Influence of Financialization on Real Investment in the Swedish Non-Financial Sector: An Empirical Analysis

Ivan Rozmainsky

Corresponding Author

National Research University Higher School of Economics

Saint Petersburg

Russia

irozmainskij@hse.ru

Semyon Zabrodin

National Research University Higher School of Economics

Saint Petersburg

Russia

svzabrodin@edu.hse.ru

Received: 29 August 2021; Accepted: 3 November 2025

Abstract: *This study estimates the impact of financialization on investment in the non-financial sector in Sweden, using data from the Thomson Reuters database for the period 2000–2019. Financial income and financial payments are used as proxies for financialization. We find robust evidence of a negative effect of increasing financial income on the physical investment of Swedish non-financial companies. Paradoxically, no significant evidence is found for a negative influence of financial payments on physical investment. This may be related to factors such as the relatively low level of such payments, the general tendency of Swedish firms to buy securities rather than issue financial instruments, and the overall "financial health" of these firms.*

Keywords: *financialization, investment, firm data, non-financial companies, Sweden*

JEL Codes: *C23, D22, E22, G30*

The authors are grateful to two anonymous referees for their helpful comments and suggestions on the early version of this paper. The usual disclaimers apply.

This study examines the impact of financialization on the real investment of non-financial firms in Sweden. Over the past few decades, many countries have experienced a decline or stagnation in investments in physical capital, which has negatively affected economic growth. One theory attributes this trend to financialization, defined as the increasing engagement of non-financial companies in financial markets.

Using financial income and financial payments as proxies for financialization, this paper tests the hypothesis of a negative impact of financialization on the real investment of non-financial companies in Sweden over the period 2000–2019. Swedish GDP and the operating income of non-financial companies have, in fact, been stagnating over the last fifteen years, which may be explained by financialization.

Sweden ranks among the top 10 countries in the Eurozone in terms of GDP and is also one of the top 10 countries in Europe in terms of GDP per capita. The Swedish type of capitalism, the so-called Swedish model, is a distinctive form of capitalism, differing significantly from Anglo-American or German varieties (Eklund, 2007; Ryner, 2002). For a long time, "export-led growth, central wage bargaining, rationalising investment policies, and commitment to full employment and redistribution through a decommodifying and universal welfare state" were key features of the Swedish model (Belfrage and Kallifatides, 2018, p. 882). It is worth examining whether financialization has the potential to influence or transform these characteristics. The results of such an analysis can contribute to a deeper understanding of financialization processes in general, and in countries beyond the US and the UK in particular.

The choice of the 2000–2019 period is motivated by several factors. On the one hand, the pandemic years were excluded due to their exceptional nature. On the other hand, the analysis does not begin before 2000 because significant institutional changes occurred in Sweden around that time. Specifically, in 1998, a new public pension system, characterized by welfare retrenchment and risk privatization, was introduced (Belfrage and Kallifatides, 2018, pp. 888–889). In 2004, the Swedish Corporate Governance Code was revised (Dent, 2012), reinforcing shareholder primacy. The former reform increased the involvement of workers and pensioners in financial markets, while the latter may have fostered a shift toward shareholder value orientation, an essential component of financialization. As a result, the institutional context in 21st-century Sweden differs, to some extent, from that of the 20th century.

The structure of this paper is as follows. We begin with a description of the model on which the research hypotheses are based. Next, we review previous related studies. This is followed by a presentation of the data and empirical evidence concerning the stagnation of real investment among non-financial companies in Sweden. We then conduct an econometric analysis and compare our results with those currently available in the literature. Finally, the paper concludes with a summary of the findings.

1. Literature overview

1. 1. Definitions of financialization

In many studies on financialization, authors point out that there is no single, universally accepted concept of the phenomenon. Moreover, financialization is often understood more as a "collection of processes" than as a distinct, standalone process. This is reflected in the definition provided by Engelbert Stockhammer (2010, p. 3), perhaps the most frequently cited researcher on financialization, who writes: "the term has been used to encompass phenomena as diverse as shareholder value orientation, increasing household debt, changes in attitudes of individuals, increasing income from financial activities, increasing frequency of financial crises, and increasing international capital mobility." However, many researchers refer to the definition offered by Gerald Epstein (2000, p. 3): "financialization refers to the increasing importance of financial markets, financial motives, financial actors and financial institutions in the operation of the domestic and international economies." A somewhat more specific definition is provided by Greta Krippner (2005, p. 174): "I define financialization as a particular pattern of accumulation in which profit-making occurs increasingly through financial channels, rather than through trade and commodity production."

In our study, we understand financialization as the tendency of firms to generate financial income. This definition also implies an increasing reliance on financial markets to fund corporate activities, since, where there is a buyer of a financial asset, there must also be a seller. Thus, we define financialization as the growing engagement of non-financial firms in financial markets.

The definitions by Epstein and Stockhammer offer a broader conceptualization. The increased activity of firms in financial markets is undoubtedly driven by the globalization of these markets, as well as the rising influence of financial motives, largely shaped by financial elites. Therefore, although our study adopts a narrower definition of financialization (i.e., increased financial market activity by non-financial firms), the broader definitions by Epstein and Stockhammer remain closely related and are relevant to the context of this research. In addition to the general understanding of financialization, Krippner's formulation aligns well with the proxies used in this study, namely, financial income and financial payments. All of these definitions echo the famous reflections of John Maynard Keynes (1936, p. 159) on the displacement of "entrepreneurship" by "speculation": "Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done."

1. 2. Analysis of financialization by Stockhammer

As mentioned earlier, Stockhammer is one of the most cited researchers in the field of financialization. In his well-known paper (Stockhammer, 2004), he raised the issue of declining investment in real capital during the 1960s–1990s across a number of developed countries. His central argument is that the globalization of financial markets led firms to shift from real to financial investments. Since the late 1970s, firms in many countries have indeed increased their activity in financial markets. However, from the standpoint of neoclassical economic theory, the buying and selling of securities is viewed merely as a reallocation of financial resources. Stockhammer, by contrast, explains this shift through the phenomenon of the "shareholder revolution."

In small companies, management is typically concentrated in the hands of the owner, who also participates in day-to-day decision-making. However, in large companies, ownership lies with shareholders, and control is exercised by professional managers. These two groups of actors often have divergent interests.

The key issue is that shareholders tend to undervalue long-term investments. They typically seek to maximize profits as quickly as possible. If real investments cannot deliver the desired short-term returns, shareholders may favor financial investments instead.

But if shareholders are motivated by profit, what drives managers? This group is generally seen as having an interest in the growth of the firm. First, firm growth, ceteris paribus, strengthens the company's position in the market and lowers the risk of being acquired or displaced by stronger competitors (thus reducing future uncertainty). Second, growth expands the managerial scope of influence and internal power within the firm.

Therefore, the phenomenon of the "shareholder revolution" brings us to the trade-off between profit and growth. Neoclassical investment theory has been criticized for neglecting the internal goals and dynamics of corporate actors, particularly managers. Drawing on post-Keynesian theory of the firm, first systematized by Marc Lavoie in his 1992 book, Stockhammer (2004) proposed a model that reflects this growth–profit trade-off. Let us now briefly describe it.

Assume there are two players: owners (shareholders) and managers. For simplicity, let us assume that managers are only interested in growth, while shareholders are only interested in profit. Then the utility functions are as follows:

$$U_M = U(g)$$

$$U_O = U(r),$$

where g denotes growth (investment), and r denotes profitability. Available financial resources can be allocated to enhance either of these indicators. Additionally, firms can borrow funds. For simplicity, we assume that banks provide loans only to profitable firms, and the loan amount is proportional to the firm's profitability. This gives us the function g_{FC}, which represents the total funds a firm can obtain for investment by combining its own income with borrowed funds. In this way, we introduce a financial constraint.

Finance constraint: $g_{FC} \leq g(r),$ where $g' > 0$

The purpose of this function is to show the level of profitability that must be maintained in order to achieve a certain rate of growth. Higher profitability implies greater opportunities for growth, as it provides both more internal funds and increased access to external financing from banks.

According to the post-Keynesian theory of the firm, there is another constraint, primarily associated with the so-called Penrose effect. Excessive growth forces company managers either to expand their responsibilities or to hire new managerial staff. This leads to a reduction in the effectiveness of existing managers and an increase in operational costs. There is also another explanation for the potential decline in profitability associated with rapid growth. Typically, rapid expansion involves entering new markets. In addition to the increased management costs mentioned above, the firm must often engage in intense competition with established market players, which may require deliberately setting low prices and making substantial investments in advertising.

The profit-growth trade-off: $r_{RG} = r(g)$, where $r'<0$

Technically, each point on the "constraint" curve represents the maximum profit that can be achieved at a given rate of growth.

Having plotted both the constraints and the preferences of the participants, we arrive at the following picture:

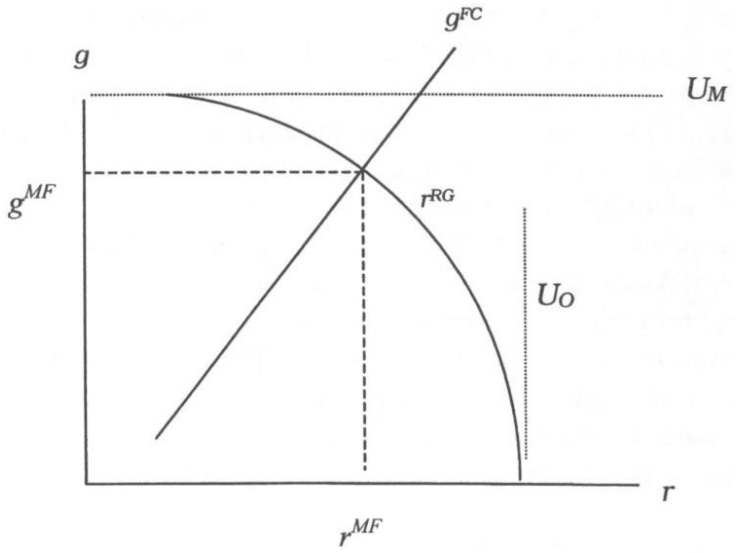

Figure 1. Preferences and constraints in a managerial firm.

