

THE YIELD GAP AND THE NIIP – INVESTMENT INCOME NEXUS IN POLAND: A STRUCTURAL ANALYSIS

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Purpose: This paper assesses how the size and structure of external balance sheets affected Poland's investment income balance (IIB) dynamics between 2010 and 2025, evaluating whether Net International Investment Position (NIIP) consolidation yields proportional income flow corrections.

Design/Methodology/Approach: The research framework utilizes a linear regression model with a one-period lag to test the NIIP-to-investment income transmission. It also calculates annual implicit yields for external assets and liabilities to evaluate portfolio asymmetries and the international yield gap.

Findings: The results reveal a severe decoupling between external stock and flow positions, demonstrated by a weak, statistically insignificant relationship in the regression analysis. This lack of transmission is driven by a profound structural yield gap: low-yield official reserves suppress debt asset returns, whereas equity liabilities generate substantially higher costs. Furthermore, a persistent intra-category efficiency gap remains concentrated within the Foreign Direct Investment (FDI).

Practical Implications: Policies focused solely on nominal debt or NIIP reduction are insufficient. Policymakers must shift their focus toward enhancing the return efficiency of domestic assets abroad and upgrading Poland's position in global value chains to mitigate high-yield foreign capital outflows.

Originality/Value: While there is an intense academic debate about the privileges of the US external position, little research has explored the yield characteristics of foreign assets and liabilities in Poland. The study contributes to a better understanding of changing dynamics of Poland's investment income balance.

Keywords: Net International Investment Position; Investment income balance; Yield gap; Foreign Direct Investment; Poland.

Category of the paper: Research study.

JEL classification: F34, F4.

1. Introduction

Since the mid-1990s, the world economy has seen a rapid expansion of cross-border asset and liability holdings (Milesi-Ferretti, 2024; Lane, Milesi-Ferretti, 2018). Consequently, the dynamics of the investment income balance now play a crucial role in shaping the current account sustainability of small open economies (Adler, Garcia-Macia, 2018; Wacker, 2024). Empirical evidence by Behar and Hassan (2022) demonstrates that the income balance equals at least half of the trade balance for fifty percent of the countries in their sample.

In a standard theoretical framework, the relationship between external stock positions and investment income flows is straightforward: changes in the stock of external assets and liabilities mechanically impact investment income through a level effect (Knetsch, 2011). Consequently, a country with a higher net external liability position will tend to have a more negative net investment income, a more negative current account balance, and more net foreign borrowing needs, which in turn would decrease the income balance (Alberola et al., 2020).

However, the link between asset income flows and the international investment position is not as tight as one may expect (Donato, Tille, 2025). Some economies sustain large negative external positions without experiencing proportionally large income deficits, while others record deep and persistent imbalances despite relatively stable net asset positions (Gourinchas, Rey, 2007; Lane, Milesi-Ferretti, 2017).

These findings point to the importance of factors beyond the sheer size of external balance sheets. Specifically, they highlight how differences in the composition of countries' external assets and liabilities (Lane, Milesi-Ferretti, 2005, 2007) give rise to yield differentials, defined as the difference between the rate of return earned on external assets and the rate paid on external liabilities.

In this context, it is conceptually essential to distinguish between total returns and implicit yields. While total investment returns incorporate both current income and capital gains or losses driven by market asset prices and exchange rate fluctuations, implicit yields capture exclusively the current income streams—such as interest, distributed dividends, and reinvested earnings—relative to the capital stock (Curcucu et al., 2008). Since the primary income account of the balance of payments registers only these flows and excludes valuation effects, this paper focuses strictly on implicit yields. This focus ensures that the analysed yield gap reflects structural income servicing costs and receipts rather than transitory wealth variations.

While the existence of yield differentials is well-documented for major advanced economies, their dynamics in the context of Central and Eastern European (CEE) countries remain less explored. Poland, as a significant recipient of FDI with a concurrently large stock of official reserves, provides a compelling, yet understudied case for investigating how the interplay between the composition effect and the return effect shapes the long-term sustainability of the current account. To address this empirical gap, the main objective of this

paper is to assess how both the size and the structure of external balance sheets affected the investment income balance dynamics in Poland between 2010 and 2025. Specifically, this paper poses the following research question: to what extent can Poland's persistent net investment income payments be explained by the accumulation of the NIIP versus shifts in aggregate yields and portfolio composition?

The remainder of this paper is organized as follows: Section 2 reviews the relevant literature; Section 3 describes the data and decomposition methodology; Section 4 presents the empirical results; and Section 5 concludes.

