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THE ECONOMIC PERFORMANCE OF EU NON-FINANCIAL CORPORATIONS, 2000–2025: EVIDENCE AND EXPLANATION FROM THE NATIONAL ACCOUNTS

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Abstract

This study examines the economic performance of non-financial corporations (NFCs) in the EU27 over the period 2000–2025 using sectoral National Accounts data on balance sheets, revenues and costs, capital accumulation, production costs and productivity. The evidence is interpreted within a benchmark model of price-taking, profit-maximizing firms. We find that the long-run evolution of output, factor productivity, factor-income shares and capital investment is broadly consistent with firms responding in a profit maximizing way to changes in relative factor prices under moderate technical progress and otherwise relatively stable aggregate production technology. Financial assets have grown to a size comparable to operating assets, although the evidence suggests that this development may partly reflect outward foreign direct investment in addition to a possible reallocation away from productive activity. Comparison with US NFCs points to a European disadvantage in unit labor costs driven primarily by weaker labor-productivity growth rather than faster wage growth. This productivity gap coincides with increasingly divergent capital-investment dynamics, particularly since the pandemic. The simultaneous weakening of EU capital accumulation and acceleration of US investment raises the question of whether the recent divergence represents a temporary adjustment or the emergence of a more persistent technological gap.

Key words: Corporations EU27, balance sheet and income statement data, economic growth, comparisons with corporate USA.

INTRODUCTION

Firms occupy a central position in a market economy. They organize production, employ labor, accumulate productive capital, introduce new technologies, products and processes. Their decisions determine a substantial part of an economy's productive capacity and influence productivity, wages, employment, tax revenues and external competitiveness. The overall economic performance of a country will very much depend on the behavior and performance of the business sector, yet no generally stablished methodology exists on how to integrate the micro and the macro of economic productivity and growth, and rarely the private and social performance of the business sector is studied separately from the rest of the economy, although there appears some sign of changes.

The Draghi (2024) report and other that followed inspired by it, deeply analyses macroeconomic policies, market integration and regulation, market competition and sector tailored industrial policies, but the behavior and performance of the EU corporate sector are not explicitly considered as relevant actors (maybe because it is considered that they were totally determined by market competition and government policies). In contrast, Mazzucato et al. (2026) adopt a different approach and examine the European competitiveness problem as the outcome of corporate decisions and performance, with conclusions and policy recommendations quite different from the main line of consensus. The authors combine data from accounting statements from around 300 listed corporations in the EU and data from Eurostat-national accounts to document the growing importance of financial assets and income in the accounting statements of NFC in the EU, and presents it as evidence of progressive

"financialization" of the EU corporate sector. The direction of corporate resources to financial investments rather than to productive ones is interpreted as a signal of corporate behavior directed towards "value" extraction" rather than to "value creation", and, according to the authors of the report, it would be a main determinant of the EU comparatively poor performance reported by Draghi.

This paper presents an assessment for the aggregate non-financial corporation (NFC) sector of the EU27 in the period 2000-2025. The data and spirit of the study is in the line of that of Mazzucato et al., but with substantial differences. In particular, the study documents and interprets the outcomes of production, investment and financial decisions as if they were originated from corporate profit maximization. Moreover, the financialization explanation of the growing financial assets in the companies balance sheets is confronted with the alternative of internationalization: loans and shares held by corporations in the EU originate, at least in part, in foreign direct investment decisions (the creation of a subsidiary to produce abroad, for example) financed by the parent company constituted in the EU. The broader perspective adopted in the paper allows us to directly investigate the aggregate performance of the NFC sector in output and productivity grow, capital accumulation, and the allocation of internal generated funds among, financing new fixed capital investment to produce in the EU, pay dividends to the shareholders, or make financial investments. The analysis is extended to partially compare the competitiveness of the corporate sector in the EU with the US one.

The sector of NFC is one of the officially recognized institutional sectors of the economy, together with financial corporations, households and not-for-profit institutions, and the government sector. Each institutional sector has its own national accounts where the outcomes of production and investment decisions are reported for the aggregate. The private non-financial business sector of the economy includes for profit firms that adopt the corporate legal form, and for-profit firms under the legal form of physical person. The outcomes of activities of non-corporate firms, particularly those of self-employed and not for profit organizations, are reported together with those of households and non-profits. The sector of NFC comprises the majority of the medium size firms and practically all large firms (with 250 employees and more) outside the financial sector in the economy. It is also by far the institutional sector that contributes directly the most to the total output and investment of the EU27 with above 50% of the gross value added and of the gross fixed capital formation (including residential housing).

The paper reconstructs the evolution of the balance sheets (assets and liabilities), of the income statements and of the flow of funds over approximately 25 years, since the creation of the euro, using the integrated non-financial and financial sector accounts for the aggregate of NFC in the EU27, mainly with data published by Eurostat. The objective is not simply to describe how large the corporate sector has become or how its profits and debts have changed. It is to investigate whether the resources accumulated and controlled by European corporations have been employed in a way that is broadly coherent with a profit-maximizing behavior of a price taker EU-wide representative firm. Maximizing profits as if the market was competitive (price taker firm) is one of the conditions for alignment between private interests and socially preferred outcomes. In other words, such behavior and performance would be considered consistent with value creation rather than with value extraction. Increasing capital investment when the rate of return on capital is higher than the opportunity financial cost and reducing or stopping it when the cost is higher than the return is consistent with *private* value creation, although not necessarily with *social* value creation when there are external effects that private actors do not properly internalize.

The period since the beginning of the century is exceptionally informative. It encompasses the deepening of European economic and monetary integration, the expansion of the EU to Central and Eastern Europe, the global financial crisis, the euro-area sovereign-debt crisis, a prolonged period of exceptionally low interest rates, the COVID-19 shock, the subsequent inflationary episode and the abrupt normalization of monetary policy. It also includes the accelerated globalization and later fragmentation of production chains, the rise of intangible and digital capital, the energy transition and the emergence of artificial intelligence. Each episode changed corporate incentives and constraints. European integration enlarged markets and encouraged cross-border production, financing and ownership. Before the global financial crisis, inexpensive credit supported rapid balance-sheet expansion in several countries. The financial and sovereign-debt crises exposed excessive leverage and produced a prolonged process of corporate deleveraging. Very low interest rates subsequently reduced financing costs,

but it is uncertain that it generates the investment acceleration that conventional theory might predict. During the pandemic, public support and credit guarantees helped preserve corporate liquidity and productive capacity. More recently, firms have faced higher financing and energy costs, geopolitical uncertainty and demands for large investments in digitalization, decarbonization and economic security.

The 25-year perspective permits the separation of cyclical responses from structural change. A fall in investment during a recession is unsurprising; persistently weak capital formation over several expansions is more consequential. Temporary liquidity accumulation during a crisis can be precautionary; a lasting shift from real to financial assets may suggest a more fundamental transformation in corporate behavior. Likewise, an increase in profit shares has different implications depending on whether it is accompanied by higher productivity, market concentration or declining investment.

At the same time, aggregate evidence must be interpreted carefully. The EU27 total conceals large differences across countries, industries and firm sizes (primary data heterogeneity). Changes in asset values may result from revaluations rather than new investment. Financial assets and liabilities include substantial intra-corporate and cross-border positions, and non-consolidated figures may therefore exaggerate the sector's effective leverage. The growing importance of intangible assets also creates measurement difficulties. Finally, aggregate accounts reveal outcomes but cannot, by themselves, identify managerial motives or establish that every observed choice is optimal. For these reasons, the aim of the study should not be to "test" profit maximization in a narrow sense. Almost any individual observation can be rationalized by unobserved expectations, risks or constraints. A more defensible objective is to assess whether the long-run configuration of profitability, investment, financing and asset accumulation is consistent with the economic role assigned to profit-seeking corporations.

In summary, the Europe's corporate sector stands at the intersection of two apparently contrasting facts: the EU possesses substantial income, wealth and saving, yet its productivity performance, business investment and ability to scale new technologies have generated increasing concern. Opening the consolidated accounts of its non-financial corporations should help to better understand these tensions. In particular if corporate and macroeconomic performance at the EU level has been determined by inadequate regulations and policies (Draghi), or has been determined by "improper" corporate behavior (Mazzucato).

A 25-year reconstruction can show how much income the sector has generated, how that income has been divided between labor, taxation, retention and distribution, how much capital has been accumulated, and how the resulting balance sheet has been financed. More importantly, it can reveal whether stronger corporate financial positions have been transformed into greater productive capacity and economic performance.

The ultimate question is not simply whether European corporations have been profitable. It is whether their pursuit of profit has produced the investment, innovation, productivity, employment and resilience that provide the economic justification for the corporate form within a market economy. That question gives the descriptive analysis its broader analytical and policy significance. Although it is not the main objective of the study, the partial and very tentative comparison with the performance with the USA corporate sector mainly in labor, output and investment, complements other studies of the two economies but this time with the focus on the corporate sector not in the economy as a whole.

1. LITERATURE REVIEW

The review is restricted to papers and reports that directly or indirectly assess the competitiveness deficits of the EU economy and its causes using corporate data, mostly drawn from national accounts. Some of these papers focus on the "real" or productive economy and focus on growth, productivity, investment and innovation. Others focus on the financial decisons of corporate EU, accumulation of financial assets, leverage, uses of internally generated funds. There are papers that use aggregate, county level data, and others that use non-financial corporate level data. Our study is somehow unique in that it studies the performance of the EU27 non-financial corporate institutional sector, but it does so with aggregate sector data from national accounts, and combines production and financing decisions.

Following up the Draghi (2024) report, the European Commission has published assessment updates of the competitiveness of the EU economy with their own analysis and with an extensive review of the research conducted at the EC, the ECB and the EIB. The European Commission (2025) report on competitiveness reappraisal documents persisting EU structural weaknesses in productivity and innovation, aggravated by an international environment of increasing trade barriers and increased defense needs. Mobilizing investment and pursuing productivity enhancing reforms would then more necessary than ever.

The ProdTool Project —an initiative supported by the European Commission combining expertise from national institutions, statistical authorities, central banks, and research organizations with the aim to strengthen evidence-based productivity analysis and policymaking across Europe—, has recently published a report on heterogeneity of productivity across firms in the EU that draws on harmonized firm-level evidence from CompNet (Di Mauro and Zona Mattioli, 2026). The report documents that substantial productivity differences still exist between firms operating within the same industry heterogeneity, but contrary to what is commonly believed no evidence was found that firm level productivity dispersion within the European countries has increased during the post 2010 period. When digging into the sources of productivity heterogeneity at the firm level, the research identifies structural and institutional factors that contribute to it, additional to possible firm level factors such as managerial skill and preferences for growth: *uneven technology diffusion, the growing role of intangible assets, financing frictions, declining business dynamism, and the conditions that allow productive firms to scale across European markets (page 6).* Van Ark (2026) reaches similar conclusions with sector and country level data. OECD (2025) and Adilbish et al. (2025) specifically document how these weaknesses in investment and innovation widen the EU's productivity gap with respect to the US.

Competition and competition policy in the EU, particularly around mergers and acquisitions, has been at the center of the policy debate. The dominant view among academic and policy makers is that markets evolve towards less competition and higher market power of firms (De Loecker et al., 2020), affecting negatively corporate investment and growth (Gutierrez and Philippon, 2016). Archanskaia el al. (2026) document the evolution of market power in the EU Fromm 2007 to 2022 with firm level financial statements. Their study finds a moderate and stable EU aggregate markup that contrasts with the pronounced upward trend documented for the USA. In particular, the excess profitability, measured as price-cost margins net of fixed costs, has remained stable at 3–5% of total revenue.

These papers on competitiveness and competition in the EU have implications for our study. The heterogeneity in productivity at the firm level should not be a surprise but it is an important reminder of the limitations of using aggregate data in productivity measurement, as we do in our analysis. The finding that productivity dispersion is not increasing over time should at least make more credible the results on trends of values of aggregate variables. The moderate and stable corporate market power calculated from firm level aggregates across the UE would support the assumption we make in this study about price taking profit maximizing behavior by a hypothetical representative firm. In fact, the study reports economic profit margins of 7% relative to gross value added, comparable to the 3-5% on total revenue reported by Archanskaia et al. Positive economic profit margins are possible with price taker firms due to decreasing returns to scale, as shown in the theory section. The referenced paper with firm level data assumes constant returns in the calculations so the positive economic profits must be explained from market power of firms. Firm level data are clearly preferable to aggregate one in the assessment of competitiveness and competition. Our study compensates, we hope, the aggregate data limitation with an explicit profit maximizing equilibrium benchmarks, and with a more comprehensive analysis of production, investment and finance corporate decisions.

1.1. Studies on financing and financial investments of NFC

Beck et al. (2023) study comprehensively the long-run evolution of the financing of European NFC from the introduction of the euro through the pandemic. It combines sector accounts, corporate accounting data and international comparisons. The paper reconstructs aggregate NFC assets and liabilities, decomposes sources and uses of funds and stablishes links among profitability, investment, debt issuance, equity issuance, dividends

and financial-asset acquisition. The paper compares the periods before and after 2008, and discusses whether the declining in corporate borrowing reflects credit constraints or weaker investment demand. The authors report a widespread decline in EU corporate leverage after 2008. They also show that, relative to 1999–2008, the post-2009 euro-area corporate sector exhibits lower profitability, lower investment, less debt issuance and more conservative financial policies. They interpret the combination as potentially reflecting fewer profitable investment opportunities, tighter financing conditions, the transition towards intangible capital or greater corporate caution.

Our analysis updates the period of analysis to the post pandemic years (up to 2025) and aims to a more comprehensive analysis of the performance of the EU aggregate corporate sector, while Beck et al. (2023) main interest is financial stability.

