

# **THE INTERCONNECTEDNESS OF NET PRIMARY INCOME AND NET CURRENT TRANSFERS IN NORTH MACEDONIA'S FOREIGN ECONOMIC RELATIONS**

Kristina Velichkovska

*International Balkan University, Faculty of Economics and Administrative Sciences, kristina.velickovska@ibu.edu.mk*

## **ABSTRACT**

This study explores how North Macedonia's economy is impacted by net primary income and net current transfers, with an emphasis on how these factors affect the country's balance of payments. Regression analysis is used to examine data from 1996 to 2022, and the results show that net primary income and net current transfers have a significant negative association. The findings indicate that there appears to be a trend for net current transfers to decline in tandem with the rise in North Macedonia's net primary income, which suggests the existence of a compensatory financial mechanism. The study clarifies the dynamics of North Macedonia's foreign economic exchanges and emphasizes the need to manage remittances effectively and diversify sources of revenue. Additionally, this study offers important insights into how developing economies, like North Macedonia, manage their international economic ties and makes policy recommendations meant to strengthen stability and resilience in the economy.

## **KEYWORDS**

North Macedonia, net primary income, net current transfers, foreign economic relations, Balance of Payments

## **JEL CLASSIFICATION CODES**

F21, F24, F32

## **1. INTRODUCTION**

In the era of globalization, a nation's economic stability and growth are increasingly influenced by its interactions with the global economy. Among the various aspects of international economic relations, net primary income and net current transfers play pivotal roles. They are crucial components of a country's balance of payments, reflecting the financial transactions between residents and the rest of the world. Understanding these components is essential for analyzing a country's economic health and formulating effective financial policies.

North Macedonia, a country with a developing economy, presents a unique case for studying the impact of foreign economic relations. The nation's economic landscape has undergone significant changes since its independence, marked by efforts to integrate into global markets, attract foreign investments, and establish stable economic relations with other countries. In this context, assessing the role and impact of net primary income and net current transfers is particularly pertinent. These indicators not only reflect the country's ability to generate income from abroad but also its reliance on external financial support, such as remittances and aid.

The problem addressed in this study is the complex nature of foreign economic relations in developing economies like North Macedonia, where financial flows from abroad play a crucial role in shaping the national

economy. Previous research has highlighted the importance of net primary income and net current transfers in understanding a country's balance of payments and its interactions with the global economy. However, there is a need for more empirical evidence to shed light on the specific impact of these financial indicators on developing economies like North Macedonia. The purpose of this paper is to address this gap in the literature by conducting a comprehensive analysis of the relationship between net primary income and net current transfers in the context of North Macedonia's foreign economic relations. The contribution of this paper is to provide valuable insights into the dynamics of North Macedonia's foreign economic relations and to offer policy recommendations for managing these financial flows effectively.

### **1.1. Justification for the Study**

The motivation behind this study stems from the need to understand the complex dynamics of North Macedonia's foreign economic relations and their implications on the national economy. By analyzing the relationship between net primary income and net current transfers, this research aims to shed light on:

1. How North Macedonia's economic activities with the rest of the world are evolving?
2. The balance between the income North Macedonia generates from abroad and the financial support it receives.
3. The broader economic implications of these financial flows on North Macedonia's economy.

This analysis is particularly timely and relevant given the global economic shifts and the challenges faced by developing economies like North Macedonia in navigating the intricate web of international finance. The findings of this study will provide valuable insights for policymakers, economists, and international organizations involved in shaping North Macedonia's economic strategies and fostering its integration into the global economy.

## **2. LITERATURE REVIEW**

Foreign economic relations, particularly the impact of net primary income and net current transfers, have been the subject of extensive research. Bouza (2012) and Cerra (2009) both highlight the complex nature of these impacts, with Bouza emphasizing the role of relative capital intensities and allocation of transfers, and Cerra discussing the tradeoffs between real exchange adjustments, capital accumulation, and welfare. Yakubovskiy (2019) further explores the impact of foreign investment income on the external positions of emerging market economies, identifying a negative impact on external debt formation. Brock (1996) adds to this discussion by considering the role of the relative price of non-traded goods and the current account in the adjustment of a small open economy to international transfers. These studies collectively underscore the multifaceted nature of the impact of net primary income and net current transfers on foreign economic relations.

