasizing the necessity for governmental intervention to ensure stability and prevent crises. Social welfare and income redistribution are accorded priority, with a focus on distributing economic benefits across society. In contrast to orthodox approaches, heterodox policies adopt an integrated and flexible stance, utilizing a diverse array of instruments to address economic challenges. Overall, heterodox policy diverges from traditional economic thinking, prioritizing governmental intervention, social welfare, and a flexible approach to promoting economic stability and equitable development.

The research conducted Tetik (2020) revealed that when the Federal Reserve determines its policy decisions, it does not consider the policy decisions of the Eastern Caribbean Central Bank (ECCB). Therefore, it can be concluded that the Fed generally makes policy decisions independently of other central banks. Furthermore, the central banks of developing countries, including Indonesia, South Korea, Thailand, and Turkey, tend to align their policy decisions with those of the Fed. When the Federal Reserve raises the policy rate (implementing contractionary monetary policy), the central banks of Indonesia, Thailand, and Turkey develop analogous policy strategies. However, when the Federal Reserve lowers the policy rate (implementing expansionary monetary policy), the central banks of these countries do not adopt the same policy strategy.

Bofinger (1996) study found the government's sacrifice ratio to be very high in implementing orthodox money-based policies and the problem of the importance of this particular strategy in 1994 provided an explanation for poor economic performance in Russia, Ukraine, and Kazakhstan, so it is necessary to use the HERBS alternative strategy that has been successful in Israel and Poland in 1985 including (1) publicly announced inflation targets, (2) a nominal exchange rate target, possibly starting from a highly devalued level and determined gradually ex ante, (3) primary action by the government is to unionize workers and managers with the primary objective, (4) replacing (de facto) wage indexation with long-term wage contracts with predetermined nominal wages, (5) government commitment to keep all administratively set prices within the inflation target. Mau (2017) posits that the initial adaptation of the domestic economy to new economic and political realities is contingent upon the implementation of long-term populist policies. The complexity of the desired outcomes does not necessitate the implementation of more socially detrimental solutions. Rather, the intellectual rigour applied to the formulation of development measures should ensure the achievement of sustainable economic growth in the medium and long term. Furthermore, the inherent complexity of

these measures is a positive indicator of the strength of political consolidation. It can be concluded that the achievement of strategic development goals in Russia is contingent upon the comprehensive modernization of the economy, government administration, social policy and law enforcement activities in the context of the implementation of populist policies.

RESEARCH METHOD

This study aims to examine the influence of emissions, international trade, and monetary stabilization policies on the welfare of the Indonesian population. To this end, quantitative research methods will be employed, utilizing secondary data sources. This study employs a research model developed by Wulandari (2012), which investigates the significance of the Credit Channel and the Interest Rate Channel in the Monetary Transmission Mechanism in Indonesia. Additionally, it utilizes the Structural Vector Autoregression Model. The theory of Irving Fisher posits that the money supply exerts a significant influence on a country's output or welfare. This is contingent upon the relationship between the money supply and the total amount of spending directed towards the purchase of goods and services produced within the economy ($P \times Y$), where P represents the price level and Y denotes income or aggregate output. The concept of providing a connection is termed velocity (V), which is defined as the average amount of money spent on the purchase of goods and services produced within a year. This can be expressed as follows:

$$V = \frac{PY}{M} \dots\dots\dots (1)$$

In order to ascertain the value of national income or aggregate output, it is necessary to multiply the velocity by the money supply. This equation provides support for the causal theory of money, which is aligned with the New Keynesian and Monetarist perspectives that attribute a significant role to money in determining the level of economic activity.

$$Y = \frac{M.V}{P} \dots\dots\dots (2)$$

The data utilized in this study is derived from secondary sources spanning the period between 1986 and 2018. The data source is the World Bank. The variables employed in this study are community welfare, as reflected by per capita income, which serves as an indicator of societal well-being or the aggregate output of a country; inflation and emissions, which are assumed to be prices; M2 variables, representing the money supply; international trade, as evidenced by export-import variables; and monetary policy, associated with the level of money turnover, which is influenced by Bank Indonesia interest rates, US Federal Reserve interest rates, and the rupiah exchange rate.

Structure VAR

This research employs a quantitative methodology utilizing secondary data from the World Bank and other official sources. The following variables are employed in the analysis: GDP per capita income (Ld), inflation (If), emissions (E), money supply ($M2$), exports (X), imports (I), the one-month SBI interest rate as policy rate (SBI), the US Fed Bank interest rate (FED), and the exchange rate.

The analytical tool employed is structural vector autoregression (SVAR). As Ender and McCoy note in Wulandari (2012), structural vector autoregression (SVAR) represents an extension of the vector autoregression (VAR) method. SVAR employs economic theory to impose restrictions and identify structural innovations with residual estimates. In contrast to the restrictions used in VAR, the SVAR approach to identifying disturbances is based on economic theory.