Several papers have called into attention the fact that the reduction in corporate investment in the EU and in other developed countries coincides in time with the observed change of NFC from net borrowers to net lenders (Chen et al., 2017; Cesaroni et al., 2018; Granelli et al., 2020). The main research interests are to determine whether the net lending position has been driven more by rising gross savings than by investment alone, and to find out the destination of the net funds retained in the corporation. One of the possible uses of corporate excess of funds (savings) is cancel corporate debt (deleveraging). Ruscher and Wolf (2012) analyze corporate deleverage in the EU after the financial crisis and its relationship with the reduction in capital investment. The Deutsche Bundesbank (2026) report is a recent comprehensive and institutional study of changes in the financing structure of euro-area corporations. It performs a balance-sheet analysis in the post-financial-crisis and post-pandemic context, including the changing roles of retained earnings, bank loans, debt securities, equity and liquid financial assets.

These studies have separately examined European corporate profitability, saving, investment, leverage and financial surpluses. Our paper integrates these dimensions within the complete system of EU27 sector accounts, and evaluates whether their joint evolution is consistent with the allocation, investment and financing behavior expected of profit-maximizing corporations.

The phenomenon where corporations increasingly obtain returns from holding and trading financial claims instead of producing goods and services, has been named “financialization” (see Van der Zwan [2014] for a literature review, and Toni and Onaran (2020) for an empirical analysis using data from EU non-financial corporations). Mazzucato et al (2026) document the growing importance of financial assets and income in the accounting statements of NFC in the EU. Their conclusion is that as long as the involvement in financial activities divert resources that could be used in productive ones, financialization is a redirection of corporate resources from “value creation” to “value extraction”.

However, their study ignores the possibility that financial assets in the balance sheets of NFC could be the counterpart of corporate foreign direct investment. For example, Cesaroni et al. (2017) study 18 advanced economies —16 European countries, the United States and Japan— over 1995–2014. They find that NFC financial surpluses are positively and significantly associated with net outward FDI, defined as outward minus inward FDI positions. Butler et al. (2019) document a strong association between financial assets and foreign direct investment of Deutch NFC. Rodríguez-Palenzuela and Dees (2016) examine corporate saving across Euro area economies from the combination of weaker domestic investment, high profits and corporate payouts. Their results suggest that outward investment is part of the explanation of the expansion of corporate financial assets, but not a complete explanation: domestic investment weakness and changes in the uses of internally generated funds also matter.

Financialization and internationalization can be alternative explanations of the growing importance of financial assets and income in corporate accounting statements. Since they respond to different motivations and have different implications for social welfare, the paper will explore the uses of funds and the sources of income under the two competing explanations.

This study is a continuation of previous ones about the performance of Spanish NFC using data from National and Financial Accounts (Salas Fumás, 2021, 2025a, b). The methodology of analysis is similar, but the application to the assessment of the performance of NFC in the EU27, as well as the comparisons with the USA NFC, are new in this line of study.

2. SOURCES OF INFORMATION AND CLASSIFICATION OF ACCOUNTING ITEMS

The source data used to analyze the performance of the aggregate of the NFC sector in the EU27 are divided into stocks and flows. Stocks comprise the year-end balances of the asset and liability accounts in the balance sheets regularly prepared by NFCs, adapted to the information available. Flow accounts are, in turn, grouped into income-statement items (revenue and costs), and items recording cash movements, particularly the sources-and-uses-of-funds statement.

2.1. Balance sheet

The NFC balance-sheet asset and liability items, classified in accordance with the objectives of this study, are shown in Table 1. The items, as well as their respective values in each year, are drawn from the Financial Accounts compiled and published by Eurostat on the basis of n ational financial accounts.[1]

TABLE 1. CLASSIFICATION OF NFC BALANCE-SHEET ACCOUNTS —ASSETS AND LIABILITIES— ADOPTED IN THIS STUDY

Assets	Liabilities and equity
Deposits	Loans
Loans and debt securities	Other debt
Shares and investment fund units	FINANCIAL DEBT
Other financial assets	EQUITY
NON-OPERATING FINANCIAL ASSETS	
Cash	
Net trade credit	
Operating fixed assets	
OPERATING ASSETS	
TOTAL ASSETS	TOTAL LIABILITIES AND EQUITY

Source: Authors' own compilation.

The difference between total assets and total liabilities in the Financial Accounts is negative: corporations obtain more financing than the investment of the funds received that is recorded on the asset side of the balance sheet. This negative difference arises because the NFC asset accounts covered by the Financial Accounts are incomplete. In particular, they do not include the assets accumulated through investment in capital goods (machinery, equipment, facilities, patents, land, buildings, etc.) that, in combination with labor, are required to produce goods and services. The financing needs associated with these tangible and intangible assets are, however, included in the financial liability accounts.

The asset side of the balance sheet proposed in Table 1 distinguishes between non-operating financial assets and operating assets. *Non-operating financial assets* arise from investment decisions unrelated to the production of goods and services in the EU27. For the purposes of this study, and based on the breakdown of items in the Financial Accounts, the monetary assets not linked to production in the EU comprise bank deposits, debt securities, shares, participations in investment funds, and other assets (for example, derivatives). The

[1] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Financial_corporations_-_statistics_on_financial_assets_and_liabilities

Financial Accounts do not separate the non-operating financial assets between those that originate from FDI of parent companies located in the EU, and those that correspond to financial investments in which the company acts as a passive investor.

The *operating assets* include fixed non-financial assets, and financial assets. The fixed operating assets comprise the tangible and intangible capital goods owned by the NFC and used to produce goods and services in the EU, valued at their replacement cost. The financial operating assets are cash holdings and the net trade-credit balance (trade receivables from customers less trade payables to suppliers); the two are likely to vary with production and trade of goods and services from within the EU27. Cash holdings cover liquidity needs —payments and receipts— throughout the purchasing, production, and sales cycle. Outstanding customer receivables and supplier payables arise from the payment terms agreed as part of the terms of exchange in customers' sales and in supplier's purchases. Because companies are both customers and suppliers, the net balance is recorded to avoid double counting[2].

As noted above, operating fixed assets do not appear in the Financial Accounts and must therefore be estimated *ad hoc* to complete the asset side of the balance sheet. In this study, the monetary value of operating fixed assets at the end of period (year) t are calculated using the perpetual inventory method as follows:

$$p_{Kt}K_t = (1-\delta_t)p_{Kt-1}K_{t-1}\frac{p_{Kt}}{p_{Kt-1}} + p_{Kt}I_t \qquad [1]$$

Where p_{Kt} is the current purchase or repacement cost of one unit of service capital; K_t is the end of year t stock of units of service capital; δ is the depreciation rate of the capital services from its use in production and technical obsolescence; I_t is the units of capital services incorporated to the stock from investment in yeat t.

The term $(1-\delta_t)p_{Kt-1}K_{t-1}$ is the stock of capital services left after depreciation at the end of period t-1 valued at year t-1 prices. Multiplying the term by $\frac{p_{Kt}}{p_{Kt-1}}$ the stock is revalued at current market prices of capital assets, *i.e*. at replacement cost. Adding the current market value of the new units of capital services incorporated in period t, $p_{Kt}I_t$, we obtain the end of period t stock of capital service units valued at current market price of capital assets.

Fort the application of the permanent inventory formula to the valuation of the operating assets of NFC in EU27 we establish the following equivalences

$$p_{Kt}K_t \equiv Fixed\ operating\ assets_t$$

$$\delta_t p_{Kt-1}K_{t-1} * \frac{p_{Kt}}{p_{Kt-1}} \equiv Consumption\ of\ capital_t\ at\ replacement\ cost$$

$$p_{Kt}I_t \equiv Gross\ fixed\ capital\ formation, GFCF_t$$

$$p_{Kt} \equiv Price\ index\ (value\ 1\ in\ year\ 2000)\ deflactor\ of\ GFC_t$$

The consumption of capital and the GFCF are taken from the Annual Sector Accounts; the price index of gross fixed capital is taken from Eurostat. The application of the perpetual inventory method [1] requires having a value of the Fixed operating assets for the year 0, the first one of the series, year 2000 in our case. We have estimates of the stock of fixed operating assets of Spanish NFC in year 2000 (Salas Fumás, 2021). Then we assume that the year 2000 current value of fixed operating assets of EU27 NFC is proportional to that of the Spanish NFC,

[2] A third working-capital account, inventories, additional to cash holdings and net trade balance is omitted because the necessary information is unavailable.

with a factor of proportionality equal to the ratio of GFCF in EU27 and in Spain, in years 1999 and 2000 (average). It turns out that the resulting EU27 aggregate fixed operating assets of NFC is a value close to the difference between total financial liabilities and total financial assets of EU27 NFC from Financial Accounts data.

The monetary assets in the balance sheet, financial and operational, are valued at their nominal values reported in the Financial Accounts

The liability side of the balance sheet in Table 1 distinguishes between financial debt (bearing an explicit interest rate) and equity. Financial debt comprises loans and other debt; the year-end outstanding amounts for each item are drawn from the Financial Accounts at their reported nominal values. Equity is calculated as the difference between total assets and financial debt. The values of the monetary assets and liabilities drawn from Eurostat Financial Accounts are *consolidated* values[3]. The consolidated account values of financial and liabilities of NFC in EU27 will eliminate transactions between NFC within the UE.

2.2. Income statement

A company's income statement measures the revenue and cost flows arising from the purchasing, production and sales activities in which it participates directly during an accounting period, one year in our case. Published company income statements are prepared in accordance with generally accepted accounting principles. One such principle is that only revenue and costs arising from transactions with third parties, whose values can be verified by third parties (auditors), are recognized. The application of conventional accounting principles gives as final result the net profit, difference between revenues and explicit costs. However, in the calculation of economic profits the costs can be explicit or opportunity costs. Table 2 summarizes the items of the income statement for the NFC according to the accounting criterion, first column, and to the economic criterion, second column.

TABLE 2. INCOME STATEMENTS UNDER ACCOUNTING AND ECONOMIC CRITERIA

Income statement: Accounting criteria	Income statement: Economic criteria (before tax)
Value of output	Value of output
− Intermediate consumption	− Intermediate inputs cost
= Gross value added (GVA)	**= Gross value added** (GVA)
− Compensation of employees	− Labor costs
= Gross operating profit	− User cost of capital
− Consumption of fixed capital	= Economic operating profit
= Net operating profit	Profit attributable to financial assets and liabilities (financial income − financial costs)
+ Financial income	
= Earnings before interest and taxes	
− Financial expenses	
− Direct taxes (profit and wealth)	
= Net profit	

Source: Authors' own compilation.

The value of the output includes the revenues from sales to the market of the goods and services produced in the EU27. Production requires three inputs, intermediate goods, labor and capital. The cost of labor and of intermediate inputs are both explicit and the difference between the value of the output and the costs of these inputs gives the gross operating profit (first column). Continuing with the first column, gross profit minus depreciation gives the net profit from production in the UE for market sale. The financial income corresponds to the revenues from the monetary assets; together with the net operating profits determine the accounting profits

[3] Eurostat defines "consolidated" values as follows: "The consolidated financial account of a sector shows the changes in financial assets and liabilities due to financial transactions between institutional units classified in the sector under consideration and other institutional units or the rest of the world. Compared to the non-consolidated financial account, the financial transactions between institutional units classified in the sector under consideration are eliminated from the consolidated financial account. The external financial account is consolidated by definition" (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Non-consolidated_financial_account).

generated from the assets in the balance sheet named earnings before interest and taxes. The interest expenses from financial debt and the profit taxes are costs in the calculation of the net profit.

The economic profit, second column is equal to the revenues from sales minus the costs of the three inputs used in production. Two are explicit and the third, capital cost is an opportunity cost. In general, the capital services that firms combine with labor in production (adding value to the intermediate inputs) are supplied by capital goods owned by the company through which the firm is constituted. The operating-assets account on the balance sheet records the current replacement value of the owned capital goods that provide production services over their useful economic lives, which exceed one year. Because the firm obtains capital services from assets it owns, there is no market transaction and accounting standards do not recognize a corresponding cost in the calculation of profit. Yet these services do have an economic or opportunity cost: first, because assets lose value over time; and second, because the funds financing them forgo the financial return available from an alternative investment with similar risk.

The economic operating profit is formally expressed as,

$$Operating\ economic\ profit_t = p_t Q_t - w_t L_t - c_t K_{t-1} \qquad [2]$$

Where p_t is the market selling price of one unit of output; Q_t is the number of units of output sold; w_t is the market price of one unit of labor services; L_t is the number of units of labor services used in production; c_t is the per unit of capital service user cost of capital, explained in more detail below; K_{t-1} is the stock of units of capital services available for production at the start of period t.

The corresponding items of the National Accounts in [2], except the term user cost of capital that will be analyzed separately below, are:

$$p_t \equiv Index\,(value\ of\ 1\ in\ 2000)\ of\ the\ GDP\ price\ deflator\ in\ the\ EU27_t$$

$$p_t Q_t \equiv Gross\ Value\ Added_t$$

$$Q_t \equiv \frac{Gross\ Value\ Added_t}{GDP\ price\ deflator\ index_t}$$

$$w_t = Index\,(value\ 1\ in\ 2000)\ of\ the\ labor\ cost\ in\ the\ EU27$$

$$w_t L_t = Compensation\ of\ employees_t$$

$$L_t = \frac{Compensation\ of\ employees_t}{Cost\ of\ labor\ deflator_t}$$

The calculations are adapted to the information available; for example, no specific deflators for institutional accounts data, in particular for NFC, are available. Ideally the labor input could be measured by the hours worked, but again no data on this variable is available separate for the corporate sector.