2. An overview of the literature

The persistence of “income puzzles”—situations in which countries maintain a positive investment income balance despite negative external positions—has challenged the traditional view that investment income balances are mechanically determined by the net international investment position (Gourinchas, Rey, 2007; Gourinchas, Obstfeld, 2012; Gourinchas et al., 2019). These findings suggest that asymmetries in the rates of return on external assets and liabilities can substantially weaken, or even reverse, the expected relationship between the NIIP and the investment income balance.

The United States constitutes the most prominent example discussed in the literature, having maintained a positive investment income balance despite its persistent negative NIIP (Higgins et al., 2006). Gourinchas and Rey (2007) famously characterized the U.S. as the “world venture capitalist”, arguing that its external balance sheet performs a form of international risk intermediation. According to this interpretation, the U.S. issues relatively safe and low-yield liabilities while holding riskier, higher-yield foreign assets, particularly FDI and portfolio equity (Forbes, 2010). Therefore, the IIP's composition is an important determinant of both the size and stability of investment income (Behar, 2025). For the U.S., the structure of external assets and liabilities ensures persistent excess returns on foreign assets, offsetting the negative income impact of a net liability position. Heath (2007) provides empirical support for the “world venture capitalist” thesis by demonstrating that the U.S. net income balance is driven by a persistent yield premium on foreign direct investment and low, stable yields on government debt.

Habib (2010) finds that, among major reserve – currencies issuers, Japan and Switzerland exhibit positive excess yields on foreign assets and liabilities comparable to those of the United States. By contrast, the euro area records, on average, negative excess yields, although its performance improved markedly during the 1990s and 2000s. However, once valuation effects and capital gains are taken into account, the United States remains the only major economy to

generate consistently positive and statistically significant excess total returns on its net foreign asset position.

While advanced economies may benefit from favourable return differentials on their external balance sheets, the opposite pattern is often observed in emerging market economies. The analyses by Lane and Milesi-Ferretti (2005, 2007) reveal a structural pattern that differs markedly to the U.S. "world venture capitalist" model. Emerging market economies (EME) typically exhibit a "short equity, long debt" portfolio composition. On the liability side, these economies rely heavily on high-yield FDI and portfolio equity, which closely links the returns paid to foreign investors to domestic economic performance. On the asset side, however, EME primarily accumulate low-yielding foreign exchange reserves and debt instruments (Alfaro et al., 2021; Matsumoto, 2022). This asymmetric asset–liability structure generates a persistent negative return differential for emerging markets. This structural drain on primary income illustrates how adverse yield differentials can amplify external vulnerabilities during periods of global financial stress (Cubeddu et al., 2023; Rey, 2013). Consistent with this argument, Joyce (2021) finds that the investment income deficit in emerging markets has widened as a result of the growing importance of FDI liabilities.

A more granular analysis focuses on yield differentials within specific investment categories. Research indicates that even within the same category of investment, returns on assets and liabilities are rarely symmetric. For instance, in the context of FDI, Curcuru, Thomas, and Warnock (2013) demonstrate a persistent and substantial yield premium on U.S. outward FDI relative to inward FDI, driven primarily by the higher profitability of U.S. foreign affiliates, rather than by capital gains. Calculations by Darvas and Hüttl (2017) confirm that the primary source of the U.S. yield advantage is the superior return on outward FDI assets relative to FDI liabilities. Colacelli et al. (2021) show that Japan's persistent current account surplus is largely sustained by an expanding primary income balance, fueled by high rates of return on outward FDI and a structurally low stock of FDI liabilities. These findings suggest that superior FDI returns are not unique to the U.S., as Japan's experience reflects a broader pattern of high-yielding foreign assets in certain advanced economies. By contrast, Darvas and Hüttl (2017) find that most European countries earn only average market returns on their foreign investments. However, Knetsch and Nagengast (2017) offer a more detailed perspective on income from Germany's foreign investment position, showing that Germany's foreign assets have generated significantly higher returns in recent years. According to their decomposition framework, this shift was driven particularly by favourable structural developments in outward equity FDI and long-term debt securities.