Source: (Stockhammer, 2004)

Managers have more information about the internal operations of the company, giving them an advantage in decision-making. According to the assumptions of the model, since managers prioritize company growth, the point (g^{MF}, r^{MF}) will be chosen. Points to the left of the constraint curve are unattainable, as they imply insufficient profitability, meaning banks will not provide loans, and internal funds will be too limited. Points to the right represent lower levels of growth.

What changed after the late 1970s? Once shareholders gained more influence over corporate decision-making, they began to exert pressure on managerial compensation and performance evaluation systems. First, managerial salaries became directly tied to company profitability, creating a new incentive for managers to prioritize profits. Second, managerial performance began to be assessed primarily through financial indicators. In an effort to retain their positions, managers increasingly conformed to shareholder interests.

In the diagram, this shift will appear as a change in the slope of the managers' preference function.

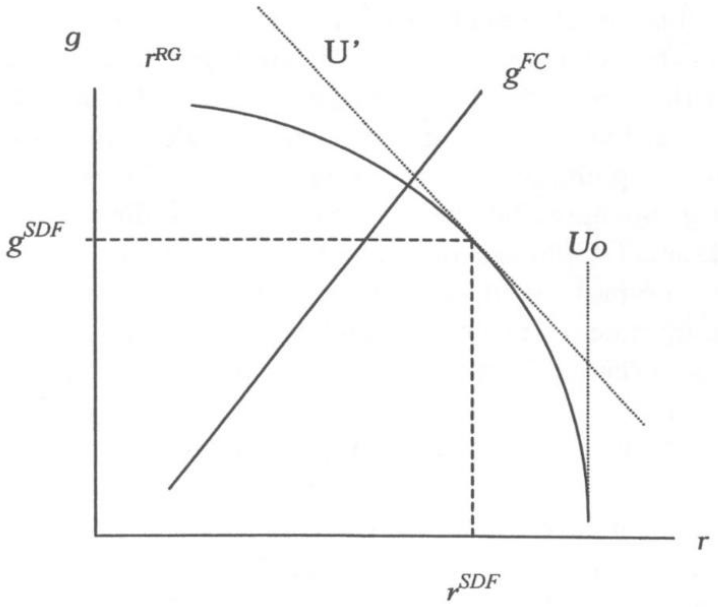

Figure 2. Preferences and constraints in the shareholder-dominated firm

Source: (Stockhammer, 2004)

Now, both indicators, profitability and growth, are part of the managers' preference function. The new equilibrium will lie somewhere between the previous growth-focused choice and the point that maximizes profit. As a result, growth opportunities are no longer being fully exploited.

In this context, interest and dividend income will be used as proxies for financialization, and therefore as proxies for the influence of shareholders on company decision-making. According to the hypothesis, high levels of these indicators will be associated with firms where profitability is prioritized over growth.

The research is based on accounting data from non-financial companies in four countries: France, the UK, Germany, and the USA.

The model specification is as follows:

$$ACCU_t = \beta_0 + \beta_1 ACCU_{t-1} + \beta_{11} ACCU_{t-2} + \beta_2 CAPUT_{t-1} + \beta_4 PS_{t-1} + \beta_6 CC_{t-1} + \beta_6 RSNF_{t-1} + \varepsilon_t \quad (1)$$

ACCU represents gross investment growth (lagged values are used to correct for autocorrelation), CAPUT denotes capital productivity, PS is return on equity, and CC is a measure of the cost of capital. RSNF, defined as interest and dividend income divided by the company's value added, serves as the indicator of financialization, as previously discussed. All variables are included with a lag. The author applies a Partial Adjustment Model

(PAM), an Autoregressive Distributed Lag Model (ADL), and a modified version of PAM, the so-called "model with growth", which uses GDP growth in place of CAPUT.

A summary of the regression results is presented in the following table:

Table 1. Ratios for firms from different countries according to Stockhammer's paper

Source: (Stockhammer, 2004)

Coefficient on RSNF\Country	France	Germany	The UK	The US
ADL model	-0.31	0.36	-0.16	-0.3
PAM model	-0.21	0.13	-0.22	-0.37
Model with growth	-0.32	-0.22	-0.04	-0.22

As we can see, in most cases, the coefficient on RSNF is negative. For the United States, the coefficient is negative and statistically significant in all three model specifications. For the UK, it is consistently negative but statistically significant in only one case. A similar pattern is observed for France. In contrast, for Germany, the coefficient is positive in all specifications, though it is never statistically significant. Interestingly, this result aligns with Stockhammer's suggestion that the shareholder revolution in Germany occurred much later (based on data from the 1960s to the 1990s).

Thus, Stockhammer left room for future research, as the results of his analysis varied significantly across countries. In this context, it is also worth mentioning his 2011 paper co-authored with Özlem Onaran and Lucas Grafl, in which the negative impact of financialization on aggregate demand was analyzed using macroeconomic data for the United States. In that study, the authors estimated the effects of increases in rentier income (dividends and interest payments), as well as housing and financial wealth, on consumption and investment. A somewhat similar approach was employed by Till van Treeck (2008), who estimated an investment function with financial variables using an autoregressive distributed lag methodology. He aimed to explain the declining rates of capital accumulation, despite rising profit shares and rates, in some OECD countries, particularly the US, by suggesting a high propensity to consume out of capital income.

1. 3. Other studies of financialization in various countries

In 2018, Daniele Tori and Özlem Onaran reproduced and further developed Stockhammer's research, focusing specifically on British firms. A key feature of their study, and one particularly relevant to our research, is its microeconomic perspective. The authors used data on non-financial companies from the Worldscope database, covering the period 1985–2013. According to their findings, financialization leads firms to prioritize financial income over real investments, which ultimately contributes to a decline in economic growth.

The model proposed by Tori and Onaran is grounded in post-Keynesian theory and builds on the earlier work of Stephen Fazzari and Tracy Mott (1986), who studied the determinants of investment demand among U.S. firms. Analyzing data from 1970 to 1982, Fazzari and Mott identified the following relationship:

$$I^* = I(u, \frac{F_I}{P_S}, CC) \tag{2}$$

Here, u denotes the degree of capacity utilization, F_I is the volume of internal cash flow available for investment, Ps represents the supply price of investment, and CC refers to various financial obligations. This model highlights the relationship between liabilities, internal finance, and investment.

Tori and Onaran's research is particularly valuable in how it modifies this framework. First, they use not only financial income as a proxy for financialization, but also financial payments, interpreted as an indicator of the intensity with which shareholders extract value from the firm. Second, and importantly, they introduce an interaction term between a dummy variable identifying small firms and financial income. The aim is to test whether the effect of financialization differs for small companies. According to their hypothesis, the effect should be positive for small firms, as these are generally not yet "shareholder-dominated" and, in theory, are still growth-oriented. An additional, and perhaps even more significant, insight is that increasing financial income may alleviate liquidity constraints faced by small firms (Tori and Onaran, 2018, p. 1399). The full regression specification is as follows:

$$\left(\frac{I}{K}\right)_{it} = \beta_0 + \beta_1 \sum_{j=1}^{2} \left(\frac{I}{K}\right)_{it-j} + \beta_2 \sum_{j=1}^{2} \left(\frac{\Pi - CD}{K}\right)_{it-j} + \beta_3 \sum_{j=1}^{2} \left(\frac{S}{K}\right)_{it-j} + \beta_4 \sum_{j=1}^{2} \left(\frac{F}{K}\right)_{it-j} + \beta_5 \sum_{j=1}^{2} \left(\frac{\pi_f}{K}\right)_{it-j} + \beta_6 \sum_{j=1}^{2} \left(\frac{\pi_f}{K} \bullet D_{25}\right)_{it-j} + \beta_7 D_{25it-j} + \beta_t + \varepsilon_{it}\,, \tag{3}$$

where I represents gross additions to fixed assets, Π is operating income, and CD denotes cash dividends (so Π minus CD represents retained earnings), S is net sales, F is the sum of interest and dividend payments (used as a measure of the firm's financial obligations), and π_f is the amount of financial and interest income. All variables are lagged by two periods, reflecting the dynamic nature of investment behavior. Lagged values of the explanatory variables are also included to account for autocorrelation. Both the dependent variable and the regressors are divided by K – the firm's net capital stock. To estimate the coefficients, the difference-GMM estimator is used.

The regression results show that the coefficient on financial income is consistently negative and statistically significant at the 10% level or better. The coefficient on financial payments is negative and significant at all conventional levels. The coefficient on the firm-size dummy is positive and significant. Importantly, the interaction effect, capturing the impact of financial income on small firms, is positive. These results fully confirm the study's hypothesis.

Additionally, the authors examined whether the effect varied before the 2008 financial crisis and over the full sample period. The impact was found to be stronger before the crisis than across the full sample. Furthermore,

the effect on the manufacturing sector was approximately twice as large as the average effect across all sectors (Tori and Onaran, 2018). A nearly identical result was obtained using the same methodology for Russian non-financial publicly listed companies over the period 1999–2019, in a study by Dmitry Tretyakov and Ivan Rozmainsky (2021). They found that financial expenses reduce real investment, and financial income exhibits a crowding-out effect for large firms. In such firms, financial income, as a form of additional "free" funds, is not perceived as an opportunity to accumulate fixed assets. In contrast, in small and medium-sized enterprises, financial income tends to encourage physical investment.