2.2.1. User cost of capital

As noted above, economic operating profit recognizes that the fixed capital stock—owned by the company, recorded as an operating asset on its balance sheet, and supplying capital services to the production process—has a user cost even though no transaction with an external party takes place (if the capital assets are rented, the user cost is the rental payment). The user cost per unit of capital services employed in production in period t is given by (Jorgenson, 1963):

$$Unit\ user\ cost_t = c_t = p_{Kt}\left(\frac{r_t - E\left(\dot{p}_{Kt}\right)}{1-u} + \delta_t\right) \qquad [3]$$

Where p_{Kt} is the market price of one unit of fixed capital service in period t, as defined above; r_t is the expected nominal rate of return of the corporate operating assets in alternative investment of similar economic risk and, consequently, the opportunity financial cost for those that finance the invested capital; $E(\dot{p}_{Kt}) = E\left(\frac{p_{Kt} - p_{Kt-1}}{p_{Kt-1}}\right)$ is the expected annual rate of change in the market prices of the fixed operating corporate assets when the investment is made: if the price of owned corporate assets goes up(down) in the period there is a capital gain (loss) that lowers (increases) the effective financial cost; u is the profit tax rate; δ_t the rate of depreciation through use or obsolescence of one unit of capital service in period t, assumed fully tax deductible in the calculation of the taxable profit. We define the intermediate expected return, $R_t = \frac{r_t - E(\dot{p}_{Kt})}{1-u}$ as the before tax rate of return forgone per euro invested in financing the purchase of the unit of capital.

The total user cost of the fixed operating assets in year t imputed when calculating the economic profit in the income statement equals the cost per unit multiplied by the stock of capital units at the end of period t-1 (start of period t).

$$Total\ user\ cost\ of\ \ fixed\ assets_t = c_t K_{t-1} = (R_t + \delta_t) p_{Kt} K_{t-1} \qquad [4]$$

The item Consumption of fixed capital in the column one of Table 2 correspond to the depreciation term $\delta_t p_{Kt} K_{t-1}$ of the total user cost of capital. Therefore, the net operating profit in the accounting income statement, first column, differs from the economic operating profit in the economic income statement, second column, in that the net operating profits does not impute the opportunity financial cost of the operating assets, $R_t p_{Kt} K_{t-1}$. Alternatively, the implicit depreciation rate can be calculated with the observed data as

$$\delta_t = \frac{Consumption\ of\ capital_t}{Fixed\ operating\ assets\ \text{in}\ t-1}$$

The financial opportunity cost of the operating assets R_t is not reported in the official statistics and will have to be estimated. The opportunity cost R_t is determined by r_t, the expected nominal return from alternative investments of similar risk, the expected rate of price changes, $E(\dot{p}_{Kt})$, and the corporate tax rate, u. The return r_t will be estimated as the sum of the market interest rate of debt plus a risk premium.[4] The expected inflation or deflation of the market price of operating asset $E(\dot{p}_{Kt})$ will be calculated from the observed time trend of the GFCF price deflator. The profit tax rate is set equal to $u = 0.2$. The risk premium additional to the interst rate of corporate debt will be calibrated so that the average of the resulting R_t in the entire time period is between 6%-7%.[5] The detail of the calculation will be presented in a later section.

2.3. Sources and uses of funds

The sources-and-uses-of-funds statement calculates the balance of the company's cash movements during the accounting period: the difference between cash inflows and cash outflows. In this study, the statement is simplified. Cash inflows comprise net accounting profit plus consumption of fixed capital (which is a cost but not a cash outflow because capital is consumed from the existing stock), whereas cash outflows are limited to dividend payments and expenditure on newly acquired fixed capital goods for production. The difference between inflows and outflows measures the NFC sector's net lending to other sectors of the economy (+) or its net borrowing from them (−), as shown in Table 3.[6]

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[4] A standard measure of the financial cost of capital is calculated as the weighted average of the cost of debt plus and the cost of equity. The calculation requires knowing the financial structure of asset invested, *i.e.* proportions of debt and equity. They are known for all corporate assets but not for only operational assets. The financial structure will affect the financial risk for the investors, increasing with leverage, on top of the economic risk. The risk premium in this study will be calibrated for operational assets financed with only equity so it will consider only compensation for economic risk.

[5] We take these values from Fama and French (1999) that estimated a real pre tax rate of return for the operating assets of non-financial corporate sector in the USA for the period 1950-1996 of 6% annual.

[6] In general, the sources-and-uses-of-funds statement that complements companies' financial statements, together with the balance sheet and income statement, includes the change in working capital (the difference between current assets and current liabilities) during the accounting period.

TABLE 3. FUNDS GENERATED BY ECONOMIC AND FINANCIAL ACTIVITY AND THEIR USES

Funds generated	Uses of funds
Net profit	Gross fixed capital formation
Consumption of fixed capital	Dividends distributed
	Net lending (+) / net borrowing (−)

Source: Authors' own compilation.

A surplus of funds generated over the amount used to finance new investment in productive capital and pay dividends —a positive balance— may be retained within the firm as an increase in cash holdings, used to acquire financial assets, or used to repay financial debt. Funding needs —a negative balance— must be covered by additional financial debt or new equity issues.

2.3.1. Summary of ratios combining items form income statement, balance sheet and sources and uses of funds

The analysis of business results from accounting statements often involves de calculation of ratios between variables within the same statement or coming from different statements, so that the absolute value of the variable in the numerator is normalized per euro of value of the variable in the denominator. Commonly used ratios are profit margins and rates of return. Profit margins measure euros of a measure of profit, for example, net operating profit per euro of revenue from sales. A rate of return is a measure of profit per euro of asset invested to generate the profit in the numerator.

Table 4 shows a list of ratios, including the respective definition, way of calculation and bring description of its meaning. The information of the table is self-contained and no further information is given in the text. Notice

TABLE 4. LIST OF RATIOS OF VARIABLES FROM THE ACCOUNTING STATEMENTS THAT WILL APPEAR AT SOME POINT LATER IN THE TEXT

Ratio	Calculation	Description/Comment
Labor share of GVA	Employee compensation/GVA	Represents the share of GVA allocated to remunerating the labor factor (contracted *ex ante*)
Gross operating margin (capital share)	Gross operating profit/GVA	Represents the share of GVA that remunerates capital and entrepreneurship (residual)
Net operating margin	Net operating profit/GVA	Share of remuneration to capital after deducting the cost of maintaining productive capacity through depreciation
Economic profit margin	Economic profit/GVA	Euros of economic profit per euro of GVA
Gross operating return, ROAG	Gross operating profit/Operating assets	Return per euro of capital invested in production in the EU
Net operating return, ROAN	Net operating profit/Operating assets	Return per euro of capital invested in production in the EU, net of depreciation
Economic operating return	Economic profit/Operating assets	Economic profit per euro of operating assets
Return on financial assets	Financial income/Financial assets	Return per euro invested in financial assets unrelated to production in the EU
Return on total assets	(Net operating profit + Financial income) /Total assets	Return per euro of total assets on the balance sheet
Average cost of financial debt	Interest paid/Financial debt	Average effective interest rate on debt with an explicit cost
Return on equity	Net profit/Equity	Accounting profit freely available per euro of equity
Internally generated funds paid as dividends	Dividends paid/Funds generated	Share of funds generated (net profit plus capital consumption) distributed as dividends
Share of GFCF in total internally generated funds	Gross fixed capital formation/ Funds generated	Equivalent to the share of generated funds reinvested in capital for production in the EU
Investment rate	Gross or net fixed capital formation/Fixed operating assets	Investment in new capital before or after depreciation per unit of existing capital stock

Source: Own elaboration.

that gross value added, GVA, replaces revenues from sales or the value of output in the calculation of the profit margins. The reason is that Eurostat provides information about the GVA aggregate for the NFC in the EU27 but does not provide information about revenues from sales. These ratios will be referenced and/or calculated at some point latter in the exposition

3. CONCEPTUAL FRAMEWORK

As advanced in the introduction, the aim of the study is to assess the performance of the NFC sector in the EU27 in the period 2000-2025. In particular, it examines whether the evolution of the balance sheet, income statement and sources-and-uses-of-funds statement of the EU27 NFC sector is consistent with the predictions of profit-maximizing behavior. Obviously, the aggregated values of the variables used in the analysis does not capture the heterogeneity across countries, industries and firms. Then, the analysis must be necessarily exploratory and the results only indicative. It should help to make comparisons with reports that use similar aggregate data (referenced in the literature review section), but that reach different conclusions. The corporate decisions to be analyzed are separated into operational (produce goods and services in the EU), and investment (the uses of internal generated funds) ones.

3.1. Operational output and input production decisions

The operational decisions have to do with production of goods and services in the EU27 to be sold in markets, internal or external: How much to produce, with what quantities of inputs labor and capital. The profit maximization criterion for making these decisions will be conditioned by the working of output and input markets, and by the production technology. Along the exposition we will assume that the firms that make production decisions are price takers, *i.e*. they do not have power to influence market prices. The production technology is captured by the (representative) neoclassical production function, $Q = F(L,K)$, with the following properties: the output increases with the input quantities but at a decreasing rate; increases in the quantities of the two inputs at the same time result in an increase in output les tan proportional (decreasing returns to scale). The evolution of the technology over time is driven by neutral or non-incorporated technological progress. One example of production function considered in the analysis is the Cobb-Douglas,

$$Q(t) = A(t)L(t)^{\alpha}K(t-1)^{\beta} \quad [5]$$

Where $A(t)$ captures the trend of neutral technological progress and α, β are non negative parameters with $a + \beta = \gamma < 1$ (decreasing returns to scale) and the rest of variables have been defined before; the values of the variables are referenced to a particular period of time, $t, t-1$

All these assumptions together imply that the conceptual framework to model corporate behavior in the EU in fact, it models the profit maximizing behavior and outcomes of a *representative* firm behaving in a competitive way (price taker) in output and input markets that produces with a technology incorporated into a production function. The results from the application of the framework will provide insights about the expected relationships among observed aggregates, but obviously they obscure the underlying heterogeneity within the EU and should be viewed under these assumptions and limitations.[7]

The first order conditions for maximum profit given by [2] under the assumptions just listed are as follows:

$$\frac{Q}{L} = \frac{w/p}{E_L} \quad [6]$$

$$\frac{Q}{K} = \frac{c/p}{E_K} \quad [7]$$

[7] Salas Fumás (2021) presents the first order conditions for a firm with market power in the output and labor market. See also Karabarbounis (2024) for similar derivations in the context of explaining the determinants of equilibrium labor, capital and economic profit shares (Technical Appendix).

Where E_L, E_K are, respectively, the elasticity of output to the quantity of labor and capital input; for the Cobb Douglass production function, these elasticity $E_L = \alpha, E_K = \beta$, both constant. The ratio $\frac{Q}{L}\left(\frac{Q}{K}\right)$ represents the units of output produced per unit of labor (capital) input in the optimal profit maximizing solution, *i.e.* the partial average productivity of labor and capital in the optimal solution. For constant elasticity, Cobb Douglas, the average productivity of labor and capital in [6] and [7] does not depend on the technological parameter $A(t)$. Under more general production function forms, for example CES, the parameter may affect labor and capital partial productivity through the value of the elasticity E_L and E_K.

For given elasticity of output to the respective input variable, the partial average productivity evaluated at profit maximizing values of the variables increases with the real price of the respective input, w/p and c/p. Similarly, for given real prices of inputs, the respective productivity of labor and capital decreases with the own output elasticity. Automatization generally alters the parameters (elasticity) of the production technology in a way that labor intensity decreases, lower α while capital intensity increases, higher β. Therefore, automatization would be expected to increase (decrease) average productivity of labor (capital) input in the profit maximizing equilibrium.

For a price taker profit maximizing firm the quantity of labor (capital) per unit of output, partial productivity, in the equilibrium increases with the real price of labor (capital) and decreases with the labor (capital) output elasticity.

The total factor productivity, TFP, indicator provides a measure of the ratio between the output produced and an aggregate measure of all inputs used in production, labor and capital in our case. From the production function in [5], the TFP in period t would be equivalent to the level of non-incorporated technological knowledge in period t, captured by $A(t)$:

$$TFP(t) = \frac{Q(t)}{L(t)^{\alpha} K(t-1)^{\beta}} = A(t)$$

An in terms of growth over time (taking logs and differentiating with respect to time t (low case letters are the original in logs; the time notation has been excluded to save in notation),

$$\dot{tfp} = \dot{a} = \dot{q} - \alpha\dot{l} - \beta\dot{k} \qquad [8]$$

Which is known as Solow's residual.

Equation [6] and [7] can alternatively written as

$$\frac{wL}{pQ} = E_L \qquad [9]$$

$$\frac{cK}{pQ} = E_K \qquad [10]$$

Together with

$$\frac{\Pi = pQ - wL - cK}{pQ} = 1 - (E_L + E_K) > 0 \qquad [11]$$

The lefthand side of the equations [9] and [10] is the share of the cost of the respective input in the value of the produced output (the gross value added in our setting); they correspond, respectively, to the labor and capital share in Table 4. Equation [11] gives the economic profit per euro of gross value added in the profit

maximizing solution (also included in the list of ratios in Table 4). From equations [8] to [10], with Cobb Douglas production technology and competitive (price taking) behavior by firms, the labor, capital and economic profit share will remain constant over time, as long as the elasticity of output to input stays constant too. Observed differences between estimated elasticity of output to the respective input from the production function and the corresponding input share are used as evidence of deviation from price taken behavior, i.e., evidence of market power by firms (De Loecker et al., 2020).

For the price taker profit maximizing firm, the labor (capital) share in the equilibrium is equal to the elasticity of output to labor (capital). With decreasing returns in production, the profit share in the equilibrium will be positive.

Other ratios in the list of Table 4 that can be calculated with values of the variables in their profit maximizing equilibrium are the following:

$$Gross\ operating\ \ profit\ margin = \frac{pQ - wL}{pQ} = 1 - E_L \qquad [12]$$

$$Gross\ operating\ return = \frac{pQ - wL}{p_K K} = \frac{pQ - wL}{pQ} * \frac{pQ}{p_K K} = \frac{1 - E_L}{E_K}(R + \delta) \qquad [13]$$

Where [13] follows from [12], [10] and $c = p_K(R + \delta)$.