Habib (2010) examined differential returns on gross foreign assets and liabilities for a panel of 49 countries over the period 1981-2007 and found that excess investment income yields are positively associated with country risk ratings; that is, countries with better risk ratings tend to record more favourable investment income balances. Recent literature suggests that recorded yield gaps may also reflect non-economic factors. Zucman (2013) and Vicard (2023)

demonstrate that tax-motivated profit shifting by MNEs can artificially depress recorded yields on liabilities in high-tax jurisdictions while inflating them in tax havens. Such transfer pricing strategies can significantly distort the primary income account of the balance of payments, complicating the assessment of true economic returns. Bosworth et al. (2007) estimate that approximately one-third of the excess returns earned by U.S. foreign direct investment can be attributed to profit shifting arising from differences in national tax rates. Empirical evidence from EU member states confirms that aggressive tax planning and offshore financial center structures significantly distort investment income balances, creating a measurable divergence between tax-aggressive jurisdictions and the rest of the EU (Van Limbergen, 2020). As Lane and Milesi-Ferretti (2005) note, the massive expansion of gross positions means that even marginal shifts in these yield differentials can have a sizable impact on national income. This observation is consistent with Obstfeld (2012), who argues that in a world characterized by large gross external positions, valuation changes and return differentials can have macroeconomic effects comparable to those traditionally associated with trade imbalances.

Building on these insights, this paper evaluates whether Poland's persistent primary income deficit is driven primarily by the composition of its external balance sheet or by differences in asset-specific yields. The following section describes the methodology and data preparation.

3. Research methods

The empirical analysis is designed to examine the relationship between Poland's NIIP and the investment income balance, as well as to identify the structural drivers of the persistent income deficit. The study covers the period 2010–2025, utilizing annual data sourced from Eurostat.

To test the transmission efficiency between the stock of net external assets and the flow of investment income, a simple linear regression model was estimated. The model takes the following form:

$$IIB_{(t+1)} = \alpha + \beta(\Delta NIIP_t) + \varepsilon_t$$

where:

$IIB(t + 1)$ is Investment Income Balance as percentage of GDP in period $t+1$,

$\Delta NIIP_t$ represents the annual change in the NIIP as a percentage of GDP in period t ,

β measures the reactivity of the investment income balance to changes in the NIIP,

ε_t denotes the error term.

The one-period lag was introduced to account for the time required for changes in the stock of assets and liabilities to manifest in realized income flows.

To identify the source of the yield gap, implicit annual yields were calculated. The implicit yield (i_t) for a given investment category in year t is defined as:

$$i_t = \frac{Income\ Flow_t}{Stock_{t-1}}$$

The yield is calculated as the ratio of the investment income flow (debit or credit) in year t to the stock of the corresponding assets or liabilities at the end of the preceding year $t-1$, which reflects the capital base available at the beginning of year t .

These implicit yields were calculated for total assets and liabilities, as well as for each functional category. Furthermore, external assets and liabilities were aggregated into two broader asset classes: equity instruments and debt instruments. Equity yields represent the weighted average of FDI and portfolio equity yields for assets and liabilities, respectively. Debt yields represent the weighted average of portfolio debt and other investment yields for liabilities, and the weighted average of portfolio debt, other investment, and official reserve asset yields for assets.

Finally, the yield differential (spread) was calculated to measure the efficiency gap between the return on assets and the cost of liabilities within each functional category:

$$Spread_t = i_{A,t} - i_{L,t}$$

where:

$i_{A,t}$ represents the implicit yield on assets in year t ,

$i_{L,t}$ represents the implicit yield on liabilities in year t .

4. Results and discussion

Throughout the analyzed period, Poland maintained its status as a net debtor. In 2013, the negative NIIP peaked at 70% of GDP; since then, it has undergone significant consolidation, improving to -29.8% by the end of 2025. This substantial strengthening over the last decade is largely attributed to the deleveraging of the private sector and the dynamic accumulation of official reserve assets (NBP, 2024).

Consistent with its net debtor status, Poland has recorded a persistent net investment income deficit. This imbalance intensified between 2010 and 2016, peaking at 5% of GDP, before moderating to 3.7% in subsequent years. While the improvement in the NIIP is evident, the net investment income has recovered at a notably slower pace. The analysis reveals a weak positive correlation ($r = 0.31$), suggesting that the relationship between the country's net stock position and its flow of investment income is tenuous.

The results of the linear regression model estimation fully support the hypothesis regarding the lack of an effective transmission between the improvement of the NIIP and the investment income balance. The estimated coefficient for the explanatory variable was only 0.032,

implying that a 1 percentage point improvement in NIIP (as % of GDP) results in a mere 0.03 percentage point increase in the investment income balance. Such low reactivity, combined with a lack of statistical significance ($p\text{-value} = 0.27$), suggests that the process of reducing Poland's negative net external position does not serve as an efficient tool for improving the current account balance in the income category. The structural nature of the income deficit is further evidenced by an estimated underlying deficit of -4.4% of GDP, which appears to remain unaffected by nominal changes in the stock of foreign assets and liabilities (Table 1).