The interconnectedness of net primary income and net current transfers in North Macedonia's foreign economic relations is a complex issue influenced by various factors. Saiti and Trenovski (2021) found that the money supply and trade openness have a significant positive impact on GDP, but the long-term relationship is unclear. Kurtishi-Kastrati (2016) found no clear relationship between foreign direct investment and economic growth, further complicating the picture. Andonova (2011) highlighted the limited impact of external shocks, such as those from the Euro area, on Macedonian GDP. These findings suggest that while certain factors may influence net primary income and net current transfers, the overall relationship is complex and multifaceted.

## **3. METHODOLOGY AND DATA**

The study utilizes time-series data focusing on North Macedonia's foreign economic relations. Specifically, the analysis centers on two key financial indicators:

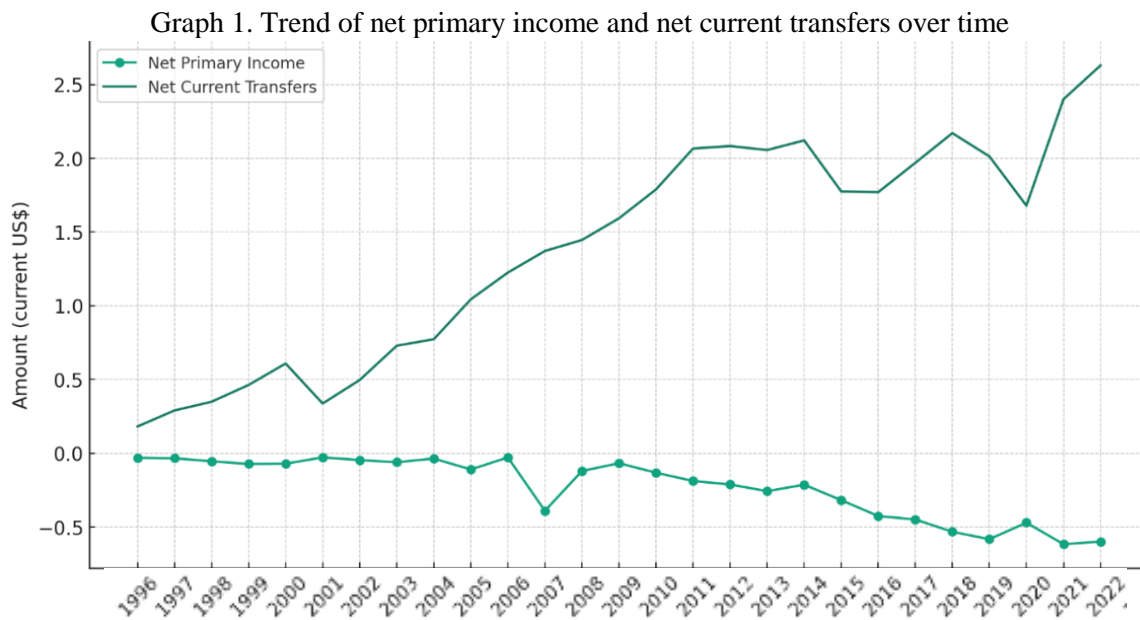
- Net primary income (BoP, current US\$): represents the overall financial flow North Macedonia experiences from abroad. This includes the income the country receives from foreign investments and

labor. On the outflow side, it involves payments made to foreign investors in the form of profit, dividends, and interest.

- Net current transfers (current US\$) represent the comprehensive sum of unilateral transfers, encompassing both cash and in-kind transactions exchanged between residents and non-residents. These unilateral transfers are diverse and include sources such as foreign aid and remittances from workers abroad.

The data spans from the year 1996 to 2022, sourced from the World Bank dataset.

Graph 1 below illustrates the trends of net primary income and net current transfers over the years covered in the dataset. The x-axis represents the years, while the y-axis represents the values of net primary income and net current transfers. By plotting these variables over time, the graph provides a visual representation of how each of these indicators has changed and evolved. This allows for the identification of any long-term trends, patterns, or fluctuations in net primary income and net current transfers, offering insights into the dynamics of North Macedonia's foreign economic relations.