The conceptual framework above suggests some issues to be explored with the aggregate NFCs data: Does the partial productivity of inputs increases with the real input price? Do cost and profit shares remain stable over time (stable technology) or rather they show some trend (changes in technology and or market conditions)? If the shares change, is the change consistent with the evolution of partial productivity given the evolution of the real input prices? Does the proportionality between gross operating return and user cost of capital per euro invested in operating assets hold in the data?

3.2. Growth and capital Investment

From the profit maximizing conditions one can solve for the optimal values of inputs and output. In general, these values will depend on the exogenous parameters and variables of the model. In particular,

$$J^*(t) = f^j\left(A(t); \frac{w(t)}{p(t)}, \frac{c(t)}{p(t)}\right) \quad J = Q, L, K \qquad [14]$$

For example, for the Cobb Douglass production function

$$Q = AL^{\alpha}K^{\beta}$$

The optimal values of the endogenous variables are given by (ignoring the time notation)

$$L^* = \left(\frac{p\alpha A\left(\frac{\beta}{\alpha}\frac{w}{c}\right)^{\beta}}{w}\right)^{\frac{1}{1-\gamma}}; K^* = \left(\frac{p\beta A\left(\frac{\alpha}{\beta}\frac{c}{w}\right)^{\alpha}}{c}\right)^{\frac{1}{1-\gamma}}; Q^* = \left(A\alpha^{\alpha}\beta^{\beta}\left(\frac{w}{p}\right)^{-a}\left(\frac{c}{p}\right)^{-\beta}\right)^{\frac{1}{1-\gamma}}$$

Restoring the time dimension, taking logs in Q^* and taking the derivative of logs with respect to time, the output growth rate predicted from profit maximizing quantities on labor and capital is given by:

$$\dot{q} = \frac{1}{1-\gamma}\left(\dot{a} - \alpha\left(\frac{\dot{w}}{p}\right) - \beta\left(\frac{\dot{c}}{p}\right)\right) \qquad [15]$$

Where lower case letters *q* and *a* are the log transformation of the original variables, and $\left(\frac{w}{p}\right)$ is the rate of growth in the real cost of labor (growth in cost above the growth in output price); similarly, $\left(\frac{c}{p}\right)$ is the rate of growth of real per unit user cost of capital

Equation [15] gives an **equilibrium mapping between technological progress, factor-price movements, endogenous factor accumulation, and observed output growth.** For the profit maximizing firm the rate in growth in output over time is the net effect of technical progress minus the sum of the elasticity weighted increases in real input prices, multiplied by a factor of $\frac{1}{1-\gamma}$. From equation [14] one obtains an estimation formula for technical progress, TFP growth, alternative to the conventional Solow residual that to the best of our knowledge has not been explored and applied so far,

$$\dot{a} = (1-\gamma)\,\dot{q} + \alpha\left(\frac{\dot{w}}{p}\right) + \beta\left(\frac{\dot{c}}{p}\right) \qquad [16]$$

We estimate growth rates of real prices of labor and capital inputs as well as the growth in total output for the aggregate of NFC in the EU27 for a preliminary application of [15]

For a price taker profit maximizing firm the output growth rate will increase with technical progress and will decrease when real input prices increase. For the same firm, neutral technical progress induces output growth directly (for fixed input quantities) and indirectly through the induced growth in the quantity of labor and capital used in production. The estimate of the technical progress from the Solow residual ignores the indirect effect and can give a bias estimate of the true technical progress.

3.2.1. Investment

Firms will adjust the quantity of labor used in production in response to changes in the exogenous variables in a short period of time, while the adjustment of the capital stock will take more time because of adjustment costs that increase with the speed of adjustment. The investment in capital in t, I_t, observed through the GFCF at constan prices, will indicate that the current stock of capital is different from the optimal or desirable one, higher if the investment flow is positive and lower it is negative.

The economic theory of investment has demonstrated that the rate of capital investment in period t along the adjustment path from the existing stock of fixed operating assets to the desired one, will be an increasing function of a cost benefit ratio of marginal return over marginal cost, also known as Tobin's q (since Tobin's was the first to explain the investment rate in these terms (Tobin, 1969; Hayashi, 1982):

$$\frac{I(t)}{K(t)} = \delta(t) + \varphi(q(t)-1) \qquad [17]$$

The non-negative parameter φ depends on the magnitude of the adjustment costs. If adjustment cost and the value of the parameter were zero, then the adjustment from the current to the desired capital stock would be instantaneous and the investment rate would just be equal to the depreciation rate. With adjustment costs, the investment rate that is an indicator of the speed of adjustment will be an increasing function of the difference between the Tobin's q and 1 (value for which the marginal return is equal to marginal cost). Moreover, equation [17] predicts an investment rate lower than depreciation rate (decrease in capital stock) if q is lower than one, an investment rate higher than one if q is higher than one, and an investment rate equal to the depreciation rate if q equal to one.

The investment rate that results in the transition from the current capital stock to the desired one captures the investment related to producing the existing goods and services; it does not capture the investment in R&D for discovering new products and processes (innovation), not directly observable in our data (although the National Accounts include R&D investment and other intangibles in the GFCF). The empirical test of the predictions from [16] is also complicated by the fact that the Tobin's q is not directly observable and will have to be approximated by values of observable variables of rate of return and cost.

For a price taker profit maximizing firm capital investment is indicative of hidden costs of adjustment in the transiting from current to desired capital stock. The rate of investment is expected to increase with the difference (relative) between current investment rate of return and financial cost as proxy variables of the unobserved q ratio.

3.3. Uses of internal generated funds and changes in monetary assets

The analysis of the allocation of internally funds generated by the regular corporate activity can be informative about the criterion under which corporate decisions are made and, in particular whether the observed values of the selected variables is consistent or not with profit maximizing behavior (shareholders' preferences).

Internally generated funds, as defined in Table 3, can be allocated to different uses: financing investment in domestic production capacity, finance FDI (internationalization, active investor), pay dividends to shareholders, devolution of debt, and invest in monetary or investment funds (financialization, acting as a passive investor). Under perfect capital markets and aligned managerial and shareholder interests, internally generated funds will be retained only when their expected risk-adjusted return of the corporate portfolio of investment projects exceeds the return shareholders could obtain investing directly in eternal investments of equivalent risk (the risk adjusted return earned by the shareholders if they invest the received dividends by themselves). Similarly, the choice between investing the retained profits in financing investing in capital for domestic production or investing it in capital assets to produce abroad will depend on comparative risk adjusted rates of return.

Imperfections in capital markets, a realistic situation, create frictions that complicate the inference of profit maximization from observed decisions on the allocation of retained earnings. For example, corporate directors and managers make dividend payment decisions to communicate to the external investors private information that they have. It has been demonstrated the Information asymmetries between managers and investors result in a "pecking order" in the use of funds so that differences in costs and returns respond to factors different from economic or financial risk. In practice, it may be difficult to discern whether some observed deviations of behavior from what could be expected under profit maximization truly respond to deviations from profit maximization or to adaptation to market failures. Another limitation for the analysis come from the data availability. For example, the information on financial assets in the balance sheet does not distinguish those that originate from FDI decisions and those from passive investor financial decisions.

With these considerations in mind, the explanations behind the observed uses of internally generated funds by the aggregate of NFC in EU27 will be inferred from two types of analysis. First, we observe the evolution of the shares of GFCF, dividends paid and net cash flow (positive or negative) over time. If the shares of funds to finance GFCF and to pay dividends remain stable and the net funds fluctuates according to the business cycle, the evidence could be indicative that the financial investments, including FDI, are subordinated to exhausting the profitable domestic investment opportunities. If the net funds are stable and the share of fixed capital investment and dividends paid fluctuate then the evidence would indicate that the priority is other than domestic production. Second, the changes in the financial assets in the balance sheet over time will be correlated with changes in the stock of financial assets of the EU27 abroad (no information is available about the stock of financial assets of NFC abroad at the EU level). A positive correlation should be indicative that the growth in monetary assets in the balance sheet responds at least in part to the internationalization of investment and production by NFC in the EU27.

4. DATA

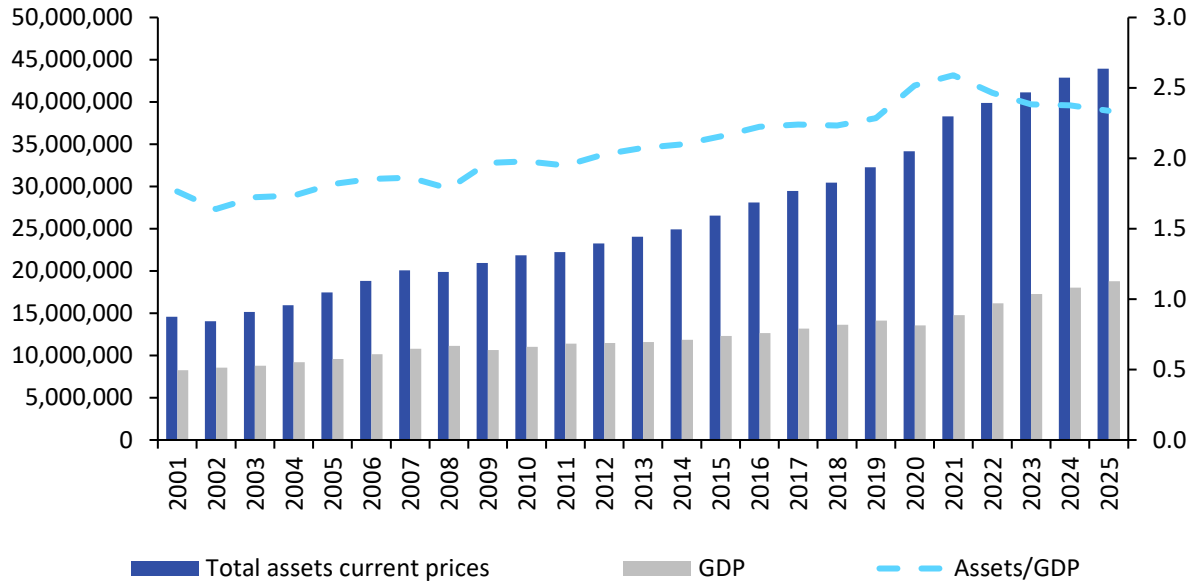
This section presents annual aggregate data for non-financial corporations (NFCs) in the EU27 over the period 2000–2025. The presentation follows the organization of the balance-sheet items, the income statement, and the sources-and-uses-of-funds statement shown in Tables 1, 2, and 3 of section 2, respectively.

4.1. Balance sheet

Figure 1 shows total assets (equal to total liabilities and equity) of NFCs in the EU27, estimated from the consolidated Eurostat statistical information for each of the accounts in Table 1. For comparison, the same chart also shows the evolution of EU27 GDP, likewise in current euros, together with the evolution of the ratio between the two variables.

Figure 1. TOTAL ASSETS OF NFC, GROSS DOMESTIC PRODUCT, GDP, AND RATIO OF TOTAL ASSETS TO GDP. AGGREGATE FOR THE NFC IN EU27

Millions of current euros



Source: Own elaboration from Eurostat data.

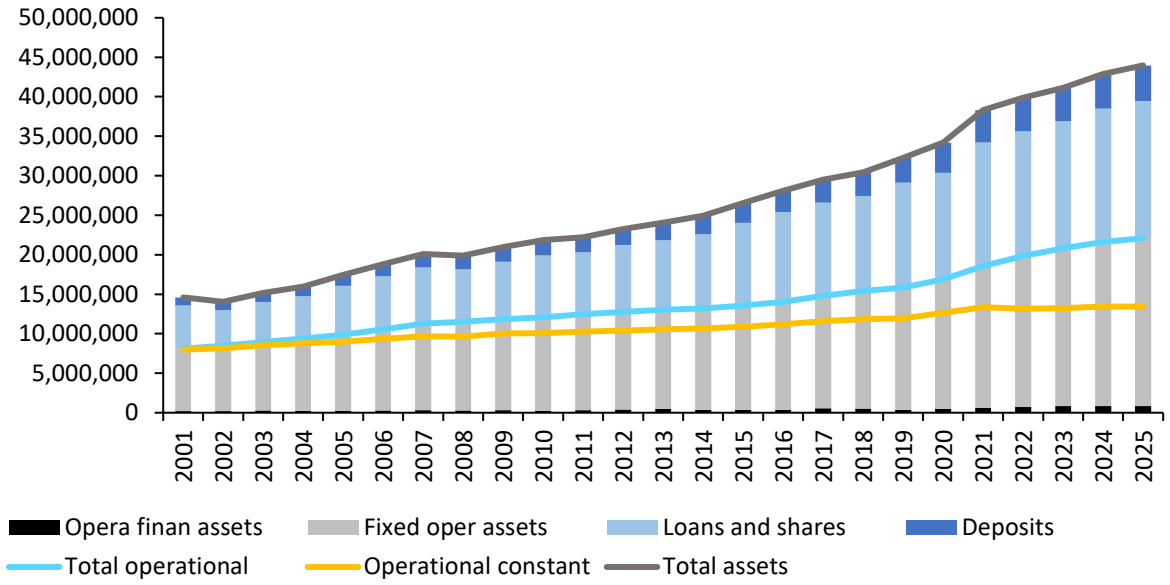
In 2001, the first year in the series, total assets of EU27 NFCs amounted to close to EUR 15 trillion. By 2025, at current prices, assets had almost tripled to EUR 44 trillion. Nominal growth is positive throughout the period except in one year, when it is -1%. No suitable deflator is available to separate growth into a nominal price component and a real component. For this reason, nominal GDP for the EU27 over the same period is used as a benchmark. Until 2008, the year of the financial crisis, the relative growth of assets and GDP was similar and the ratio between the two variables remained stable at around 1.75. From 2009 to 2019, total assets grew faster than GDP and the ratio increased to 2.3 by the end of the period.