Daniele Tori and Özlem Onaran (2020) applied a very similar methodology to analyze the effects of financialization on physical investment, using data from 1995–2015 for the UK and thirteen Continental European countries (including Sweden). Among other aspects, the study examined the relationship between increased financial development and the effects of financial income and payments on real investment. The authors found that a higher degree of financial development is associated with a stronger negative effect of financial income on investment. Importantly, this study provides the first microeconometric evidence, based on firm-level balance sheet data, for a large sample of European non-financial companies on how rising financialization affects investment. The main finding is that both financial payments and financial income have adverse effects on investment in fixed assets. Moreover, the negative effect of increasing financial income is non-linear with respect to company size: it crowds out investment in large firms but has a positive impact on investment by relatively smaller firms.

A similar result was reported in a study by Özgür Orhangazi (2008), based on a sample of non-financial U.S. firms from 1973 to 2003. He found that interest and dividend income had a positive (though statistically insignificant) effect on physical investment in small firms, and a negative (and statistically significant) effect in large firms. Like the results of Tori and Onaran, Orhangazi's findings are consistent with the Stockhammer model. However, the empirical claim of rising financial engagement by non-financial firms has been challenged. Joel Rabinovich (2019), using data from U.S. firms, showed that financial income has averaged only about 2.5% of total income for North American non-financial corporations since the 1980s. He observed that this share oscillated from the early 1990s until 2005 and then declined. Similar findings are reported in a paper by Matthew Soener (2021), who analyzed data from publicly traded corporations in the 37 largest economies between 1991 and 2017. Soener suggests that financialization in the non-financial sector may be closely linked to structural changes in the global production process.

Analyzing a sample of U.S. non-financial firms over a similar period, Donald Tomaskovic-Devey, Ken-Hou Lin, and Nathan Meyers (2015) showed that the greater the monetary value of a firm's financial assets, the lower its level of real investment. In an effort to build a highly heterogeneous sample, Jason Hecht (2014) collected data on non-financial firms from China, France, the United Kingdom, India, the United States, Germany, and Japan. While excluding certain countries naturally affected the results, the "interest income" variable consistently showed a significant negative effect on physical investment across the full sample. The impact of other financialization proxies, however, was less significant.

Another large-scale and noteworthy study using U.S. data is the work by Leila Davis (2018), who examined American firms from 1971 to 2013. She argued that changes in investment behavior are closely linked to

financial decision-making, and that financial behavior itself is shaped by evolving corporate governance norms and increasing volatility. The analysis reveals differences by firm size: shareholder value pressures more strongly influence the investment behavior of large firms, while rising volatility disproportionately affects smaller firms. However, the study does not account for the specific types of financial activities firms engage in, a factor that is not always easy to capture. Interestingly, Davis finds that the accumulation of financial assets has, on average, a positive effect on investment activity.

A study focused solely on the UK is the paper by Constantinos Alexiou and Joseph Nellis (2016), which examines the period from 1971 to 2012. The authors demonstrate that investment is driven by industrial profits, which declined over the period as a result of financialization. The investment function tested includes industry profit share, aggregate demand, and labor costs as key determinants. Using cointegration techniques and error correction modelling, the authors conclude (2016, p. 127): "...investment decisions by industry are significantly conditioned by industrial profit. Moreover, the distribution of profits between industry and finance, in conjunction with policy objectives, appears to be playing an instrumental role in affecting capital accumulation."

In the Portuguese context, an econometric study by Ricardo Paes Mamede et al. (2014) tested the hypothesis that financialization contributed to the economic shocks Portugal experienced in the 21st century. In particular, the study examined whether financialization was responsible for the decline in the investment-to-GDP ratio after 2001. According to the authors, the final two decades of the 20th century were marked by high economic growth, low interest rates for consumers and firms, and greater access to external financing. However, their analysis shows that by the 1980s–1990s, firms had become increasingly burdened by debt, part of which consisted of dividend payments. As a result, despite continued economic growth, firms reduced their real investment after 2001 in response to mounting financial obligations.

This Portuguese case was further explored by Ricardo Barradas and Sérgio Lagoa (2017), who used macroeconomic annual data from 1979 to 2013 and applied vector autoregressive (VAR) models to examine the relationship between financialization and real investment. Their findings indicate that financial payments had a long-run negative impact on real investment, while financial receipts were statistically insignificant. Notably, the study also revealed a negative relationship between profitability and investment, a phenomenon the authors describe as the "profit without investment" puzzle (Barradas & Lagoa, 2017, p. 432). Özgür Orhangazi (2019) offered a potential explanation for this puzzle by focusing on the growing importance of intangible assets in the U.S. non-financial corporate sector during the early 21st century. According to his analysis, intangible assets, such as brand names, trademarks, patents, and copyrights, enable firms to maintain market power and profitability without a corresponding increase in fixed capital investment.

In general, a decline in investment is not the only consequence attributed to financialization. Eckhard Hein (2019) argues that in several developed European countries, inappropriate macroeconomic policy within a financialized context can lead to stagnation and broader macroeconomic problems. Similarly, Stefano Battiston et al. (2018) provide empirical evidence that financialization, in addition to negatively affecting economic growth, can also increase income inequality, heighten financial instability, and hinder innovation.

The last of these effects, namely, the impact of financialization on firms' willingness to invest in innovation, has become an increasingly prominent area of research. A notable contribution in this field is the study by Hwan-Joo Seo, Han Sung Kim, and Yoo Chan Kim (2012), which examined the effects of financialization on research and development (R&D) investment by non-financial corporations in Korea from 1994 to 2009. Their findings indicate that increased dividend payments and stock buybacks reduced internal funds and shortened planning horizons, thereby negatively affecting R&D investment. Conversely, more recent research by Meri Tarverdyan and Ivan Rozmainsky (2023), using a sample of Italian publicly listed non-financial companies from 1995 to 2020, found the opposite effect. Their econometric analysis revealed a positive association between financial income and R&D expenditure. This result diverges from much of the empirical literature produced by post-Keynesian scholars. A possible explanation offered by the authors is that managerial motivation in Italy differs from that in Anglo-Saxon countries, being less influenced by shareholder value orientation and short-termism.

Overall, the results of econometric studies on financialization tend to vary significantly depending on the country context. As previously mentioned, Sweden has been relatively underrepresented in this field of research. Let us now consider how Sweden has featured in existing studies on financialization.

1. 4. Previous studies of financialization in Sweden

We begin by referencing the paper by Ricardo Barradas (2017), in which the author investigates whether the impact of financialization on real investment is positive or negative. Using a sample of firms from 27 European countries over the period 1995–2013, the study includes 450 observations, modest in size, but geographically comprehensive, covering all EU countries. In many ways, the work builds on Stockhammer's earlier study but expands it by covering a different time frame, including more countries, and introducing a second proxy for financialization, financial payments, alongside financial income. This paper is of particular interest to us because it includes data on Swedish firms. The results of the econometric analysis indicate that financialization (as captured by these variables) negatively affects investment by non-financial firms, with the effect being significantly stronger in the pre-2008 crisis period. Although it is not possible to draw definitive conclusions specifically for Sweden from these results, the findings may still offer a general reflection of trends across the Eurozone.

Swedish firms receive more focused attention in the study by Daniele Tori and Özlem Onaran (2017), which tests the hypothesis of financialization's impact on physical investment in EU countries. Their dataset is extensive, covering approximately 3,000 firms from 1995 to 2015, including 226 Swedish firms. The authors even construct a separate regression model for the Swedish subset, finding a negative and statistically significant coefficient on both financial income and financial payments. However, this analysis does not fully align with the aims of our research. First, only one model is estimated for Swedish firms, and the robustness of the findings is not tested. For the broader EU sample, by contrast, multiple model specifications are explored. Thus, while the results offer insight into general Eurozone trends, they are less conclusive for Sweden specifically. Second, the Swedish regression omits some explanatory variables we consider essential, most notably, firm size, which prior studies have shown to be a significant factor. Excluding it may introduce bias. Third, their time frame

(1995–2015) differs from ours (2000–2019), and includes a period of relatively high economic growth in Sweden. A slowdown in growth becomes noticeable only around 2005.

Eckhard Hein et al. (2017) also include Sweden in their analysis of the effects of financialization on income distribution before and after the global financial crisis. They found that in Sweden, the wage share in GDP declined from the 1990s up to the crisis. While they attempted to link this trend to financialization, they ultimately concluded that no clear connection could be established in the Swedish case.

Belfrage and Kallifatides (2018), using a Regulation Theory framework, explored the evolving relationship between financialization and the Swedish model of capitalism. They argue that, particularly since 2005, financialization in Sweden has become more pronounced. As a result, the country's model of economic development and capital accumulation has shifted from an export-led to a debt-led growth regime. "Financialisation in Sweden has thus followed a trajectory which is similar to Anglo-American developments" (Belfrage and Kallifatides, 2018, p. 895). According to the authors, this transformation is not only the result of changes in shareholder value orientation and corporate governance, but also stems from neoliberal pension reforms and policies that encouraged household debt through changes in the housing market.

In summary, although financialization in Sweden has received increasing scholarly attention, the specific issue of its potential negative effects on the physical investment of non-financial firms remains underexplored. This is the central question our study aims to address.