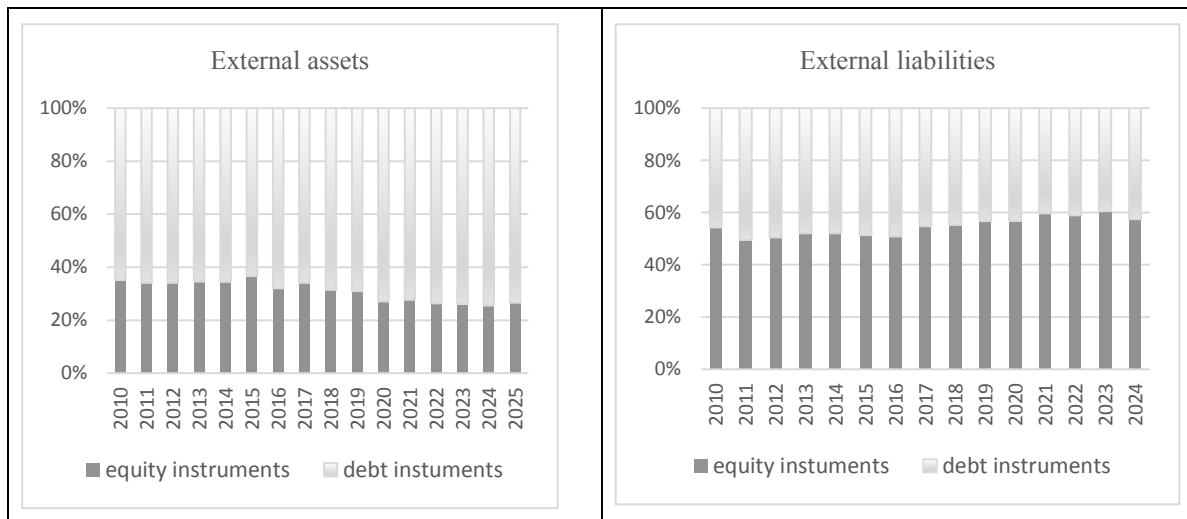
Table 1.

Regression analysis results: Impact of ΔNIIP on Investment Income Balance (%GDP)

Variable / Statistic	Value
Coefficient	0.032
Constant	-4.425
R-squared	0.098
Correlation Coefficient	0.313
P-value	0.275
Number of observations	14

Source: own calculations based on Eurostat data: <https://ec.europa.eu/eurostat/databrowser>.

A comparative analysis of the external balance sheet structure reveals a profound asymmetry between assets and liabilities (Figure 1). While Poland's assets are heavily tilted toward debt instruments—accounting for approximately 70% of the total and largely dominated by official reserves which constitute around 40% of total assets—its liabilities exhibit a much higher concentration of equity instruments, fluctuating between 48% and 58% throughout the analyzed period, mainly in the form of FDI.



Note: Equity instruments equal to portfolio equity securities plus FDI; and debt instruments equals to portfolio debt securities plus other investments plus reserve assets.

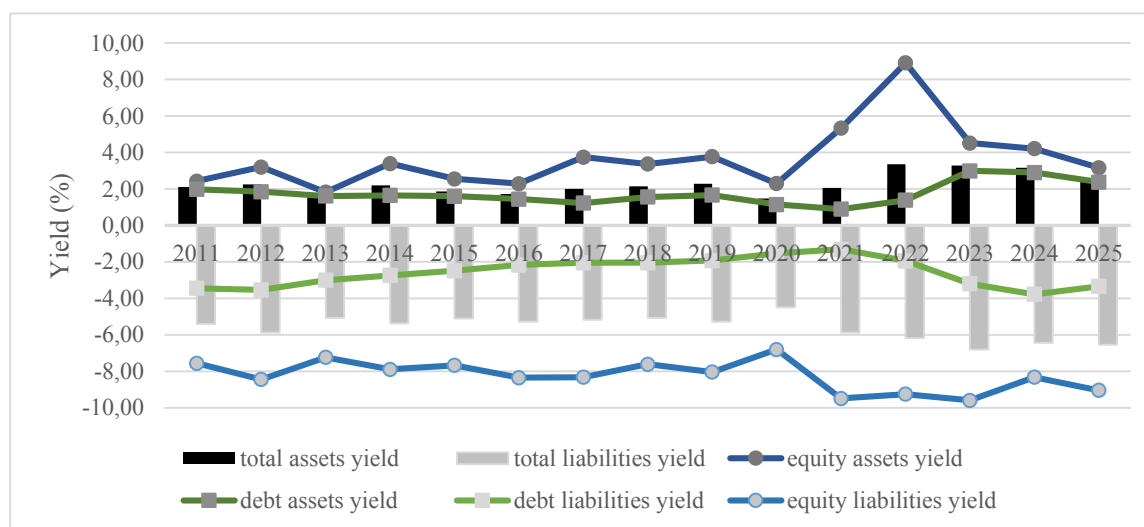
Figure 1. Structure of Poland's external assets and liabilities: equity vs. debt (%).