The health pandemic and the contraction in GDP in 2020 and 2021 caused an exceptional increase in the ratio. In the post-pandemic period, total assets grew more slowly than GDP and the ratio declined, so that by 2025 the euros of assets per euro of GDP were practically the same as in 2019. Thus, over the last four years the assets-to-GDP ratio, with both variables measured in current euros, returned to a period of stability similar to that preceding the financial crisis, although at a higher level.[8]

[8] Some exploratory analysis reveal that absolute changes in operating assets of NFC are positively correlated (50%) with changes in GDP of the EU27, but increases in total assets are uncorrelated with GDP changes.

The composition of total assets between financial and operating assets, together with the different items comprising each category according to Table 1, changes over the period; Figure 2. In the early years of the series, total assets were divided into approximately 40% financial assets and 60% operating assets. Subsequently, financial assets increased their share of total assets to almost 50% in 2015, a proportion that has remained stable over the last ten years. The asset composition of EU27 NFCs therefore appears to have stabilized at an almost equal split between operating assets, which include capital assets used to produce goods and services in the EU, and financial assets, that are disconnected from production in the EU but not necessarily from production outside the EU, through companies' foreign direct investment.

Figure 2. COMPOSITION OF TOTAL ASSETS OF NFC IN THE UE27. MILLIONS OF CURRENT EUROS EXCEPT OPERATIONAL: EXCEPT OPERATIONAL CONSTANT (AT 2000 PRICES)



Source: Own elaboration from Eurostat data.

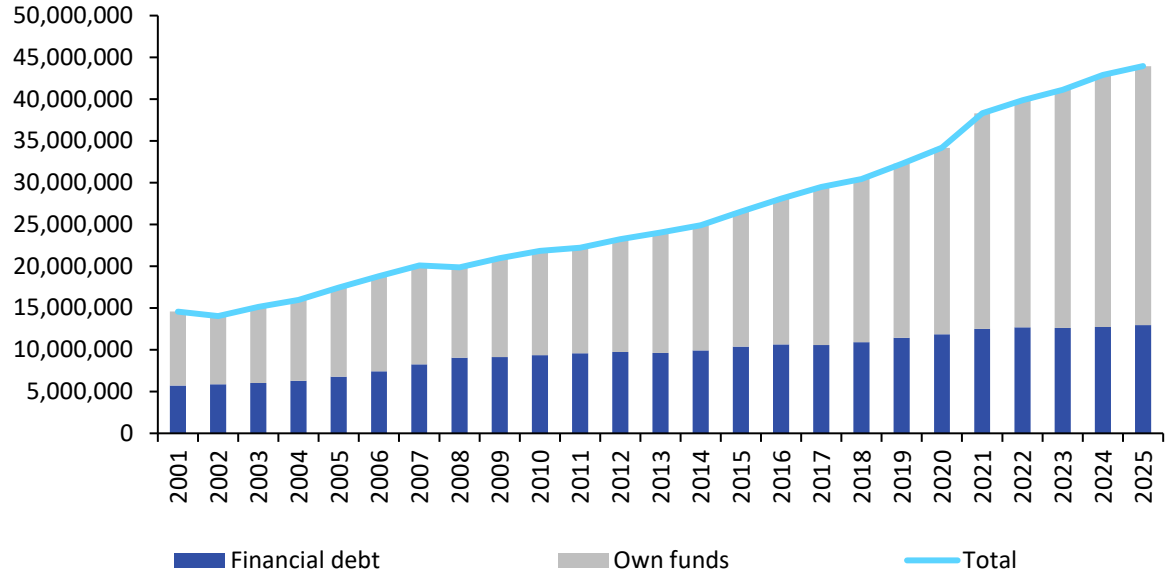
Financial assets, in turn, consist of bank deposits and loans and shares, in proportions that remain stable over the period at around 20% and 80%, respectively. Operating assets include current financial operating assets (cash plus net trade credit) and fixed operating assets. In relative terms, current financial operating assets account for barely 2% of total operating assets. Operating assets can therefore be regarded as practically equivalent to fixed operating assets.

Operating assets at constant 2000 euros, using the fixed-asset price index as deflator, rise from EUR 8 trillion at 2000 prices in 2001 to EUR 13.4 trillion in 2025, whereas operating assets at current prices amount to EUR 22.1 trillion in 2025. At current prices, operating assets multiplied by almost 2.7 over the period, but after removing the increase in fixed-capital-goods prices, the real increase was only 66%; that is, the gross fixed capital formation deflator—fixed-asset inflation—increased by 64% between 2000 and 2025.

The liabilities and equity side of the NFC balance sheet comprises financial debt and own funds; Figure 3. In 2001, financial debt of EU27 NFCs amounted to around EUR 6 trillion, implying a financial structure of 40% financial debt and 60% own funds. By 2025, financial debt had increased to EUR 13 trillion at current prices, but its share of total liabilities and equity had fallen to 30%. The time path of financial leverage is uneven. Between 2001 and 2006, the 40% share remained practically stable, but in the following two years it rose rapidly to 45.6% in 2008, the maximum for the whole period. From 2009 onward, the debt ratio declined continuously, stabilizing at 30% from 2023 onward.

Figure 3. COMPOSITION OF LIABILITIES SIDE OF THE BALANCE SHEET OF NFC IN EU27

Millions of current euros



Source: Own elaboration from Eurostat data.

Own funds are the counterpart to financial debt and therefore the balance-sheet liability/equity item that grows most strongly alongside total assets. Own funds are calculated as the difference between total assets and financial debt; that is, they measure the net worth of EU27 NFCs. Monetary assets on the balance sheet are valued at current market prices, so changes in their nominal value are reflected in changes in own funds. This explains why the correlation between the absolute year-on-year change in monetary assets and the year-on-year change in own funds exceeds 80%.

4.2. Income statement

The income statement summarized in Table 2 of section 2 above, distinguishes between the statement prepared under accounting rules —under which the revenue and cost items recognized in the calculation of profit for the financial year are those considered material— and an income statement prepared according to economic criteria, which takes all costs into account, including opportunity costs. Each statement in turn distinguishes between profits attributable to operating activities —producing goods and services for sale in the EU— and profits attributable to financial assets and liabilities on the balance sheet, in addition to corporate profit taxes.

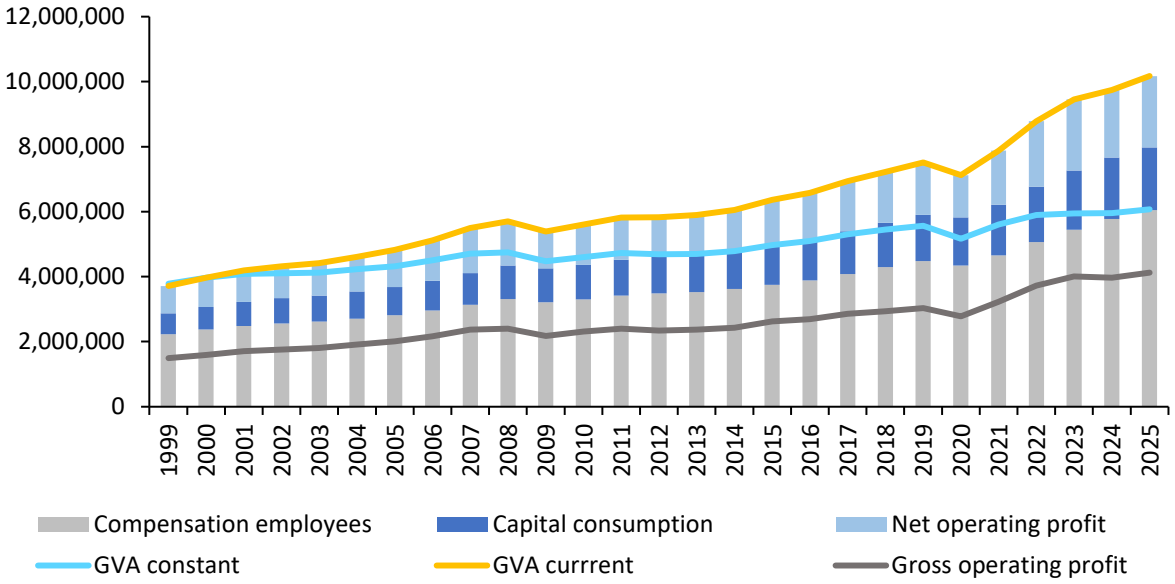
Figure 4 shows the results of the calculation of operating profit. For the calculation of accounting operating profits, the first revenue item, value of production, is replaced by gross value added (GVA), equal to value of production minus intermediate consumption. Eurostat publishes GVA but does not separately publish revenues and intermediate consumption. The period extends now from 1999 to 2025 because of Eurostat data availability.

At current prices, EU27 NFCs generated GVA of EUR 4 trillion in 2000. By 2025, current-price GVA had increased by a factor of 2.5, exceeding EUR 10 trillion. At constant 2000 prices (GDP deflator), growth is more modest: GVA reaches EUR 6 trillion in 2025, 1.5 times its 2000 level (the GDP deflator rises by 68% over the same period).[9] Real GVA growth is uneven: average annual growth of 2.8% between 2000 and 2007; 0% between 2008 and 2013; 2.9% between 2013 and 2019; and 1.6% between 2019 and 2025.

[9] The GVA of NFC represents about 50% of the GDP of EU27 at the start of the period but since 2022 and on the proportion increases to 54%.

Figure 4. EVOLUTION OF INCOME STATEMENT ITEMS FOR THE CALCULATION OF THE ACCOUNTING OPERATING PROFITS OF NFC IN THE EU27

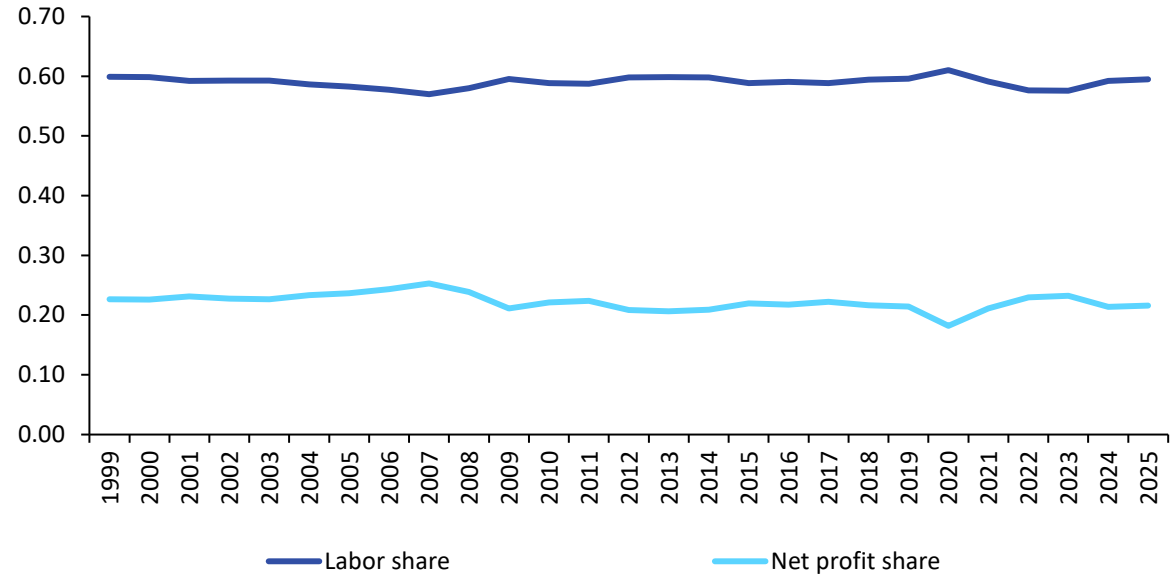
Millions of euros



Source: Own elaboration with data from National Accounts.

Compensation of employees at current prices evolves proportionally to GVA, with its share remaining relatively stable at 60% throughout the period. The complement of the labor-compensation share in GVA is gross operating profit. Thus, between 2000 and 2025, EU27 NFC GVA was stably divided into 60% labor compensation and 40% capital compensation; Figure 5. The EU27 labor-share results differ from those of other studies, particularly for the United States, where the labor share of GVA has been reported to exhibit a secular downward trend.[10]

Figure 5. LABOR SHARE AND NET OPERATING PROFIT MARGIN FOR NFC IN EU27: 1999-2025



Source: Own elaboration.

[10] See Karabarbounis (2024). Salas Fumás (2026) documents the stability of the labor share over time in Spanish NFC, but heterogeneity in the evolution across economic sectors.

Net operating profits —gross profits minus capital consumption— of EU27 NFCs amount to EUR 0.84 trillion in 2000 and EUR 2.2 trillion in 2025. As a share of GVA, net operating profit remains between 23% and 25% until 2008. After the financial crisis it falls and then remains stable at 21% for the rest of the period. The difference between the two subperiods is explained by the increase in capital consumption relative to GVA in the second subperiod. The EUR 2.2 trillion of net profit in 2025 is by far the highest nominal figure in the period. At constant 2000 euros (GDP deflator), however, 2025 net profit falls to EUR 1.31 trillion. This figure is practically unchanged over the last four years and only moderately exceeds the EUR 1.19 trillion of constant-price profits recorded in 2007 and 2019. The conclusion regarding the evolution of accounting operating profits therefore differs substantially depending on whether profits are measured at current or constant prices.