2. Hypotheses, regression specification, data, and stylized facts

2. 1. Generalization of the mechanism of the influence of financialization on real investment

As previously stated, our study tests the hypothesis that financialization has a negative impact on the physical investment of Swedish non-financial firms. Drawing on Stockhammer's investment theory within the post-Keynesian tradition, we argue that higher financial income signals greater shareholder influence within a firm. Since financial markets tend to prioritize short-term profits, such firms are likely to invest less in real assets. In addition, financial payments will also have a negative impact on physical investments, as they inherently reduce available finance and, like financial income, contribute to the increased power of shareholders in the company. Thus, financial payments and financial income serve as proxies for financialization in our study. We also argue that the effect of financial income will depend on the size of the firm, the smaller the firm, the less power shareholders have, which means that, according to our model, such a firm will invest more in real assets. Below, we present the hypotheses:

Hypothesis 1: Financial income and financial payments negatively affect firms' investment in real capital.

Hypothesis 2: In small firms, financial income will have a positive effect on investment in physical capital.

2. 2. Regression specification

As in previous studies, the Fazzari and Mott model is used as the basis. All variables are measured in US dollars. The equation, where the dependent variable is investment in fixed assets, is as follows:

$$ln\left(\frac{I}{K}\right)_{it} = \beta_0 + \beta_1 ln\left(\frac{I}{K}\right)_{it-1} + \beta_2\left(\frac{Re}{K}\right)_{it-1} + \beta_3 ln\left(\frac{TR}{K}\right)_{it-1} + \beta_4 ln\left(\frac{i_D}{K}\right)_{it-1} + \beta_t + \varepsilon_{it}. \quad (4)$$

As shown in many recent empirical studies, there is a relationship between investments in adjacent periods. In particular, this was noted by Philip Arestis, Ana Rosa González, and Óscar Dejuán (2012). For this reason, lagged investments are included in the equation. The other explanatory variables are also taken with a one-period lag, since, obviously, the decision to invest in period t is made based on circumstances in period t-1 (or earlier).

In addition, all variables are divided by K, the firm's capital stock, to control for company size (the main source of heteroscedasticity). The variables are expressed in logarithmic form to account for possible non-linear relationships and to reduce the influence of outliers. Since some companies reported negative operating income in certain periods, retained earnings are not transformed logarithmically.

I_{it} is the investment in fixed assets in period t by firm i. The ratio of investment to capital reflects the increase in investment. The sign of the coefficient on the lagged dependent variable generally depends on the firm's chosen strategy (i.e., it can be either positive or negative). However, based on previous empirical research, we expect this coefficient to be positive.

Re – retained earnings. This indicator expands the firm's capacity to invest; therefore, the coefficient on this variable is expected to be positive. The ratio of retained earnings to capital reflects the rate of return.

TR – total revenue. In the Fazzari and Mott model, an important variable was CAPUT, the degree of capacity utilization. Total revenue relative to capital serves as a proxy for this indicator. Since a higher value of this variable indicates greater capacity utilization, a positive effect of this regressor is expected.

i_D – Interest expenses on debt. This indicator reduces the company's available funds. Interest expenses divided by capital represent a measure of a firm's debt and are expected to negatively affect physical investment.

The variables β_t and ε_{it} capture unobservable temporal effects common to all firms and idiosyncratic shocks, respectively.

As discussed in the theoretical section, the indicator of dividend payments is interpreted (within the framework of our model) not only as a reduction in internal funds but also as a behavioral shift toward the interests of shareholders ("shareholder value orientation"). CD/K is the ratio of cash dividend payments to capital. Based on both interpretations, the coefficient on this indicator is expected to be negative. To reflect a single indicator of financial payments, we introduce the variable $F = CD + i_D$ (the expected effect is, of course, negative). Thus, F captures both financial capital outflows and possible behavioral shifts toward shareholder interests.

$$ln\left(\frac{I}{K}\right)_{it} = \beta_0 + \beta_1 ln\left(\frac{I}{K}\right)_{it-1} + \beta_2\left(\frac{Re}{K}\right)_{it-1} + \beta_3 ln\left(\frac{TR}{K}\right)_{it-1} + \beta_4 ln\left(\frac{F}{K}\right)_{it-1} + \beta_t + \varepsilon_{it} \quad (5)$$

Another indicator of financialization is financial income, i.e., inflows of funds from financial investments. This includes the company's interest and dividend income. We denote financial income as π_f:

$$ln\left(\frac{I}{K}\right)_{it} = \beta_0 + \beta_1 ln\left(\frac{I}{K}\right)_{it-1} + \beta_2\left(\frac{Re}{K}\right)_{it-1} + \beta_3 ln\left(\frac{TR}{K}\right)_{it-1} + \beta_4 ln\left(\frac{F}{K}\right)_{it-1} + \beta_5 ln\left(\frac{\pi_f}{K}\right)_{it-1} + \beta_t + \varepsilon_{it} \quad (6)$$

Intuitively, this indicator expands the firm's ability to make real investments by increasing the amount of available funds. However, in the post-Keynesian model of the firm, we interpret financial income as a proxy for shareholder power. This implies that companies with higher financial income tend to invest less in real assets. Thus, the expected effect of π_f / K on real investment is negative.

The final factor to consider in the model is the varying influence of financial income depending on firm size. As we argued earlier, shareholder power in smaller firms is likely to be weaker, or even absent, and the easing of liquidity constraints due to increased financial income is more significant for them. Therefore, such firms are expected to invest more in their own growth, including using funds from financial income. To differentiate the effect of financial income in a small firm from the general effect of being a small firm, we introduce two variables:

$$ln\left(\frac{I}{K}\right)_{it} = \beta_0 + \beta_1 ln\left(\frac{I}{K}\right)_{it-1} + \beta_2\left(\frac{Re}{K}\right)_{it-1} + \beta_3 ln\left(\frac{TR}{K}\right)_{it-1} + \beta_4 ln\left(\frac{F}{K}\right)_{it-1} + \beta_5 ln\left(\frac{\pi_f}{K}\right)_{it-1} + \beta_6 ln\left(\frac{\pi_f}{K}\right)_{it-1} \bullet D_{25} + \beta_7 D_{25} + \beta_t + \varepsilon_{it} \quad (7)$$

The dummy variable D_{25} takes the value 1 if the value of the firm's capital falls within the lower quartile of the sample, and 0 otherwise. The coefficient. The coefficient β_5 captures the effect of financial income on investment in large companies, while $\beta_5 + \beta_6$ captures the same effect in small firms. As previously mentioned, the first effect is expected to be negative, while the second is expected to be positive.

Thus, Model No. 4 represents the final specification in our analysis. It is fully consistent with the post-Keynesian theory of the firm. In addition, this model has the following three advantages (Tori and Onaran, 2018):

It emphasizes the impact of financial relations.

It distinguishes between cash flows from operating and non-operating activities.

It highlights financial outflows and inflows as determinants of future investment.

To summarize, the following table presents the variables of interest along with their expected signs (each variable is measured in US dollars):

Table 2. Expected signs of the explanatory variables' influences on current investment

Variable designation	Variable name	Expected sign
I_t	Current investment	Dependent variable
I_{t-1}	Lagged investment	+
Re_{t-1}	Retained earnings	+
TR_{t-1}	Total revenue	+
F_{t-1}	Financial payments	-
$\pi_{f\,t-1}$	Financial income	-
$\pi_{f\,t-1} \bullet D_{25}$	Financial income in small companies	+

2. 3. Data description and stylized facts

Sources of data such as revenue and asset values are sometimes available in open access. However, obtaining data on the financial income of companies is significantly more difficult. The situation is further complicated by the fact that many firms simply do not disclose their financial income, even in official reports and declarations, sometimes due to the absence of regulatory requirements to provide such data annually. As a result, this information is often unavailable. One of the largest sources for such data is the Thomson Reuters database. From there, the available (annual) data for our study were obtained.

The sample provides information on the activities of Swedish firms for the period 2000–2019. This period was selected because it captures both the tail end of the Swedish economy's recovery in the early 2000s and the subsequent recession. Furthermore, some institutional changes mentioned earlier occurred before and during the early years of this period. The number of observations varies across firms, making the sample unbalanced. Before conducting the analysis, thorough data processing was required.

The original sample (unfiltered dataset) consisted of 438 observations across 54 firms. First, it was necessary to remove firms that did not have at least three consecutive years of data. This step is also required by the chosen methodology (David Roodman, 2009). Particular attention was given to outliers, as their presence can bias the estimates. Observations in the lower 1% of the distribution for investment, operating income, and total revenue were excluded, as well as those in the lower 5% of the distribution for retained earnings and financial payments. The upper ends of the distributions did not contain significant outliers.

Data gaps were particularly challenging. For the "investment" indicator, missing values (approximately 5–7 observations) were replaced with 0. For the "financial income" indicator, missing values were only imputed when data for both the preceding and following years were available. In such cases, the missing values were filled with the arithmetic mean of the neighboring values (about 25 observations in total). This step was necessary to avoid the issue of self-selection. The final dataset contains 310 observations for 33 different firms. Descriptive statistics are presented in Appendix Table 1A.

Here are some stylized facts. The following diagrams are based, first, on the authors' own calculations (from the available sample), and second, on data from the statistics portal SCB.se, which provides detailed reports on various macroeconomic indicators.