RESULTS AND DISCUSSIONS

Forecasting Error Variance Decomposition of Output Level (GDP per capita)

The analysis, as demonstrated by the variability of the output level, is represented by GDP per capita, which reflects welfare. This is influenced by a number of monetary variables and international trade, both domestically and internationally. The explanation can be found in Table 1 below.

Table 1. Forecasting Variance Decomposition of LNPDB Percapita

Period	S.E.	LnPDB_Percapita	Inflation	Ln_Export	Ln_Import	Ln_Kurs	LnCO ²	LnJUBSB	IDNSB	USA
1	0.051	100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.079	64.95	13.66	3.23	6.44	6.68	0.55	2.48	1.70	0.26
3	0.102	57.32	17.69	5.71	6.04	4.06	1.96	2.97	3.47	0.74
4	0.126	47.09	18.34	9.35	4.44	2.74	9.35	4.46	3.52	0.66
5	0.146	38.97	24.84	10.79	3.46	2.07	10.26	5.55	3.36	0.65
6	0.166	31.57	28.71	12.94	2.68	2.06	11.89	6.05	3.31	0.74
7	0.181	28.22	30.29	13.50	2.41	2.31	12.55	6.49	3.33	0.83
8	0.191	26.09	31.50	13.74	2.21	2.28	12.68	6.85	3.66	0.95
9	0.199	24.79	32.14	13.65	2.12	2.26	12.83	7.08	4.03	1.04
10	0.207	24.20	32.24	13.56	2.09	2.18	12.95	7.30	4.34	1.08

Source: EViews 7, 2021.

The regression results indicate that the role of monetary policy through domestic real interest rates contributed to welfare by 4 per cent until the end of the period. However, this contribution was not statistically significant. In contrast, the real interest rate of the US Federal Reserve Bank exerted a statistically significant influence of below 1 per cent, reaching 1.08 per cent at the end of the period. Monetary influence through domestic real interest rates contributes more to GDP per capita than US interest rates. However, the data indicates that the US real interest rate exerts an influence on people's welfare, as evidenced by the increase in the percentage value of influence in each period. A reduction in the real interest rate will result in an enhancement of welfare among the Indonesian people, given that investors tend to direct their investments towards the real sector, which offers greater potential for returns than the capital or money markets, which contribute less to employment.

This finding is also consistent with the findings of Setiowati & Nugroho (2019) who stated that the contribution made by the BI Rate interest rate variable to unemployment was the largest among the variables examined, namely the interest rate variable, the variable money supply (M2), government spending, and tax revenue. An increase in the interest rate will result in a reduction in potential employment opportunities, which will in turn have an adverse effect on the welfare of the Indonesian people. It can be observed that interest rates in developing countries have not contributed

significantly to welfare, due to the necessity for the economic structure to be adequately prepared and supportive in order to facilitate entry into the open economic market. The liberalization of the financial sector in least developed countries (LDCs) can have a detrimental impact on welfare unless reforms are implemented in the labour market at an earlier stage, or at the very least, in a simultaneous manner (Daitoh, 2003). Research conducted by Hukama (2017) on the impact of interest rate hikes on pepper production in Indonesia revealed that the increase in production resulting from lower interest rates remains below the level of the impact of lower domestic prices.

Furthermore, inflation represents a significant monetary variable with long-term implications for overall welfare. The percentage continues to grow in each period until it reaches 32.34% in the final period, which affects GDP per capita. It is imperative to control inflationary pressures in order to maintain the purchasing power of the community and to ensure that businesses retain the capacity to expand production and absorb labour. Consequently, inflation that is effectively managed is characterized by a value below 10 per cent, or what is commonly referred to as 'creeping inflation'. Moreover, environmental variables exert an influence on welfare. The generation of CO₂ emissions is a consequence of the production of goods and services that utilize technology that produces CO₂ or intermediate waste, which, when incinerated, will yield CO₂ as a by-product. The data indicates a notable increase in CO₂ emissions during the final periods, reaching 12% compared to the initial 0.55% observed at the beginning of the period. This trend suggests a deterioration in the prevailing conditions, with CO₂ emissions rising sharply and exerting a detrimental impact on community welfare. The necessity for communities to bear additional costs to address the consequences of these emissions further underscores the urgency of addressing this issue.

International trade has been demonstrated to be a significant factor in the enhancement of public welfare, as evidenced by the correlation between export intensity and public welfare outcomes. This finding suggests the absence of fluctuations in each period, with a positive trend evident from 3 percent in period 2 to 13.56 percent in the final period. Concurrently, the import variable exhibits a downward trend in each period with respect to welfare. In period 2, imports contributed 6.44 percent to welfare, and continued to decline in each subsequent period until the final period, at which point they contributed only 2.09 percent to welfare. Consequently, the findings of the regression analysis indicate that export policies exert a more substantial influence on welfare in comparison to import policies. The quality of international trade is also influenced by exchange rates; therefore, this variable was analyzed to determine its effect on welfare. The findings indicate that the value in period 2 was 4 percent, subsequently stabilizing at 2 percent until the conclusion of the period of its contribution to welfare. This perspective aligns with the assertions made by Froyen (1984), a classical economist, who refuted mercantilist economists by contending that money does not serve as a reflection of wealth or welfare, but rather functions solely as a medium of exchange in transactions involving goods and services. Consequently, the primary metric for evaluating economic prosperity is gross domestic product (GDP), which represents the total output of goods and services within a nation.