4.2.1. Economic operating profit

Calculating economic profit, the second column of Table 2, requires a prior estimate of the user cost of capital, $c_t = \left(\frac{r_t - E(\dot{p}_K)}{1-u} + \delta_t \right) p_{Kt}$. From what was already advanced in section 2.2.1, the depreciation rate δ_t will be calculated by the ratio capital consumption in year t over fixed operating assets at the end of year t-1; the evolution of the market price of fixed capital assets p_{Kt} will be approximated by the deflator of gross fixed capital formation, GFCF; and the effective profit tax rate $u = 0.2$. It is assumed that the profit tax base includes capital gains and losses on the capital stock and that tax depreciation coincides with economic depreciation. The opportunity nominal rate of return, r_t and the expected rate of change of market prices of capital services are estimated as follows:

$$r_t \equiv Equal\ to\ the\ cost\ of\ new\ bank\ los\ to\ NFC\ i\ the\ Euro\ zone\ (ECB\ data)$$

$$plus\ a\ risk\ premium$$

$$E(\dot{p}_{Kt}) \equiv Two\ years\ moving\ average\ of\ the\ annual\ rate\ of\ change$$

$$in\ the\ deflactor\ of\ GFCF\ up\ to\ year\ t$$

The risk premium is calculated from the Equity Risk Premium, ERP, estimates published by Damodaran (2026) for the US and by Geis et al. (2018) for the euro area scaled so that the average risk premium for the 25 years period is 4 percentage points.[11] The results from the calculations leading our estimate of the user cost of capital are presented in Figure 6.

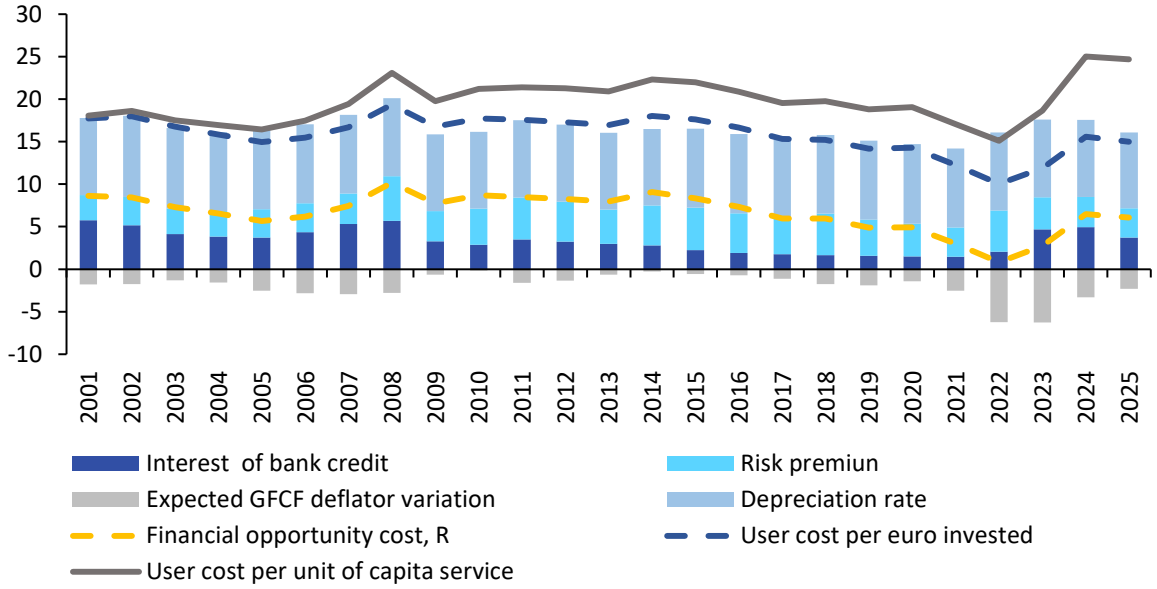
The average nominal interest rate of new bank credit for NFC in the euro area in the period 2001-2025 is 3.4%, and the average risk premium 4%. The average annual inflation rate in the price of fixed capital assets in the period is 2%; from these averages, the real expected return per euro invested, after taxes, would be 3.4+4-2=5.4%. The average real return before taxes, R, is 6.7%, and the average depreciation rate 9.2%. The average cost of capital per euro invested, expected return plus depreciation, $R + \delta$, is 15.9%. Finally, the average user cost per unit of capital service is $(R + \delta) p_K = 19.8\%$

The cost of new bank loans started at nominal annual rates around 5%, reaches its lowest value below 1.5% in 2021 and goes up again to close than 5% in 2024. The risk premium starts at values under 3 percentage points in the first years of the period, it goes up above 5 percentage points in 2008 and remains at values above 4 percentage points until 2019. The expected inflation of prices of capital goods contributes to lower the real financial expected returns during the whole period, although in a non-uniform way; the observed inflation rate of asset prices was higher than 8% annual during the late inflationary episode, which limited the increase in total cost from higher nominal interest rate of credit. The depreciation rate remains quite stable around 9% during the whole period. The estimated nominal user cost of capital per unit of capital services invested reached maximum values in the financial crisis of 2008, 21.7%, and by the end of the period, above 24%. To the first high contributed

[11] The average of ERP for the entire time period, 2000-2025, of these studies is close to 5 percentage points for the US, and of 6 percentage points for the euro area. We set an average risk premium of 4 percentage points for the whole period because our reference interest rate is not the risk free but the cost, interest rate, of new bank loans to NFC in the euro area, which would already incorporate a partial risk premium. Second, with the average risk premium for the 2000-2025 time period, the average expected return *R* is between the target 6%-7%.

Figure 6. USER COST OF CAPITAL PER UNIT OF CAPITAL SERVICE AND ITS COMPONENTS

Percentage



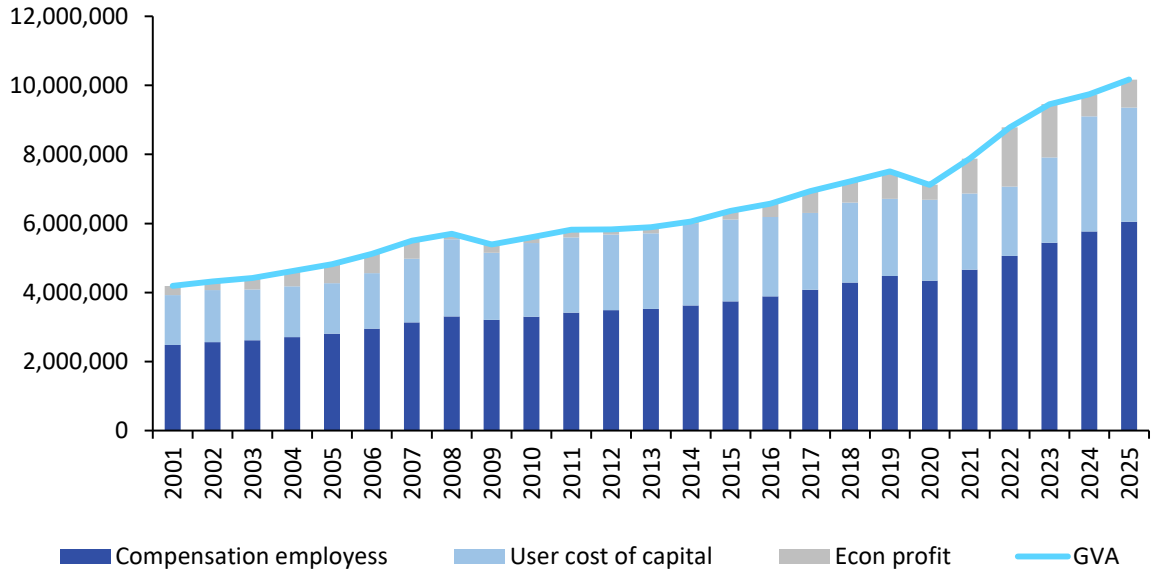
Source: Own elaboration elaboration as explained in the text.

the relatively high interest and risk premium, while to the highs by the end of the period contribute the inflation of prices of capital goods, p_K.

The total user cost of operating capital is calculated by multiplying the user cost per unit of capital service times the stock of units of capital stock, equal to the average of the stock at t-1 and t, at constant 2000 prices, $c_t K_{avet}$. Total production cost is the sum of labor cost —compensation of employees—, $w_t L_t$,and the total user cost of operating capital. The difference between revenues, $p_t Q_t$, measured by GVA in year t, and labor and capital costs yields the economic operating profit, $\Pi_t = p_t Q_t - w_t L_t - c_t K_{avet}$. The results appear in Figure 7.

Figure 7. ECONOMIC PROFITS FOR THE AGGREGATE OF NFC IN THE EU27 AND ITS DETERMINANTS

Millions of current euros



Source: Own elaboration from National Accounts and estimated user cost of capital.

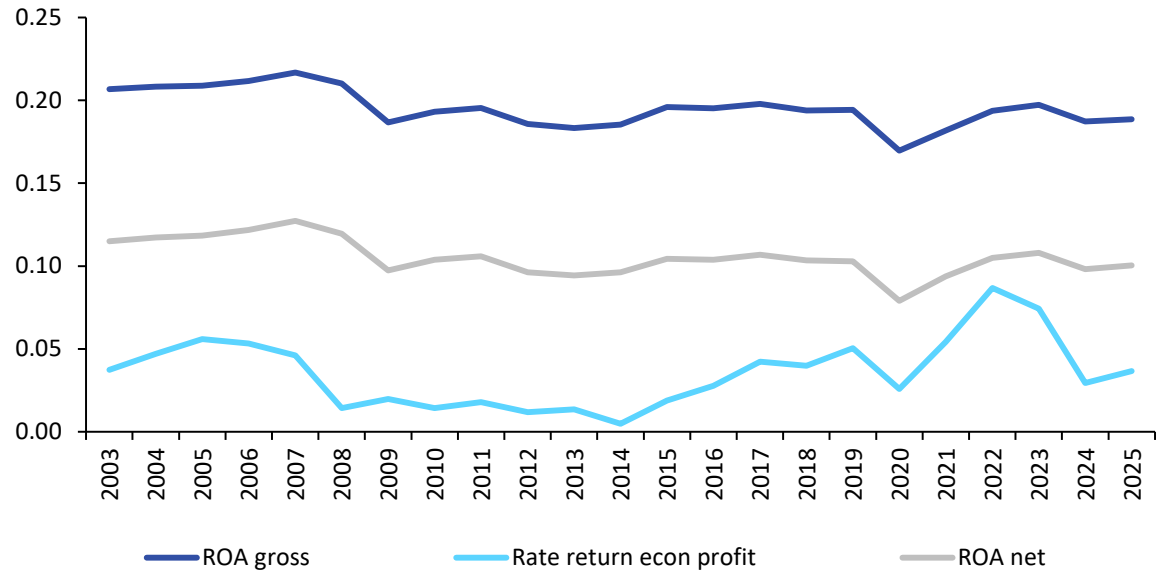
The gross value added and the labor cost coincide with those reported in the accounting income statement above. The total user cost of capital at current euros begins at around EUR 1.44 trillion at the start of the period and reaches EUR 3.3 trillion in the final years. Estimated economic profit is positive in every year but it shows substantial variation over time. It starts around 0.25 trillion of euros in 2001 and increases until 2007. From 2008 till 2014 economic profits are close to zero and from 2015 till the end of the period they rise again to a maximum of 1.7 trillion in 2022. The comparatively high economic profits in 2001-2023 coincide with the period of comparatively low user cost of capital according to Figure 6. In relative terms, on average for the 25 years period, the user cost of capital represents around 33% of the gross value added of NFC in the UE27, and the net economic profit around 7%. From Figure 5, the labor share is stable around 60% along the period, so some representative numbers of the shares of labor, capital cost and economic profit on gross value added of NFC in the UE27 are 60%, 33% and 7%, respectively.

4.2.2. Operating rates of return

Profits are now expressed in terms relative to the assets that contribute to generate them. From Table 4 in section 2, we calculate the gross operating return (ROA gross), the net operating return (ROA net), and the rate of return on economic profit dividing, respectively, the gross operating profit, the net operating profit and economic profit by the operating assets at current prices, average end of year t-1 and t. The results are represented graphically in Figure 8.

Figure 8. GROSS, ROA GROSS, AND NET, ROA NET, RATE OF RETURN ON OPERATING ASSETS, AND RETURN FROM ECONOMIC PROFITS

NFC in EU27



Source: Own elaboration.

ROA gross remains broadly stable at around 21% until the 2008 financial crisis. In 2009, it falls by approximately two percentage points to 19%, and from then onward stabilizes around that value, with some marked fluctuations —for example, a further two-percentage-point fall in 2020 attributable to the pandemic. Fluctuations in gross profitability are transmitted to the net one, ROA net, consistent with the stability of the depreciation rate around 9%. Then, net profitability evolves from an average of 12% between 2001 and 2008 to an average of 10% from 2010 onward. The average rate of return on economic profit along the 25 years period is 3.5%, but with notable fluctuations around the mean in line with the evolution of the numerator from Figure 7.[12]

[12] Given the stability of the labor share, the variability in the rate of return on economic profit is the reflection of the variability in the cost of capital share.

Rates of return and profit margins are mechanically related by the accounting identity, $ROAnet = \frac{Net\ operating\ profit}{Gross\ Value\ Added} * \frac{Gross\ Value\ Added}{Operating\ assets} = Net\ profit\ margin * Rotation$. From Figure 5, the net profit margin decreases after the pandemic, from 24% to 21%, tree percentage points. The calculations also show a slight decline in the rotation from 0.50 to 0.47, after the financial crisis. The decline in $ROAnet$ from 12% to 10% after the financial crisis, Figure 8, is explained by lower net profit margin, mainly, and by lower rotation. Crisis immediately lower the revenues from sales, but some component of costs, part of labor and practically all the depreciation of capital, are fixed. Then, the fall in revenues is translated into an amplified fall in profit margins. Since the adjustment of capacity also takes time, the fall in activity reduces the capacity utilization and ultimately the ratio of GVA over operating assets in the balance sheet.