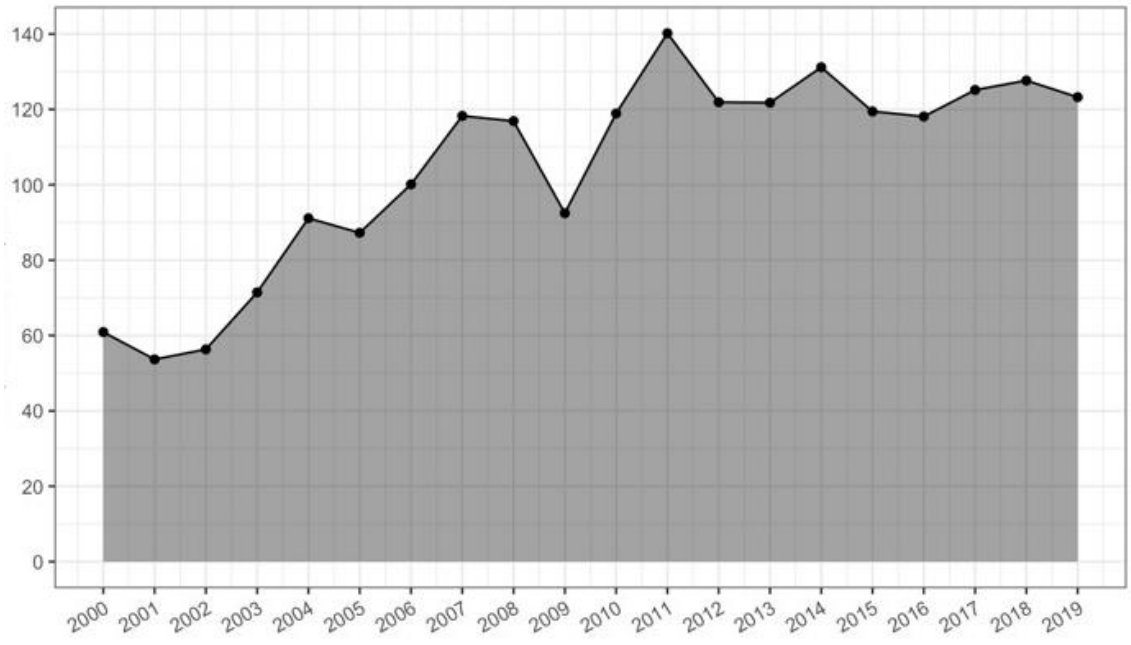

Figure 3. Operating income of Swedish non-financial companies (total, U.S. billions of dollars).

Source: SCB.se

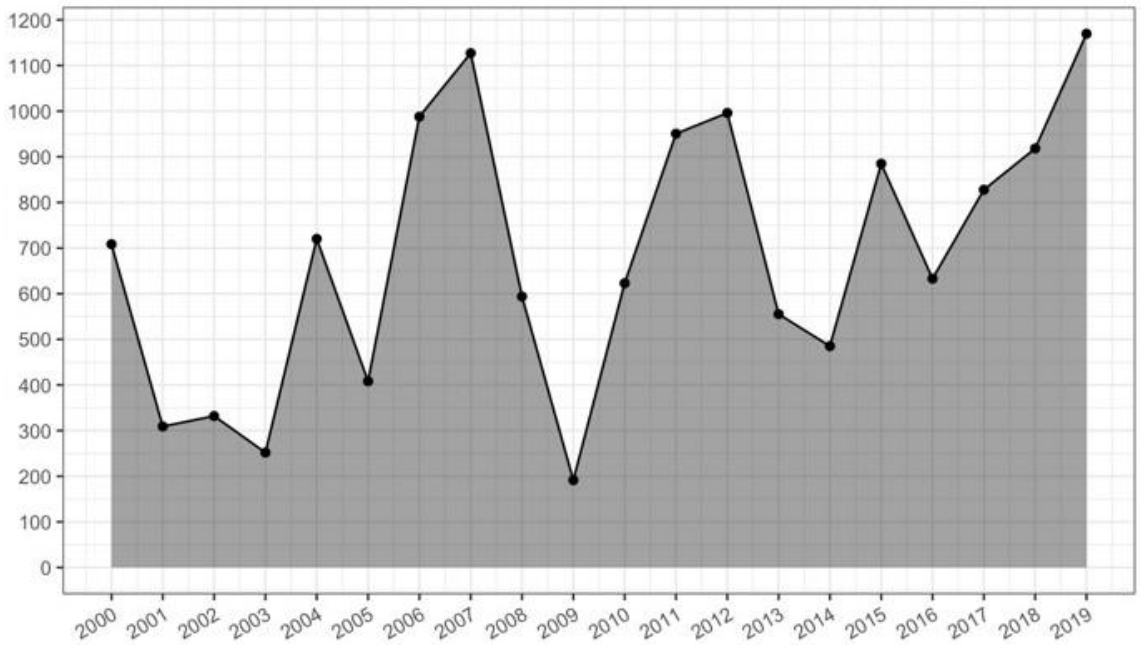

Figure 4. Operating income of Swedish non-financial companies (sample, U.S. millions of dollars).

Source: Thomson Reuters

Figure 3 shows the operating income for the entire Swedish real sector. As can be seen, profits grew from 2001 until 2007, but have stagnated since then. One possible explanation for this is financialization. Figure 4 presents the dynamics of the same indicator specifically for our sample. Similar trends can be observed, which serves as additional evidence of the representativeness of our sample.

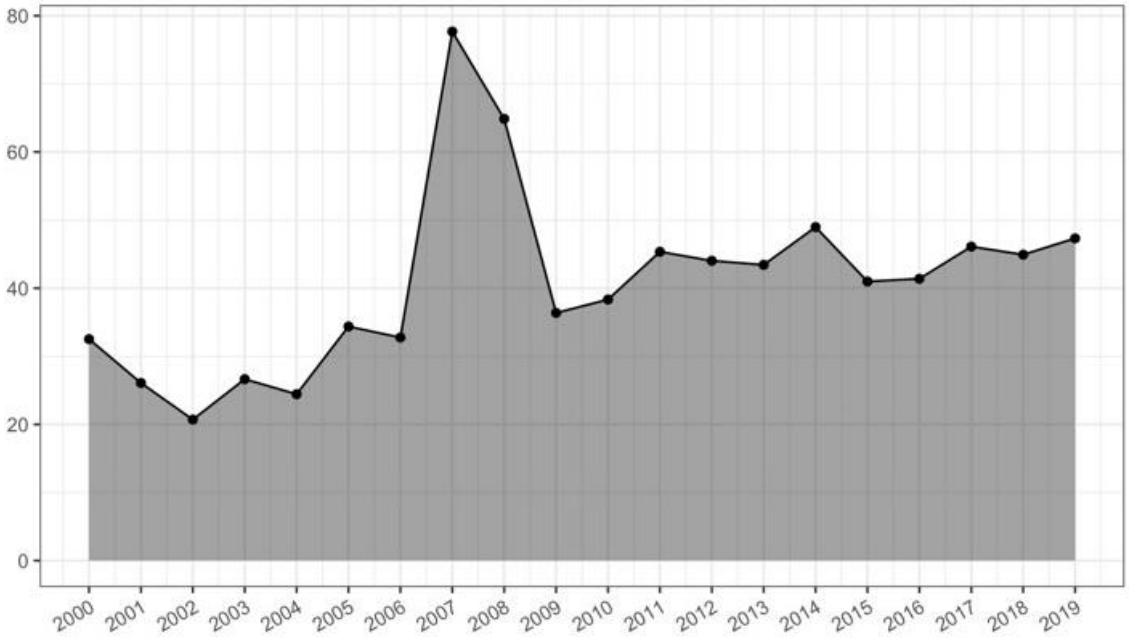

Figure 5. Dividends paid by Swedish non-financial companies (total, U.S. billions of dollars).

Source: SCB.se

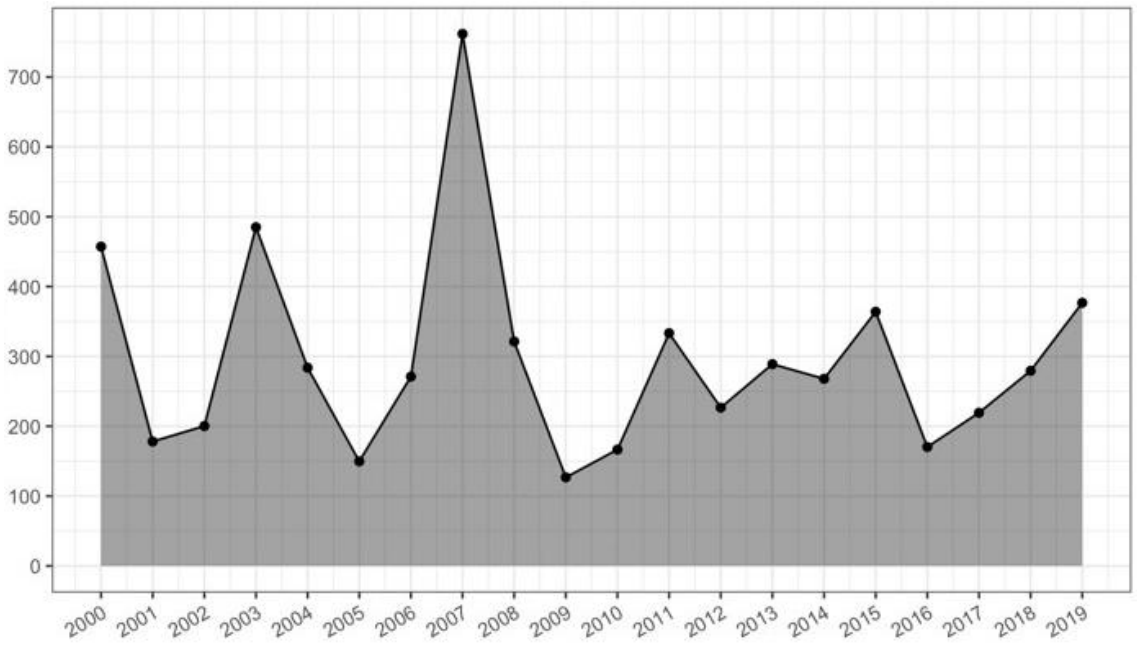

Figure 6. Dividends paid by Swedish non-financial companies (sample, U.S. millions of dollars).