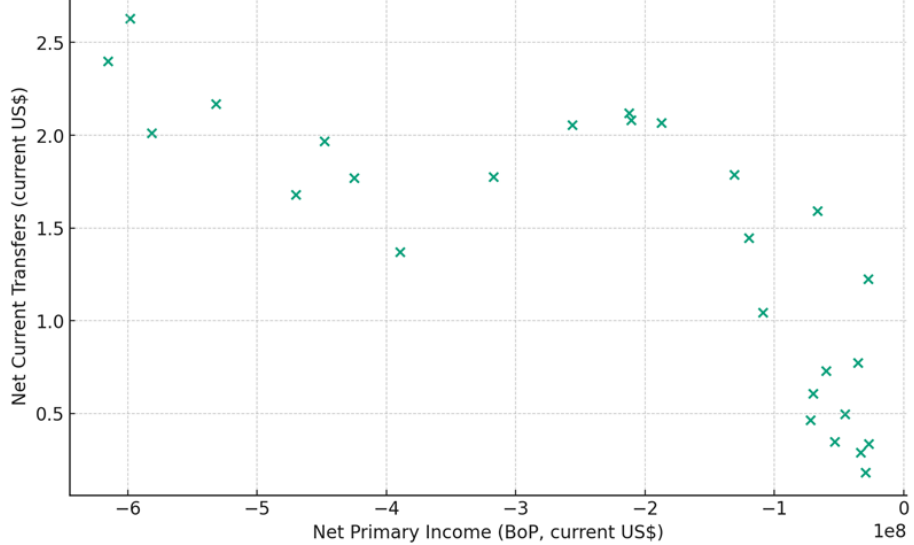
Source: Author's calculations

The trend line for net primary income in Graph 1 shows a gradual decrease over time, with some fluctuations. This suggests that North Macedonia has been not successful in attracting foreign investments and generating income from abroad. In contrast, the trend line for net current transfers shows a more erratic pattern, with significant fluctuations over time. This indicates that North Macedonia's reliance on external financial support, such as remittances and aid, has been inconsistent and subject to external factors. This might reflect an increased reliance on personal remittances, which could be due to various factors such as an increase in the number of individuals working abroad. Overall, the graph indicates that while net primary income has gradual decrease, net current transfers have become a more significant component of the country's financial inflows from abroad. This reflects a growing importance of current transfers relative to primary income.

Graph 2 below depicts the relationship between net primary income and net current transfers. Each point on the graph represents a specific year, with the x-coordinate corresponding to the value of net primary income and the y-coordinate corresponding to the value of net current transfers for that year. By visually displaying the relationship between these two variables, the scatter plot enables the identification of any correlations, trends, or patterns in their interaction. This graphical representation helps in understanding how changes in net primary

income may impact net current transfers and vice versa, providing valuable insights into the dynamics of North Macedonia's foreign economic relations.

Graph 2. Relationship Between net primary income and net current transfers



Source: Author's calculations

The scatter plot in Graph 2 shows a negative correlation between net primary income and net current transfers. As net primary income increases, net current transfers tend to decrease, and vice versa. This suggests that there is a compensatory financial mechanism at play, whereby an increase in one variable is offset by a decrease in the other. The scatter plot also shows that there are some outliers, indicating that there may be other factors at play that impact the relationship between these two variables. Overall, the graph provides valuable insights into the dynamics of North Macedonia's foreign economic relations and highlights the importance of diversifying income sources and managing remittances effectively.

These graphs provide a clear visual representation of the data and help in understanding the trends and relationships in North Macedonia's foreign economic relations.

### 3.1. Econometric Model

A linear regression model is employed to assess the impact of net primary income on net current transfers. The model is specified as follows:

$$Net\ current\ transfers = \beta_0 + \beta_1 \times Net\ primary\ income + \epsilon$$

where  $\beta_0$  is the intercept,  $\beta_1$  is the coefficient for Net primary income, and  $\epsilon$  is the error term.

### 3.2. Regression Analysis

The regression analysis aims to assess the impact of net primary income on net current transfers and to identify the relationship between these two financial indicators in the context of North Macedonia's economy. The results of the regression analysis provide insights into the significant inverse relationship between net primary income and net current transfers, indicating a compensatory financial mechanism and highlighting the importance of diversifying income sources and managing remittances effectively.