Source: own calculations based on Eurostat data: <https://ec.europa.eu/eurostat/databrowser>.

The comparison of implicit yields reveals a stark and persistent yield gap between Poland's external assets and liabilities (Figure 2). While the total return on assets remained subdued (averaging 1.5-2.5%), the total return on liabilities was significantly higher, consistently

exceeding 5.5%. This disparity is primarily driven by equity investments. Foreign equity capital invested in Poland yielded substantial returns, often surpassing 8%, standing in sharp contrast to the lower costs of servicing debt instruments (1.8-3.8%). On the asset side, equity investments were also more profitable than debt, although the spread between these two asset classes was surprisingly narrow, taking into consideration that a significant portion of debt instruments consists of official reserve assets that prioritize liquidity and security over high returns.

A detailed examination of intra-category yield differentials further illuminates this structural disadvantage (Figure 3). The "efficiency gap" is most pronounced in the FDI component, where the yield on liabilities exceeded that on assets by 4.2 to 6.9 percentage points (closing significantly only in 2022). This gap is largely attributable to investment maturity: foreign capital in Poland represents established, highly profitable projects, whereas Polish outward FDI is often in its nascent stages (NBP, 2025). Similarly, within other investments, yields paid to non-residents consistently exceed those earned by residents abroad throughout the 2011-2025 period, although this specific yield gap remained smaller. The underperformance was most severe in the later years, reaching its lowest point at -1.9 % before slightly moderating toward the end of the horizon.



Note: Yields on liabilities are presented with a negative sign for illustrative purposes to highlight the spread between investment returns and servicing costs.

Figure 2. Implicit yields on Poland's external assets and liabilities: equity vs. debt (%)

Source: own calculations based on Eurostat data: <https://ec.europa.eu/eurostat/databrowser>.

Yield differentials in both equity and debt portfolios reveal alternating periods in which either domestic or foreign investments were relatively more profitable. Negative gaps dominated the initial years and the final downturn in 2025, indicating periods when foreign investments outperformed Polish ones. Conversely, positive gaps in the middle of the horizon mark periods of higher profitability for Polish assets. While debt maintained more stable returns, the equity portfolio reached a higher peak of domestic profitability (1.69) but also suffered a significantly deeper underperformance abroad (-3.03 vs. -1.30 for debt).