Source: Thomson Reuters

Figures 5 and 6 show the dynamics of dividend payments by non-financial companies. Overall, the amount of payments increased steadily from 2001 until experiencing a sharp decline following the 2008 crisis. Both diagrams illustrate a slow recovery in growth beginning in 2009. Once again, we can observe that the trends in both diagrams align, further confirming the representativeness of our sample.

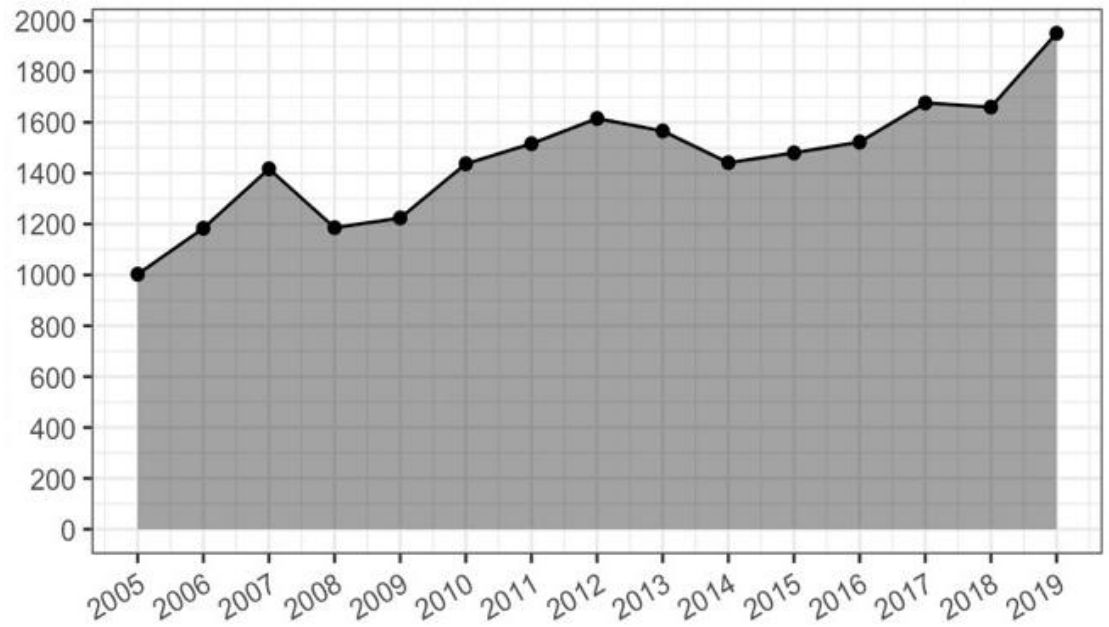

Figure 7. Total value of financial assets held by Swedish non-financial companies (U.S. billions of dollars)

Source: SCB.se

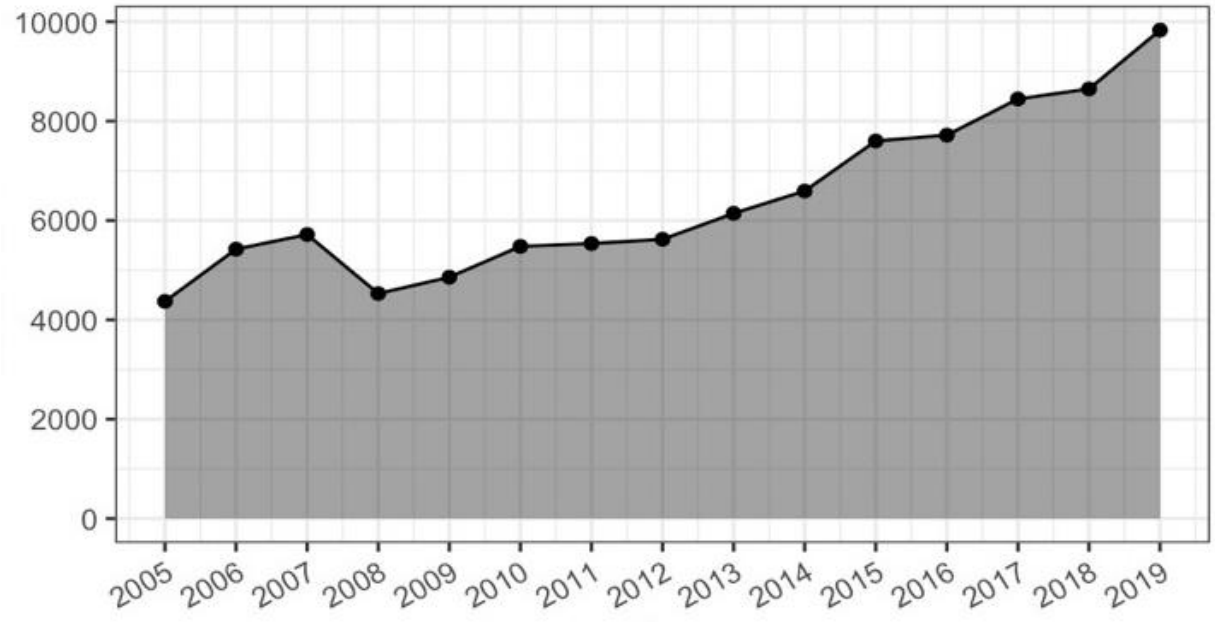

Figure 8. The number of securities held by the Swedish non-financial companies.

Source: SCB.se

For the last two diagrams, reports from SCB are only available starting in 2005. These diagrams present data on the financial assets of non-financial companies. As shown, over the 15-year period, there has been a consistent increase in the total value of firms' financial assets. However, as Figure 8 illustrates, this increase is due, at least in part, to the growing number of securities, rather than solely to an increase in their value (if any).

Let us summarize the stylized facts presented:

1. We observe a stagnation in operating income, which may indicate that part of the profit from operating activities has been replaced by income from financial activities.

2. There is a modest increase in the total value of dividends paid.

3. The total volume of financial assets held by non-financial companies has grown, one of the key indicators of financialization.

2. 4. Research methodology

To measure the effects presented in Equations 1–4, four estimation methods will be used: OLS, FE, RE, and the dynamic Arellano-Bond model based on the generalized method of moments (Manuel Arellano and Stephen Bond, 1991).

The OLS method treats the data as a simple cross-section. It does not account for individual effects or the dynamic nature of the variables. Therefore, it is arguably the weakest of the methods presented.

The fixed effects (FE) method allows us to control for time-invariant individual characteristics of the observed units, in this case, firms. Its key advantage is that it permits correlation between individual effects and the regressors.

The random effects (RE) method accounts for individual effects and allows for the inclusion of variables that do not vary over time. It also uses a different technique for "time-demeaning" the data compared to FE. However, for the RE estimates to be consistent, there must be no correlation between individual effects and the regressors.

The Arellano-Bond dynamic model is specifically designed to address certain forms of endogeneity, which, if present, violate the assumptions of the previous models and result in biased and inconsistent estimates. This method uses lagged values of the explanatory variables as instruments.

3. Results

The estimation results are presented in Table 3. The first method used was ordinary OLS. In general, two regressors showed unexpected signs: financial payments and retained earnings. However, only the lagged investment coefficient was statistically significant. These results indirectly suggest inefficiency in the OLS estimates. Regarding the variables of primary interest, both turned out to be statistically insignificant, with one showing a negative sign.

In the RE regression, the coefficient on financial income is identical to the one obtained using OLS (as are the other coefficients), indicating that the estimated variance of the random effect is closer to 0 than to 1. Again, the coefficient on financial income is negative and nearly significant at the 10% level. The estimated correlation between individual effects and regressors is low, which suggests that the RE model is generally appropriate for this analysis. Interestingly, this model yields perhaps the most surprising result in the study: a significant and positive coefficient on financial payments. This variable has a relatively high positive correlation with the dependent variable (around 0.33), which may indicate that, for example, interest payments have a different impact on Swedish firms compared to firms in other countries. Retained earnings again showed a negative, though insignificant, coefficient. All other coefficients had the expected signs.

The FE method confirms the robustness of the paradoxical results regarding financial payments and retained earnings. The coefficient on financial income remains negative (and even lower than in previous models), though it is not statistically significant.

Table 3. Estimation results for the period 2000–2019

	(1)	(2)	(3)	(4)	(5)
VARIABLES	OLS	RE	FE	A-B	A-B
Investment	0.842***	0.842***	0.784***	0.427**	0.628***
	(0.0787)	(0.0371)	(0.0892)	(0.193)	(0.118)
Financial Income	**-0.0547**	**-0.0547**	**-0.135**	**-0.163****	**-0.207****
	(0.0506)	(0.0471)	(0.198)	(0.0658)	(0.0891)
Retained Earnings	-0.760	-0.760	-0.790	0.927	0.729
	(0.534)	(0.510)	(0.890)	(1.608)	(1.532)
Financial Payments	**0.0350**	**0.0350*****	**0.0203**	**-0.0357**	**-0.00949**
	(0.0244)	(0.0110)	(0.0181)	(0.0526)	(0.0389)
Total Revenue	0.135	0.135*	0.00394	0.290**	0.204
	(0.0885)	(0.0743)	(0.152)	(0.114)	(0.146)
D25	0.212	0.212	0.121	0.191	-0.133
	(0.185)	(0.159)	(0.279)	(0.257)	(0.197)
Financial Income• D25					**-0.0403***
					(0.0229)
Constant	-1.389	-1.389	-3.290		
	(1.253)	(1.127)	(4.376)		
Observations	263	263	263	263	263
R-squared	0.801		0.621		
Number of id		33	33	33	33
Arellano-Bond test (AR2) (p-value)				0.222	0.373

Wald test (p-value)	0.0001	0	0	0	0
Hansen test p-value				0.99	0.99

Let us now turn to the estimates of the dynamic model. The methodology used should be outlined. Based on previous empirical research, the instruments in the regression include the previous three lags of the dependent variable, total revenue, and total assets (the latter used purely as an instrument). The remaining variables are included as predefined, with their three previous lags also serving as instruments. As in the previous models, standard errors are robust to heteroscedasticity.