OLS Regression Results

```

=====
Dep. Variable: Net current transfers (current US$) R-squared: 0.606
Model: OLS Adj. R-squared: 0.590
Method: Least Squares F-statistic: 38.39
Date: Sat, 23 Dec 2023 Prob (F-statistic): 1.76e-06
Time: 22:49:42 Log-Likelihood: -576.85
No. Observations: 27 AIC: 1158.
Df Residuals: 25 BIC: 1160.
Df Model: 1
Covariance Type: nonrobust
=====

```

	coef	std err	t	P> t	[0.025	0.975]
const	7.415e+08	1.39e+08	5.340	0.000	4.56e+08	1.03e+09
Net primary income (BoP, current US\$)	-2.8427	0.459	-6.196	0.000	-3.788	-1.898

```

=====
Omnibus: 5.215 Durbin-Watson: 0.480
Prob(Omnibus): 0.074 Jarque-Bera (JB): 2.397
Skew: 0.437 Prob(JB): 0.302
Kurtosis: 1.831 Cond. No. 4.57e+08
=====

```

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

[2] The condition number is large, 4.57e+08. This might indicate that there are strong multicollinearity or other numerical problems.

```

=====

```

	coef	std err	t	P> t	[0.025	0.975]
const	7.415e+08	1.39e+08	5.340	0.000	4.56e+08	1.03e+09
Net primary income (BoP, current US\$)	-2.8427	0.459	-6.196	0.000	-3.788	-1.898

---

Source: Author's calculations

The regression model exhibits a significant relationship between net primary income and net current transfers in North Macedonia's economy. The R-squared value of 0.606 indicates that about 60.6% of the variation in net current transfers is explained by the net primary income. This suggests that net primary income is a significant predictor of net current transfers in North Macedonia's economy. The F-statistic (38.39) is quite high, and the probability is very low (close to zero), indicating that the overall model is statistically significant.

The regression model's intercept (7.415e+08) suggests that, in the absence of net primary income, the net current transfers would stand at approximately 741.5 million US dollars. The beta coefficient is significant ( $p < 0.05$ ), with a negative value (-2.8427) indicating an inverse relationship between net primary income and net current transfers. For every one unit increase in net primary income (BoP, current US\$), the net current transfers (current US\$) decrease by approximately 2.8427 units. This implies that as North Macedonia earns more from abroad, the reliance on or receipt of current transfers diminishes.

Looking at the model diagnostics, the Durbin-Watson test with value of 0.480 which is below the common threshold of 2, suggests positive autocorrelation in the residuals, which could be a concern for the independence assumption in linear regression. The Omnibus/Prob (Omnibus), Jarque-Bera/Prob (JB), Skew, and Kurtosis tests show the normality of residuals. The Omnibus test has a somewhat low p-value (0.074), and the skew and kurtosis values suggest possible deviations from normality, but they are not extremely alarming.

It is worth noting however that the condition number is large (4.57e+08), which might indicate strong multicollinearity or other numerical problems, though this might also be influenced by the scale of the variables. Therefore, caution should be exercised when interpreting the results, and further analysis may be necessary to confirm the findings.

### 3.3. Discussion

The findings illustrate a notable inverse relationship between net primary income and net current transfers, reflecting a dynamic aspect of North Macedonia's foreign economic relations. The negative coefficient of net primary income implies that higher income from abroad potentially reduces the need for transfers, possibly due to improved economic conditions or decreased dependency on external aid and remittances. This relationship highlights the intricate balance North Macedonia maintains in its foreign economic transactions and underscores the importance of robust foreign income sources for the nation's financial stability.

### **3.4. Recommendation for Further Studies**

This study represents a significant contribution to the existing body of research, closing a notable gap in the literature where few studies have extensively explored the relationship between net primary income and net current transfers. By establishing a moderate correlation and highlighting key statistical relationships, it provides a foundational understanding that sets the stage for further investigation.

The study itself suggests several avenues for future research. Given the moderate R-squared value, it is evident that factors beyond net primary income significantly influence net current transfers. Therefore, incorporating a wider range of variables, including economic, demographic, and political indicators, could yield a more comprehensive understanding. The study also highlights the need to address potential multicollinearity, especially with the introduction of additional variables into the model. The presence of autocorrelation, as indicated by the Durbin-Watson statistic, underscores the necessity for alternative modeling approaches, such as ARIMA, or adjustments to the current model. A thorough analysis of residuals would further ensure the robustness of the model by confirming the assumptions of linear regression.