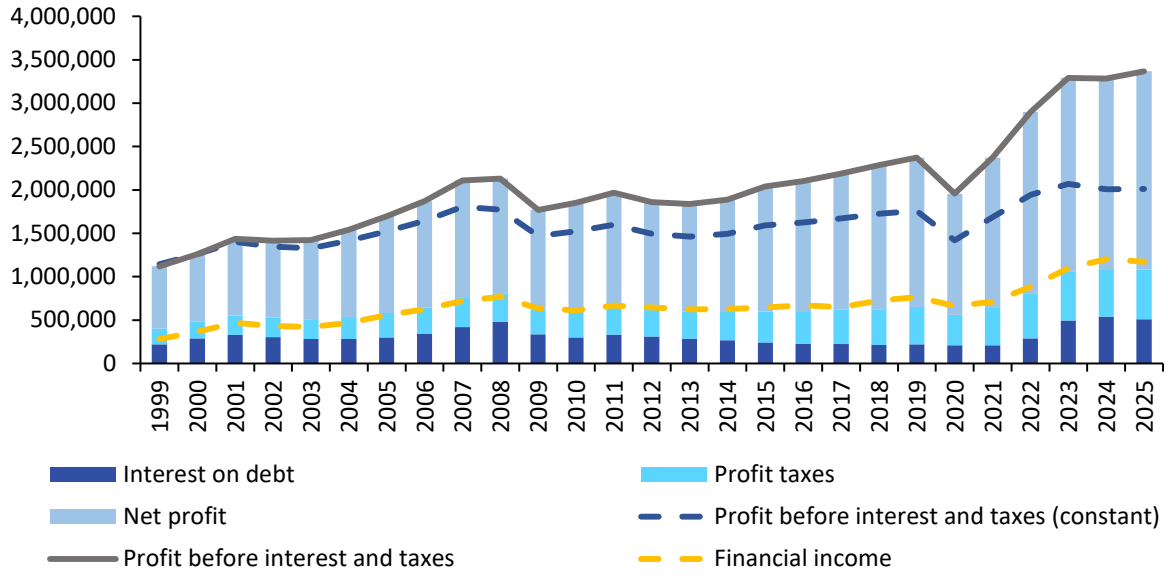
4.2.3. Financial results and net profit

For companies whose assets are devoted exclusively to producing for sale in the market and that finance their assets entirely with own funds, the income statement ends with accounting net operating profit or economic profit. For companies that hold financial assets and/or partially finance their assets with debt, the income statement continues below net operating profit by adding financial income to operating profit and subtracting financial expenses accrued on debt and corporate income taxes from earnings before interest and taxes (EBIT). The final result is net profit, or profit freely available to the holders of own funds, mainly shareholders. Figure 9 shows the time evolution of the items in the bottom down of the income statement, accounting for financial income and costs.

At current prices, EBIT reaches EUR 3.4 trillion in 2025, compared with EUR 1.26 trillion in 2000. At constant prices (GDP deflator), EBIT in 2025 is EUR 2 trillion, the highest in the series but only EUR 0.2 trillion above the previous peak in 2007. Financial expenses reach their highest absolute values, around EUR 0.5 trillion, in 2008 and at the end of the period, in 2024 and 2025. The lowest values, less than half that amount, are concentrated in 2018–2022. In 2008, high relative indebtedness coincided with comparatively high interest rates. In 2018–2022, low interest rates associated with expansionary monetary policy coincided with deleveraging from the financial-crisis peak. The rise in policy rates in response to the 2022–2023 inflation

Figure 9. BOTTOM DOWN OF THE ACCOUNTING INCOME STATEMENT INCLUDING FINANCIAL INCOME, COSTS AND TAXES. NFC IN EU27

Millions of current euros



Source: Own elaboration with data from National Accounts. Institutional sector of NFC.

episode explains why aggregate NFC financial expenses rose from EUR 0.21 trillion in 2021 to EUR 0.54 trillion in 2024 despite a similar volume of financial debt. Net profit rises in nominal terms from EUR 0.72 trillion in 2000 to EUR 2.3 trillion in 2025.

In relative terms, financial income represents 29% of EBIT in 2000. The proportion rises thereafter and reaches period highs of around 35% in 2008–2009 and again in 2024–2025. On average over the whole period, income from financial assets contributes one third of EU27 NFC EBIT; the remaining two thirds come from operating assets. Since financial and operating assets each account for approximately half of total assets, the contribution per unit of assets is greater for operating than for financial assets.

Until the 2008 financial crisis, financial expenses represent around 20% of EBIT, reaching a period maximum of 22% in 2008. The decline in debt volumes and interest rates gradually reduces financial expenses relative to EBIT to lows of around 10% —half the pre-crisis figure— between 2017 and 2022. The more recent rise in interest rates brings the proportion back to around 15% in the last three years. Comparing financial income and financial expenses (interest of debt) directly, the difference is positive throughout the period, although its magnitude varies. In the early 2000s financial income exceeds financial expenses by 25%; in the years of the lowest interest rates, the difference reaches 140%. In 2025, financial income exceeds EUR 1 trillion, whereas financial expenses are only slightly above EUR 0.5 trillion.

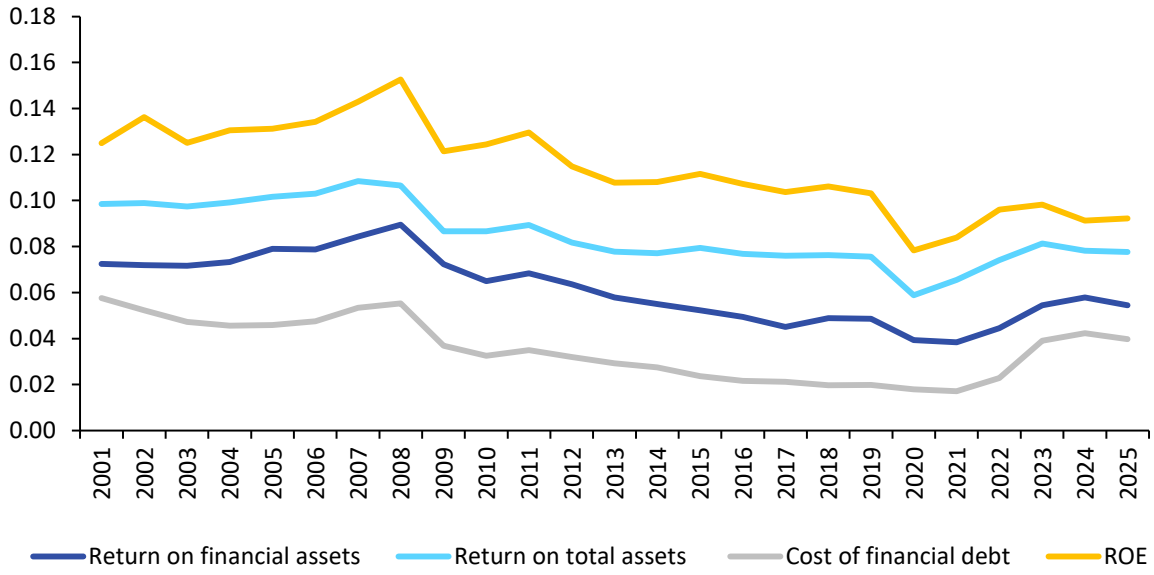
Fluctuations in the different financial items of the income statement have barely altered net profit relative to EBIT, which remains around 66% throughout the period. Thus, approximately two thirds of EBIT is accounting profit freely available to shareholders.

The profits reported in the lower part of the accounting income statement also have balance-sheet counterparts, so it is informative to consider the corresponding rates of return: the return on financial assets, return on total assets, return on own funds before taxes (ROE), and average cost of financial debt; Figure 10.

The return on total assets is also equal to the weighted average of the net return on operating assets and the return on financial assets. Since the return on financial assets, Figure 10, is lower than the return on operating

Figure 10. RATE OF RETURN ON FINANCIAL AND TOTAL ASSETS, COST OF FINANCIAL DEBT AND RETURN ON EQUITY

NCF in EU27



Source: Own elaboration.

assets, Figure 8, the return on total assets lies between the two. It is broadly stable at around 10% before the financial crisis, falls during the crisis, and remains around 8% from 2014 onward. Both operating and financial returns contribute to the contraction, although the latter contributes more strongly (the return on financial assets decreases from over 8% during the pre-financial crisis to 4% in 2020).

The average cost of financial debt shows a clear declining trend, from 6% to 2%, interrupted only by ECB's monetary-policy response to the inflationary episode in 2021 and 2023. Return on equity, ROE, is determined by the accounting identity, $Return\ on\ total\ assets + \frac{Debt}{Own\ funds}(\mathrm{Re}turn\ on\ total\ assets - Cost\ of\ debt) = ROE$. The ROE starts at values close to 14% and falls to below 10%. The reduction in the ROE is explained by two facts, the decline in the return on the financial assets and the reduction in the debt to own funds ratio.

If shareholders are assumed to prefer higher rather than lower ROE, the reduction in leverage by EU27 NFCs during a period in which the cost of debt was steadily declining may appear difficult to explain. One plausible explanation is that the increase in own funds on NFC balance sheets —the denominator of ROE— largely reflects higher market prices of existing financial assets rather than new equity issues.[13] Failure to distinguish changes in financial-asset values caused by revaluation of existing assets from changes due to new issues distorts reported rates of return, including the measure of the true return on financial assets.

According to Figure 10, the time path of the return on financial assets appears to be driven by the cost of debt, suggesting that returns on financial assets are highly correlated with market interest rates on both assets and liabilities. If NFCs hold pure financial assets, their return will be driven by the market interest rate. It is also possible that NFC parent companies use market interest rates as a reference when determining the financing cost charged to subsidiaries for the parent's finance of the assets held abroad.

4.3. Internally generated funds and their uses

Annual cash-flow accounts can be organized into sources and uses of funds, as shown in Table 3 of section 2. Figure 11 shows the evolution of the items that provide internal funds, and of the items that draw from these funds. Operating activity and activity involving financial assets and liabilities generate cash flows from net profit plus capital consumption. Capital consumption is part of production costs but does not represent a cash outflow because companies internally provide the capital used in production. Two principal uses of generated funds are dividend payments to shareholders and financing new capital investment. The difference between generated funds and dividend payments plus financing of new fixed-capital investment may be positive —an excess of internal funds— or negative— a financing deficit covered from other, generally external, sources.

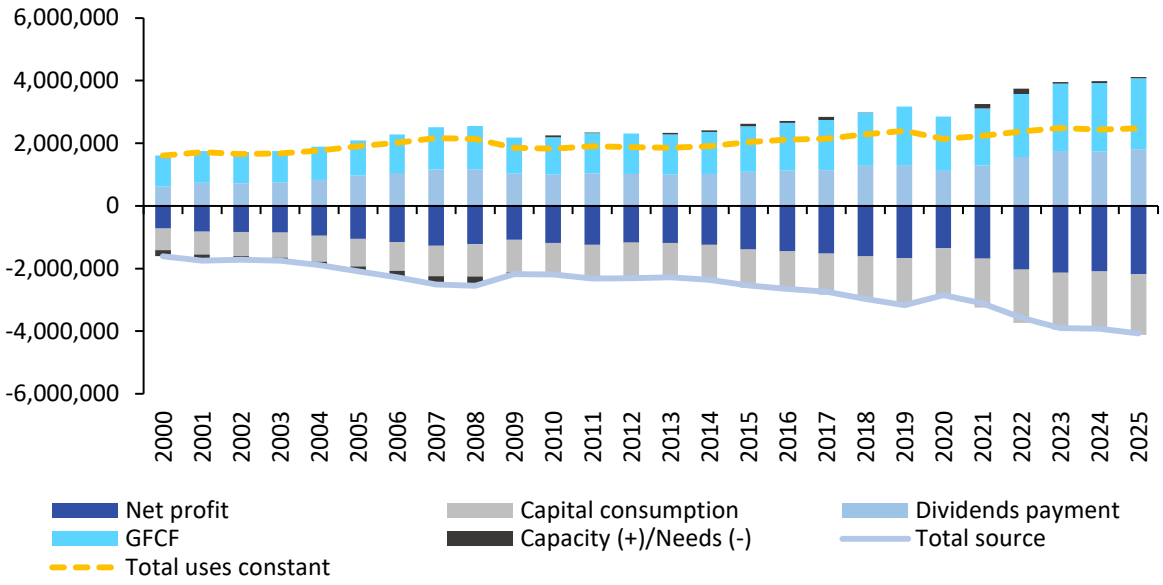
Total internally generated funds at current prices rise from EUR 1.6 trillion in 2000 to EUR 4.1 trillion in 2025. At constant prices, using the GFCF deflator as an indicator of the price of operating assets that could be financed with these funds, the 2025 figure falls to EUR 2.5 trillion. In constant euros, generated funds increase gradually up to the 2008 financial crisis but show signs of stability thereafter. Indeed, internally generated funds in 2025 at constant 2000 prices only slightly exceed those generated immediately before the financial crisis or immediately before the COVID-19 pandemic. Until 2008, internally generated resources are divided almost equally between net profit and capital consumption. From 2009 onward, the share of net profit increases slightly and stabilizes at about 55%.

Figure 12 provides complementary evidence, this time showing the proportions that the tree potential uses of these funds (finance fixed operating assets, pay dividends and balance between uses and funds available)

[13] Interests on debt have the additional advantage that they are tax deductible in the calculation of the corporate profit tax. Therefore, compared with equity, higher financial debt will increase net profits due to higher interest of debt. Al the same time, higher leverage increases the exposure of corporations to financial risks, including the likelihood of bankruptcy for given economic risks. The apparent gains, higher profits and higher return on equity, resulting from higher leverage are so straightforward as the leverage formula above may suggest. Deutsche Bundesbank (2026) contains an up to date summary of theories on the determinants of the financial structure of firms.