The variable of money supply has a positive annual contribution, exhibiting a 7 percent annual increase by the conclusion of the period under consideration. This phenomenon underscores the notion that an augmentation in the circulation of money, concomitant with an escalation in the number of goods and services, culminates in an enhancement in the general welfare of the populace.

The goods market is one of the factors that supports a high money supply, which, in turn, has an impact on welfare because it indicates a smooth economy with high investment in the real sector. This finding aligns with the conclusions of a study by Sugiarto (2014) which demonstrated a strong correlation between the money supply (M1) and Indonesia's GDP in the short term. Furthermore, Winarto et al. (2021) stated that the money supply has a significant relationship with economic growth.

The findings of this study indicate that the exchange rate has been demonstrated to exert a diminishingly beneficial effect on welfare over the course of each respective period. Prior to the economic crisis in 1998, Indonesia employed a fixed exchange rate system. Consequently, when the crisis occurred, the nation transitioned to a controlled floating exchange rate system. A controlled floating exchange rate will have a significant impact on welfare if imports are smaller than exports. This objective is being pursued by the government through its encouragement of the consumption of domestic products, with the aim of reducing the consumption of imported goods. As asserted by Alba et al. (2020), maintaining stable price control is paramount for ensuring and enhancing public welfare. The implementation of a monetary policy that utilizes CPI inflation targeting, nominal output growth targeting, and a fixed exchange rate regime has been demonstrated to result in diminished welfare. However, optimal monetary policy, which maximizes welfare, places greater emphasis on real output than on CPI inflation. In addition, consistent with the findings of Dohwa (2014) three transmission effects of expansionary monetary policy on consumption and employment can be identified. These effects represent components of household utility. The following three effects on consumption and employment are of particular significance. The implementation of a domestic monetary expansion policy has been demonstrated to result in a more pronounced weakening of the rate of increase in household consumption when compared with a scenario in which the employment of labor is conducted exclusively by foreign firms operating on a local currency basis. Secondly, the implementation of domestic monetary expansion policy does not appear to exert any significant influence on the absorption of foreign labor, while concurrently stimulating foreign consumption. Thirdly, policies that promote monetary expansion in conjunction with foreign companies, wherein the employment of labor is governed by domestic pricing mechanisms, are found to exert a comparatively diminished impact on overall welfare.

CONCLUSION AND RECOMMENDATION

The impact of monetary policy through monetary transmission mechanisms using domestic and foreign interest rate indicators, international trade, and environmental factors has been the subject of relatively little empirical study in developing countries. This research is imperative because Indonesia is a developing country with considerable potential in terms of its natural and human resources. The results of the VAR structural analysis demonstrate that inflation control is of paramount importance for maintaining and enhancing the welfare of the population, as it is the most significant contributor among other variables. Moreover, with respect to monetary policy, domestic real interest rates exert a more substantial influence than US real interest rates. The real sector is dominated by domestic investment, which exerts a greater influence on public welfare. The overarching objective of international trade policy is to promote the export of goods and services over the import of goods and

services. This prioritization is predicated on the notion that export policy has a more significant impact on public welfare. The exchange rate policy is stable, and it utilizes the current policy of a floating exchange rate. The impact of environmental factors, such as carbon dioxide (CO₂) emissions, on society is detrimental, resulting in increased expenditures for individuals to address the consequences of pollution. Consequently, in order to reduce emissions, the government must incentivize companies to adopt environmentally friendly technologies, thereby reducing emissions and pollution.

It is imperative for the Indonesian government to prioritize the welfare of its citizens in all policy decisions. This entails the implementation of mechanisms that prioritize competitive domestic real interest rates, thereby attracting investors willing to allocate capital to the domestic real sector. The impact of such investments on the welfare of the population is extensive. Foreign companies entering the country to invest must utilize local labor, ensuring wages align with international standards in accordance with the labor market. This approach has the potential to stimulate a smooth economic cycle, thereby augmenting purchasing power and adding value to the community. The phenomenon of economic liberalization exerts a profound influence on the realm of welfare, manifesting through its impact on export contributions. Consequently, the facilitation of exports emerges as a pivotal policy area that garners priority. Additionally, the government is advised to encourage companies to utilize environmentally friendly technology in their production activities, with the objective of reducing pollution and emissions that adversely affect community income. This research is of paramount importance in supporting the development of the real sector and identifying which sectors contribute significantly to the welfare of the Indonesian people.

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