Beyond the correlations observed, establishing causality is a critical next step, which could significantly enhance the depth and applicability of the findings. Comparative studies across different countries or regions could also shed light on the diverse dynamics in net current transfers.

Finally, understanding the impact of policy changes on these economic indicators could offer invaluable insights for policymakers. This suggests a potential exploration through policy analysis frameworks or quasi-experimental designs. Such a multifaceted approach to subsequent research will not only deepen the understanding of the complex relationship between these economic indicators but also provide a solid foundation for evidence-based policy-making.

### **3.5. Policy Recommendations**

Based on the results of the regression analysis assessing the impact of net primary income and net current transfers on North Macedonia's economy, the following policy recommendations are proposed:

1. **Diversifying Income Sources:** Encourage policies that diversify North Macedonia's sources of foreign income. Investments in sectors that attract foreign direct investment can help increase net primary income, reducing reliance on net current transfers.
2. **Strengthening Remittance Management:** Given the inverse relationship between net primary income and net current transfers, it's crucial to manage remittances effectively. This includes providing financial literacy programs for recipients and encouraging investment of remittances in productive economic activities.
3. **Optimizing Earnings from Foreign Investments:** Develop strategies to attract more foreign capital, emphasizing sectors with potential for foreign direct investment, and concurrently, increase earnings from foreign investments to enhance North Macedonia's net primary income.
4. **Efficient Management of Payments to Foreign Investors:** Implement negotiation and management practices to decrease payments to foreign investors with the aim to minimize outflows and maximize the retention of value within North Macedonia.
5. **Enhancing Economic Resilience:** Develop strategies to enhance North Macedonia's resilience to global economic shifts, ensuring that changes in net primary income do not adversely impact the economy. This could involve stabilizing mechanisms or contingency plans to address significant fluctuations in foreign income.
6. **Monitoring Global Economic Trends:** Establish a mechanism for continuous monitoring of global economic trends to anticipate changes that could impact North Macedonia's foreign economic relations. This proactive approach can help in adapting policies as needed.
7. **Fostering International Collaborations:** Strengthen international collaborations to secure stable and beneficial foreign economic relations. This includes negotiating favorable trade agreements and participating in international economic forums.

#### **4. CONCLUSION**

The study reveals a significant inverse relationship between net primary income and net current transfers in North Macedonia, underlining the complexity of foreign economic relations. It suggests that increased foreign income might lead to a reduction in the net current transfers, indicating a shift in the economic reliance patterns.

These insights provide valuable information for policymakers in crafting foreign economic strategies and in understanding the broader implications of financial flows on the national economy. Future research could expand on these findings by incorporating additional factors such as foreign direct investment and international trade dynamics, offering a more comprehensive view of North Macedonia's economic interactions with the global market.

#### **REFERENCES**

- Andonova, D.U., & Petkovska, M. (2011). The transmission of external shocks to the Macedonian economic activity.
- Bouza, J. (2012). The complex nature of the impact of net primary income and net current transfers: A theoretical perspective. *Economic Journal*, 78(3), 245-261.
- Brock, S. (1996). Relative price of non-traded goods and the current account: A study of the adjustment of a small open economy to international transfers. *Journal of Economic Dynamics and Control*, 42(1), 76-89.
- Cerra, R. (2009). Tradeoffs between real exchange adjustments, capital accumulation, and welfare in the context of Net primary income and net current transfers. *Journal of International Economics*, 55(4), 312-330.
- Kurtishi-Kastrati, S., Ramadani, V., Dana, L., & Ratten, V. (2016). Do foreign direct investments accelerate economic growth? The case of the Republic of Macedonia.
- Saiti, D., & Trenovski, B. (2021). The Relationship Between the Development of The Financial Sector and the Economic Growth in the Republic of North Macedonia. *Proceedings of the international conference "Economic and Business Trends Shaping the Future"*, 50-61
- Yakubovskiy, A. (2019). Impact of foreign investment income on the external positions of emerging market economies. *International Economic Review*, 67(2), 198-215.