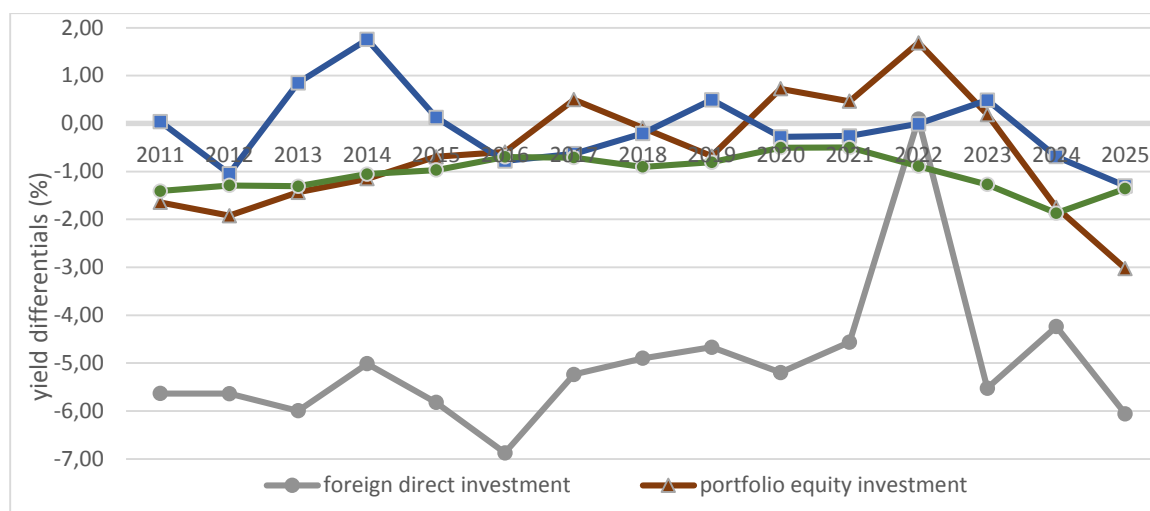


Figure 3. Asset–liability yield differentials by functional category (%).

Source: own calculations based on Eurostat data: <https://ec.europa.eu/eurostat/databrowser>.

The empirical findings presented above carry significant implications for understanding the structural features of Poland's external balance sheet and directly address the core research question. The observed lack of reactivity in the linear regression model confirms that Poland experiences a decoupling of external stocks and flows. This phenomenon aligns with the literature, which argues that investment income balances are not mechanically determined by net stock positions alone (Gourinchas, Rey, 2007; Habib, 2010; Lane, Milesi-Ferretti, 2007). In line with Behar (2025), these results confirm that a nominal reduction in external liabilities does not automatically translate into a proportional reduction in debt-servicing flows if underlying structural asymmetries are left unaddressed.

The primary driver of this decoupling is the structural asset-liability mismatch. Unlike major advanced international currency issuers such as the U.S., Japan, or Switzerland, which enjoy a positive yield privilege by issuing low-yield debt liabilities and holding high-yield foreign equity assets (Habib, 2010; Higgins et al., 2006), Poland exhibits the exact opposite portfolio composition. As conceptualized by Lane and Milesi-Ferretti (2007) for catching-up economies, Poland acts as a net equity debtor and a net debt creditor. This short equity, long debt portfolio composition locks a vast portion of domestic foreign assets into safe, low-yield instruments—such as official reserves that prioritize liquidity and security—while paying high risk and liquidity premiums on foreign liabilities (Joyce, 2021).

Beyond the composition effect, the discussion must account for the persistent intra-category efficiency gap, particularly within the FDI sector. Following the mechanisms identified by Gourinchas and Rey (2007) as well as Darvas and Hüttl (2017), the Polish data confirms that the return differential is heavily skewed against the domestic economy. While Curcuru et al. (2013) documented a persistent outward FDI yield premium for advanced economies due to highly competitive multinational firms, the sign of this efficiency gap is reversed in Poland. This reversal occurs because the domestic economy acts primarily as a host country for highly

efficient, mature foreign multinational enterprises, whereas Polish outward investments are often in their nascent, lower-yielding stages (NBP, 2025).

In summary, intra-category yield gaps, combined with the previously discussed composition effect, create a "double disadvantage" on the Poland's investment income balance, explaining why a nominal improvement in the NIIP fails to achieve a corresponding correction in net investment income flows. This confirms that the deficit is an inherent characteristic of Poland's position as a net importer of high-productivity capital (Gourinchas, Rey, 2007).

5. Conclusions

The empirical evidence presented in this study confirms that Poland's net investment income deficit is a deeply structural phenomenon. While the significant consolidation of the NIIP since 2013 has reduced the economy's external vulnerability, its impact on the primary income account has been largely neutralized by a persistent negative yield gap. This gap operates through two mutually reinforcing channels: the composition effect and the return effect.

On the one hand, the composition effect ensures that Poland's external liabilities are heavily dominated by expensive equity instruments, while its assets remain skewed toward low-yield liquid reserves. On the other hand, the return effect—most visible within the FDI sector—reveals that foreign capital operating in Poland achieves profitability levels that far exceed those of Polish investments abroad. This "double disadvantage" suggests that even a balanced international investment position might not be sufficient to eliminate the income deficit, as the yield spread remains fundamentally stacked against domestic residents.

In conclusion, the primary income deficit is not merely the result of the economy's reliance on foreign capital, but is also a consequence of Poland's integration into the global financial system as a net importer of high-productivity capital and a provider of low-yield global liquidity. These findings have profound implications for Poland's long-term current account sustainability, suggesting that future policy measures must shift their focus from nominal debt reduction toward enhancing the return efficiency of domestic assets abroad and upgrading the country's position in global value chains. An important direction for future research would be to examine the factors underlying the persistently higher returns on Poland's FDI liabilities relative to its outward FDI assets.

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