As we can see, the results from the Arellano-Bond estimations differ notably from the earlier models. Lagged investment, as before, remains positive and statistically significant at any conventional level. The coefficients on retained earnings and total revenue are positive but insignificant, which supports the overall adequacy of the model. Notably, the coefficient on financial payments is negative (but statistically insignificant), which contrasts with the findings of most previous studies and may suggest a different effect of this variable in the Swedish context. The financial income ratio is both negative and statistically significant at any reasonable level, fully aligning with the theoretical framework presented earlier.

The final model differs from Model 4 by including the interaction between firm size and financial income. All previously estimated coefficients retain their signs, and the significance of financial income remains. However, the effect of firm size, contrary to the original hypothesis, turns out to be negative. This suggests that, all else being equal, smaller firms invest even less in real assets in response to financial income.

The result regarding financial income is consistent with the model and supported by previous studies using data from the UK (Tori and Onaran, 2018), Russia (Tretyakov and Rozmainsky, 2021), the USA (Orhangazi, 2008), and other countries. Based on the estimates above, the first hypothesis can be considered partially confirmed**:** financial income negatively affect real investment by non-financial firms.

A possible explanation for the negative effect among small firms lies in the structure of the Swedish economy itself. With a population of only 10 million, firms often face limited domestic growth opportunities. Expanding into international markets typically requires significant investment in real capital. When such a transformation occurs, the firm is likely reclassified as “large.”

It is also worth noting that temporal effects are significant in all regressions (the joint insignificance test consistently yields a p-value = 0). Tests for second-order autocorrelation in the dynamic models indicate that the null hypothesis of no second-order autocorrelation cannot be rejected. Hansen’s test confirms that the instruments used are valid. Based on these two tests, the use of the generalized method of moments is entirely appropriate.

As is well known, dynamic models are often characterized by a lack of robustness. To ensure the reliability of the results obtained, we conduct additional analysis using several modifications to the data. First, we reduce the sample period to 2005–2019. The year 2005 marks the beginning of a slowdown in growth rates. Moreover, as previously mentioned, in 2004 the Swedish Corporate Governance Code was revised (Dent, 2012). Second, we

modify some of the indicators. The firm's net sales will now serve as the proxy for capacity utilization. Instead of using financial payments (which include both dividends and interest expenses), we use only dividend payments as the indicator of financial outflows. Additionally, profitability will now be measured using operating income. The dynamic model specification remains unchanged. Let us now describe the results of this estimation.

Table 4. Estimation results for the period 2005–2019

	(1)	(2)	(3)	(4)	(5)
VARIABLES	OLS	RE	FE	A-B	A-B
Investment (lagged)	0.854***	0.854***	0.713***	0.422	0.534***
	(0.0782)	(0.0526)	(0.101)	(0.414)	(0.198)
Financial Income	**-0.0849**	**-0.0849**	**0.106**	**-0.174***	**-0.176****
	(0.0562)	(0.0530)	(0.293)	(0.114)	(0.0708)
Operational Income	-1.179**	-1.179***	-1.498	0.313	-1.317
	(0.504)	(0.393)	(0.901)	(3.916)	(1.495)
Dividends Paid	**0.00108**	**0.00108**	**-0.00976**	**-0.0109**	**-0.0235**
	(0.00869)	(0.00682)	(0.00986)	(0.0412)	(0.0406)
Net Sales	0.179**	0.179***	0.295*	0.392*	0.383***
	(0.0746)	(0.0505)	(0.167)	(0.217)	(0.149)
	(0.140)	(0.126)	(0.199)	(4.036)	(1.805)
D25	0.388*	0.388*	0.0616	0.234	-0.0145
	(0.223)	(0.229)	(0.362)	(0.345)	(0.264)
(Financial Income)*D25					**-0.0263***
					(0.0164)
Constant	-2.383*	-2.383**	1.432		
	(1.354)	(1.143)	(6.210)		

Observations	206	206	206	206	206
R-squared	0.836		0.672		
Number of id	29	29	29	29	29
Arellano- Bond test (AR2) (p-value)				0.164	0.248
Wald test (p-value)	0.7132	0	0	0	0
Hansen test (p-value)				0.99	0.99

The main results concern the effects of the key variables: financial income, financial outflows (dividend payments), and the interaction between financial income and firm size. As we can see, the effect of financial income is again negative and significant in both dynamic regressions. In the auxiliary regressions, the effect was only once positive and insignificant. The unexpected result for small firms is reaffirmed: all else being equal, smaller firms invest less as financial income increases.

The variable representing financial outflows, dividend payments, has a negative coefficient in both dynamic models. This suggests that the positive and significant effect of financial payments observed in the first model was likely driven by the inclusion of interest payments, which are typically associated with firms actively investing in real assets. Sweden may, in fact, be the first country where no significant effect of dividend payments on investment has been found, although the sign of the coefficient remains negative. One possible explanation is the lack of substantial growth in dividend payments in Sweden compared to other countries where financialization effects have been confirmed. Another explanation may be the tendency of Swedish firms to purchase securities rather than issue their own financial instruments. This is also supported by the slightly stronger (in absolute terms) negative effect of financial income on investment, as well as the stylized facts presented earlier. Finally, these findings could reflect stronger financial positions, greater "financial health", among Swedish firms. This conclusion is supported by a detailed discussion in Barradas (2017, p. 392).

The variable "s" (net sales) appears to be just as effective a proxy for capacity utilization as total revenue. In both cases, the coefficients are positive and significant, indicating the robustness of the model. As for lagged investment, its effect remains positive and significant (except in the FE regression), consistent with previous results.

The most unexpected result was obtained for the operating income variable, which serves as a proxy for the profitability of firm activity. It should be noted that the value of the coefficient is influenced by the fact that the variable is not logarithmic, as some firms reported negative operating income during certain periods. The coefficient is statistically significant in the OLS and RE models, and negative in one of the dynamic models. This result aligns with findings from some empirical studies (Tori and Onaran, 2017), which suggest that not only financial income but also operating income can lead to a reduction in real capital investment, as firms may allocate these funds toward purchasing securities instead. However, no consistent and significant negative effect

was found: in three out of four dynamic model estimations, the profitability proxy remained positive. Therefore, this effect can generally be interpreted as positive.

The diagnostic tests produced results consistent with those of the initial regression, with one exception: temporal effects were generally insignificant in the OLS model. Based on the Hansen test and the second-order autocorrelation test, the use of the generalized method of moments remains appropriate.

Thus, having obtained significant coefficients and confirmed the robustness of the model, we can partially confirm the first hypothesis**,** that financial income negatively affects real investment by non-financial firms, and refute the second hypothesis, which predicted that financial income would have a positive effect on physical capital investment in small firms.

4. Conclusion

In the course of this analysis, we found partial confirmation of the first hypothesis: rising financial income leads to a decline in real capital investment by non-financial firms. Paradoxically, no significant evidence was found for a negative effect of financial payments on physical investment. This may be due to the relatively low level of such payments in Sweden compared to other countries. It may also reflect a general tendency among Swedish firms to purchase securities rather than issue their own financial instruments, and a higher level of financial health in the Swedish non-financial sector. The result obtained for financial income is consistent with the theoretical model used and aligns with numerous previous empirical studies on financialization (Tori and Onaran, 2018; Stockhammer, 2004; Orhangazi, 2008; Hecht, 2014; Tretyakov and Rozmainsky, 2021).

The second hypothesis, by contrast, is rejected. Other things being equal, small firms invest even less in physical assets as financial income rises. Although this result contradicts the model's expectations, it can be explained by the small size of the Swedish economy as a whole, which limits domestic growth opportunities for such firms.

One of the most serious consequences of financialization is the slowdown in economic growth. It is possible that financialization contributed to the deceleration of the Swedish economy in the early 21st century, as well as to the stagnation of real investment and operating income among non-financial companies. The results of this study support that view, but further investigation is needed to understand these processes more deeply. It is important to analyze other potential causes of declining fixed capital investment, using alternative theoretical approaches. At the same time, exploring additional channels through which financialization affects the real economy could also provide valuable insights.

The main limitation of this study is the small sample size. An analysis based on a different set of firms, covering another time period, and applying alternative econometric methods, may produce different results. In particular, incorporating the Global Financial Crisis (GFC) as a factor could yield new and interesting insights, for example, by including dummy variables for the GFC period and the post-GFC period. Additionally, the analysis could be expanded to include the effects of COVID-19-related events, although this lies beyond the scope of the current paper.

The policy implications of our findings include the need for government instruments to encourage investment in Sweden. If increasing financial income negatively affects real investment activity, policymakers should take action to counter the decline in fixed capital accumulation. Another recommendation is to explore possible strategies for the definancialization of the non-financial sector (see also Tori and Onaran, 2018, p. 1411).

Bibliography

Alexiou, Constantinos, and Joseph Nellis. 2006. "Investment Decisions within the Context of Financialization: Cointegration Evidence from the UK Economy." *Panoeconomicus*, 63(1): 113–133. http://dx.doi.org/10.2298/PAN1601113A

Arellano, Manuel, and Stephen Bond. 1991. "Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations." *Review of Economic Studies*, 58(2): 277–297. https://doi.org/10.2307/2297968

- **Arestis, Philip, Ana Rosa González and Óscar Dejuán**. 2012. "Modelling Accumulation: A Theoretical and Empirical Application of the Accelerator Principle under Uncertainty." *European Journal of Economics and Economic Policies: Intervention*, 9(2): 255–276. 10.4337/ejeep.2012.02.08

- **Barradas, Ricardo.** 2017. "Financialisation and Real Investment in the European Union: Beneficial or Prejudicial Effects?" *Review of Political Economy*, 29(3): 376–413. 10.1080/09538259.2017.1348574

Barradas, Ricardo and Sergio Lagoa. 2017. "Financialization and Portuguese Real Investment: A Supportive or Disruptive Relationship?".*Journal of Post Keynesian Economics*, 40(3): 413–439. http://dx.doi.org/10.1080/01603477.2017.1286940

Battiston, Stefano, Mattia Guerini, Mauro Napoletano, and Veronica Stolbova. 2018. "Financialization in EU and the Effects on Growth, Inequality and Financial Stability." ISIGrowth WP Series, Working Paper 36.

Belfrage, Claes and Markus Kallifatides. 2018. "Financialisation and the New Swedish Model". *Cambridge Journal of Economics*, 42(4): 875–899. https://doi.org/10.1093/cje/bex089

Davis, Leila. 2018. "Financialization and the Non-Financial Corporation: An Investigation of Firm-Level Investment Behavior in the United States." *Metroeconomica*, 69(1): 270–307. https://doi.org/10.1111/meca.12179

Dent, George. 2012. "Corporate Governance: The Swedish Solution." Florida Law Review, 64: 1633. http://dx.doi.org/10.2139/ssrn.1999454

Eklund, Klas. 2007. Vår ekonomi: en introduktion till samhällsekonomin. Stockholm: Norstedts Akademiska Förlag

Epstein, Gerald. 2005. "Introduction: Financialization and the World Economy." In *Financialization and the World Economy*, ed. Gerald Epstein. Aldershot: Edward Elgar.

Fazzari, Stephen, and Tracy Mott. 1986. "The Investment Theories of Kalecki and Keynes: An Empirical Study of Firm Data, 1970–1982." *Journal of Post Keynesian Economics*, 9(2): 171–187. 10.1080/01603477.1986.11489611

Hecht, Jason. 2014. "Is Net Stock Issuance Relevant to Capital Formation? Comparing Heterodox Models of Firm-Level Capital Expenditures across the Advanced and Largest Developing Economies." *Cambridge Journal of Economics*, 38(5): 1171–1206. https://doi.org/10.1093/cje/bet070

Hein, Eckhard. 2019. "Financialisation and Tendencies towards Stagnation: The Role of Macroeconomic Regime Changes in the Course of and after the Financial and Economic Crisis 2007–09." *Cambridge Journal of Economics*, 43(1): 975–999. https://doi.org/10.1093/cje/bez022

Hein, Eckhard, Petra Dünhaupt, Ayoze Alfageme, and Marta Kulesza. 2017. "Financialisation and Distribution in the US, the UK, Spain, Germany, Sweden and France: Before and after the Crisis." Institute for International Political Economy Berlin. Working paper 85.

Keynes, John Maynard. 1936. *The General Theory of Employment, Interest, and Money.* London: Macmillan.

Krippner, Greta. 2005. "The Financialization of American Economy." *Socio-Economic Review*, 3(2), 173–208. https://doi.org/10.1093/SER/mwi008

Lavoie, Marc. 1992. *Foundations of Post-Keynesian Economic Analysis.* Aldershot: Edward Elgar.

Mamede, Ricardo Paes, Sergio Lagoa, Emanuel Leao, and Ricardo Barradas. 2014. "Financialisation and the Financial and Economic Crises: The Case of Portugal." Conference: FESSUD Studies in Financial Systems 24.

Onaran, Özlem, Engelbert Stockhammer, and Lucas Grafl. 2011. "Financialisation, income distribution and aggregate demand in the USA." *Cambridge Journal of Economics*. 35(4): 637–661. https://doi.org/10.1093/cje/beq045

Orhangazi, Özgur. 2008. "Financialisation and Capital Accumulation in the Non-Financial Corporate Sector: A Theoretical and Empirical Investigation on the US Economy: 1973–2003." *Cambridge Journal of Economics*, 32(6): 863–886. https://doi.org/10.1093/cje/ben009

Orhangazi, Özgur. 2019. "The Role of Intangible Assets in Explaining the Investment–Profit Puzzle." *Cambridge Journal of Economics*, 43(5): 1251–1286. https://doi.org/10.1093/cje/bey046

Rabinovich, Joel. 2019. "The financialization of the non-financial corporation. A critique to the *financial turn of accumulation* hypothesis". *Metroeconomica*, 70(4): 738–775. https://doi.org/10.1111/meca.12179

Roodman, David. 2009. "How to do Xtabond2: An Introduction to Difference and System GMM in Stata." *Stata Journal*, 9(1), 86–136. https://doi.org/10.1177/1536867X0900900106

Ryner, Magnus. 2002. *Capitalist Restructuring, Globalisation and the Third Way: Lessons from the Swedish Model.* London and New York: Routledge.

- **Seo, Hwan-Joo, Han Sung Kim and Yoo Chan Kim**. 2012. Financialization and the Slowdown in Korean Firms' R&D Investment. *Asian Economic Papers*, 11(3): 35–49. 10.1162/ASEP_a_00160

Soener, Matthew. 2021. "Did the 'Real' Economy Turn Financial? Mapping the Contours of Financialisation in the Non-Financial Corporate Sector." *New Political Economy*, 26(5): 817–831. https://doi.org/10.1080/13563467.2020.1858775

Stockhammer, Engelbert. 2004. "Financialisation and the Slowdown of Accumulation." *Cambridge Journal of Economics*, 28(5): 719–741. https://doi.org/10.1093/cje/beh032

Stockhammer, Engelbert. 2010. "Financialization and the Global Economy." Working Papers wp240, Political Economy Research Institute, University of Massachusetts at Amherst.

- **Tarverdyan, Meri, and Ivan Rozmainsky**. 2023. "An Empirical Analysis of the Influence of Financialization on the Innovative Activity of the Firms' Managers in Italy". *Terra Economicus*, 21(1): 61–79.
- 10.18522/2073-6606-2023-21-1-61-79

- **Tomaskovic-Devey, Donald, Ken-Hou Lin, and Nathan Meyers.** 2015. "Did financialization reduce economic growth?" *Socio-Economic Review*, 13(3): 525–548. 10.1093/ser/mwv009

- **Tori, Daniele, and Özlem Onaran.** 2017. "The Effects of Financialisation and Financial Development on Investment: Evidence from Firm-Level Data in Europe." *Greenwich Papers in Political Economy*, 44: 3–63. 10.2139/ssrn.3064062

Tori, Daniele, and Özlem Onaran. 2018. "The Effects of Financialisation on Investment: Evidence from Firm-Level Data for the UK." *Cambridge Journal of Economics*, 42(5): 1393–1416. https://doi.org/10.1093/cje/bex085

Tori, Daniele, and Özlem Onaran. 2020. "Financialization, Financial Development and Investment. Evidence from European Non-Financial Corporations." *Socio-Economic Review*, 18(3): 681–718. https://doi.org/10.1093/ser/mwy044

Treeck van, Till. 2008. "Reconsidering the Investment-Profit Nexus in Finance-Led Economies: An ARDL-Based Approach." *Metroeconomica*, 59 (3): 371–404.

https://doi.org/10.1111/j.1467-999X.2008.00312.x

- **Tretyakov, Dmitry, and Ivan Rozmainsky**. 2021. "An empirical analysis of the influence of financialization on investment in Russia". *Russian Journal of Economics*, 7:233-249. 10.32609/j.ruje.7.58419

Appendix

Table 1A. Descriptive Statistics

Variables	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
Investment	310	6.15E+08	7.84E+08	2.99E+08	4.56E+08	4.3E+08	6456.958	3.79E+09	3.79E+09	1.641559	2.100161	44519703
Financial Income	310	10673764	36940500	851869.9	2933215	1261207	0	3.77E+08	3.77E+08	6.973184	58.64678	2098079
Retained Earnings	310	4.21E+08	7.86E+08	1.88E+08	3.35E+08	3.21E+08	-2.9E+09	3.18E+09	6.09E+09	0.467239	4.78691	44640430
Total Revenue	310	1.1E+10	1.27E+10	6E+09	8.6E+09	8.6E+09	12067876	4.64E+10	4.64E+10	1.410536	0.978929	7.22E+08
Financial Payments	310	3.39E+08	4.95E+08	1.46E+08	2.35E+08	2E+08	0	3E+09	3E+09	3.09571	11.69076	28115546
Dividends Paid	310	3.07E+08	4.84E+08	1.04E+08	2.06E+08	1.53E+08	0	3E+09	3E+09	3.29569	13.26323	27476318
Net Sales	310	1.06E+10	1.24E+10	5.79E+09	8.27E+09	8.31E+09	1816374	4.61E+10	4.61E+10	1.41441	1.047902	7.02E+08
Operational Income	310	7.28E+08	9.84E+08	3.44E+08	5.6E+08	4.95E+08	-2.4E+09	5.29E+09	7.67E+09	1.572215	3.949773	55877549