Figure 11. TIME EVOLUTION OF THE ANNUAL FLOWS OF INTERNALLY GENERATED FUNDS AND THEIR USES FOR THE AGGREGATE OF NFC IN THE EU27

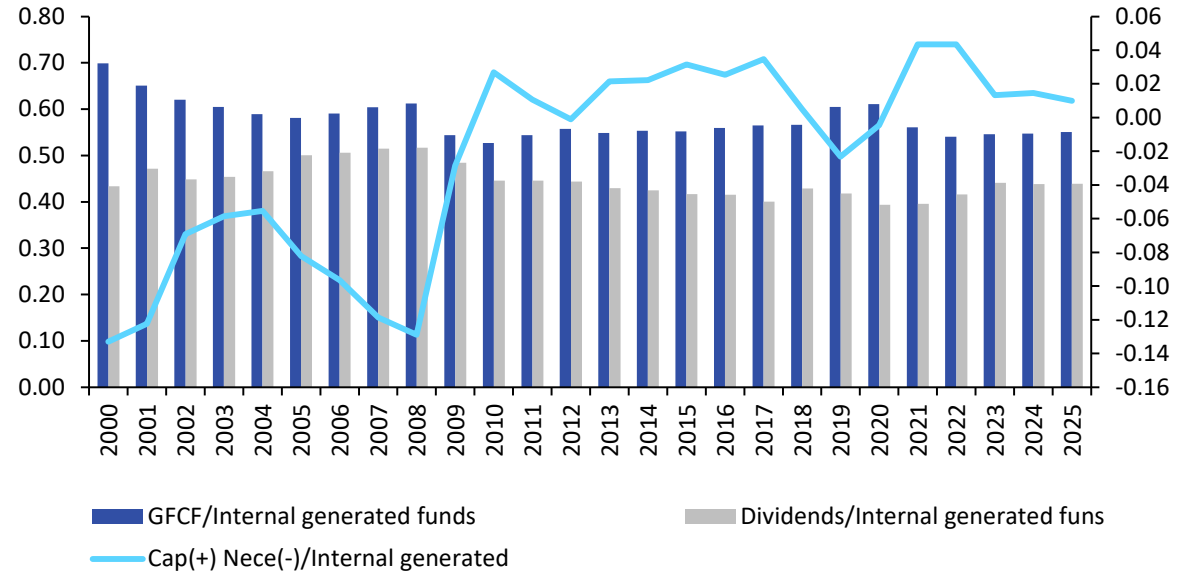
Millions of current euros



Source: Own elaboration from Annual Accounts, Eurostat.

represent on total internal generated funds. Until 2009, the aggregate of NFCs did not generate sufficient internal funds to finance both dividends and new fixed-capital investment. The maximum external financing requirement, 13% of generated funds, occurs in 2000 and 2008. From 2010 onward, NFCs generate funds in excess of outflows for new investment and dividends, although the amounts are modest, barely 2% of total internal generated funds. In 2000, financing new fixed-capital investment accounts for 70% of internally generated funds and dividend payments for 43%. Until 2008, these shares converge toward 60% and 51%, respectively. From 2009 onward, both adjust noticeably downward: by about five percentage points for GFCF and as much as seven points for dividends.

Figure 12. ALLOCATION OF INTERNAL GENERATED FUNDS INTO GFCF, DIVIDENDS PAID AND CHANGES IN FINANCIAL ASSETS (RIGHT SCALE)



Source: Own elaboration.

In recent years, the proportions are relatively stable: GFCF represents 56% of generated funds and dividend payments around 42%, leaving approximately 2% as net lending capacity. In 2019, the pre pandemic year, the flow of operating capital investment reached 60% of the internal generated funds, the level of year 2007; in 2025 the proportion is only 55%.

The share of GFCF fluctuates less over time than the share of dividends paid, suggesting that new capital investment is maintained as a relatively stable proportion of generated resources, whereas dividend policy establishes a more fixed amount to be paid and the residual varies with generated funds[14].

5. EXPLANATION OF OBSERVED DATA FROM PROFIT-MAXIMIZING BEHAVIOR

This section examines whether some predictions concerning the determinants of endogenous variables under profit-maximizing conditions, derived in the theoretical framework, are consistent with the observed values of these variables and their determinants for aggregate EU27 NFCs. The analysis is meaningful under the assumption that the aggregate can be treated as a representative price-taking profit-maximizing firm—an assumption that Is obviously far from reality. Given this Important limitation on the precision of the exercise, the main interest is methodological: explaining relationships between inputs and output; understanding the determinants of productivity; explaining the evolution of fixed-capital investment; and suggesting possible reasons for the increase in financial assets on corporate balance sheets.

5.1. Relationships between inputs and output

5.1.1. Nominal and real prices

Using the equivalences established in the theoretical framework, quantities of labor, *L*, capital, *K*, and output, *Q*, are calculated for each year from 2001 to 2025. Input quantities are obtained by deflating monetary values of labor compensation, the replacement-cost stock of operating assets, and GVA by the corresponding deflator. The price indices used for deflation are normalized to 1 in 2000, together with the deflator of the user cost per unit of capital service. Figure 13 shows the evolution of the price indexes along the period.

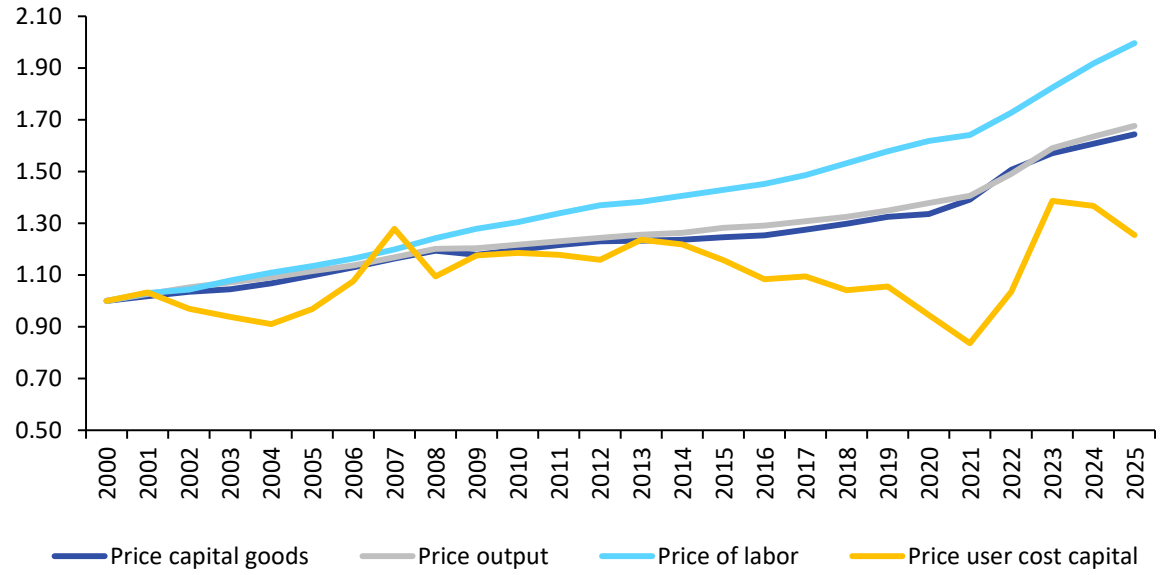
By 2025, the level of output price as measured by the GDP price deflator for the EU27 has increased 70% over its base value in year 2000. In the same time period, the price of the labor input for employers has multiplied by 2. The price of capital goods, deflator of GFCF, evolves practically at the same path than the GDP deflator and in year 2025 is 64% higher than in year 2000. The user cost of capital evolves over time in a more irregular way. It reaches two maximums, in 2007, an increase of 28% with respect to the base value of year 2000, and in 2023, 39% increase. The minimum values occur in 2004, a decrease of 10% with respect to the base year, and in 2021 with a value 15% lower than in the year 2000. From 2021 onward, during inflationary episode, all prices accelerate growth.

The conceptual framework shows that the endogenous values of the output and input variables from the profit maximizing solution depend on the real prices of labor, *w/p,* and of capital, *c/p*. Figure 4 show the log values of the normalized (year 2000 equal 1) real prices of labor and capital, together with the representation of the respective trend of the log, and the implicit annual average growth in the real normalized price.

As expected from the observation of Figure 13, the real price of labor increases over the period, the cost per unit of labor increases at a higher rate than the increase in selling price, while the real cost of capital decreases,

[14] We assume that the dividends payment decision is part of a broader decision on how to allocate the internal generated cash among alternative possible uses, among them the finance of invested capital assets. It could be that corporations decide the dividends to pay according to a payout ratio that determines how much profits are distributed as dividends, and how much are retained in the company. For informative purposes, the aggregate NFC in the EU distribute in dividends between the low payout ratio of 76% in 2021 and 95% in years 2008 and 2009.

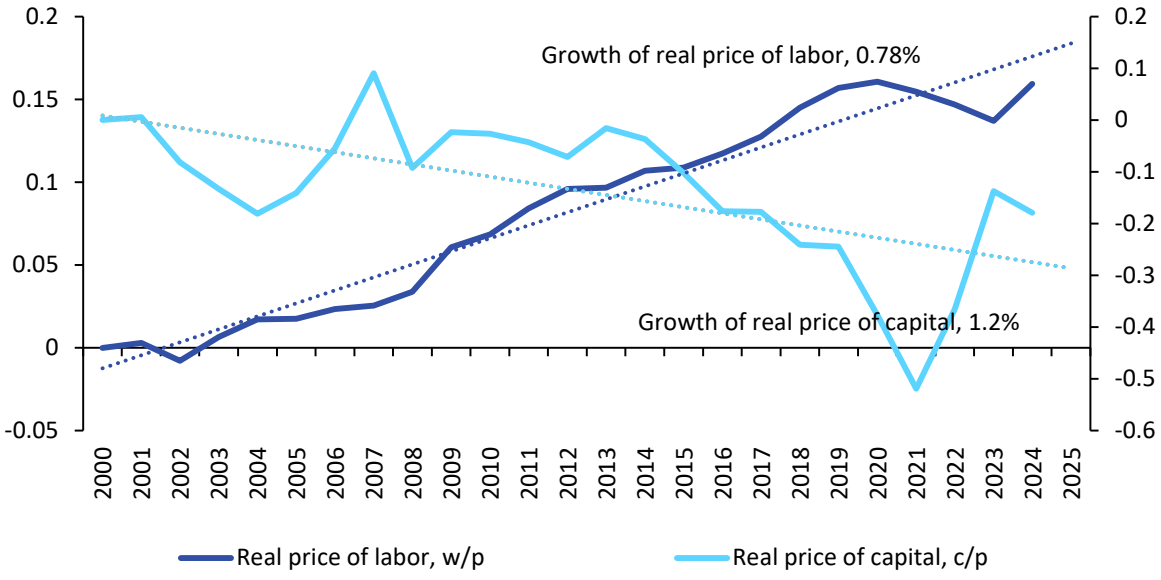
Figure 13. PRICE INDICES, VALUE OF 1 IN YEAR 2000, FOR CAPITAL ASSETS (GFCF DEFLATOR), OUTPUT (GDP DEFLATOR) LABOR INPUT (INDEX OF LABOR COST) AND USER COST PER UNIT OF CAPITAL SERVICE (FROM FIGURE 6)



Sources: Own elaboration from Eurostat data and from Figure 6 (user cost of capital).

the user unit cost increases at a lower rate than the selling price. The estimated average cumulative growth rate of real cost of labor is 0.78% with low standard error (high R2), while the real user cost of capital decreases at an annual average growth rate of -1.2%, but this time with high variability over time (low R2). In fact, if the time trend is estimated from 2000 till 2019, *i.e.*, excluding the post pandemic years, the cumulative decreasing annual rate in the real cost of capital would be -0.7%.

Figure 14. TIME TRENDS OF THE LOG OF NORMALIZED (YEAR 2000 VALUE OF 1) REAL PRICE OF LABOR, *W/P* AND USER COST OF CAPITAL, *C/P* (RIGHT SCALE)



Source: Own elaboration.

5.1.2. Growth of output and input quantities

As indicated in a previous section, the year-by-year output *Q* of the NFC sector in the EU27 is measured by the gross value added of the corresponding deflated by the GDP deflator normalized to the value of 1 in 2000. Similarly, the quantity of units of labor input *L* is estimated by the compensation of employees deflated by the index of the cost per unit of labor. Finally, the stock of capital services *K* is equal to the operational assets at constant prices of year 2000. The ratio between units of output and units of labor (capital) is equal to the average productivity of labor (capital), and the differences between the average rate of grow of output and the average rate of growth of labor (capital) will give the average rate of growth of the respective labor input.

We calculate the quantities of output and inputs, labor and capital, as described as described, and take logs of the value of the respective variable in year t. The log values of these quantities over time are represented in Figure 15.A, together with the respective underlying trend line. The reports % annual growth for the value of the output and inputs is the estimated coefficient of the time variable in a regression of the log value as dependent variable and the time period as explanatory variable. The results are estimated average annual growth rates in the period 2001-2025 of labor, capital and output of, respectively, 0.89%, 2.2% and 1.64%.

The differences between output and input growth rates give the average growth in partial productivity of the respective input over the time period: 0.75% (1.64-0.89) average annual growth of labor productivity and -0.56% (1.64-2.2) average negative annual growth of capital productivity. Figure 15.B shows the estimated average productivity growth of labor and capital from the time trend of the log of the partial productivity of the input, $Ln\left(\frac{Q}{L}\right), Ln\left(\frac{Q}{K}\right)$; the results coincide.

Equations [9] and [10] of the conceptual framework section indicate that if the inputs and out quantities satisfy the first order conditions of profit maximization, the evolution of the labor and capital partial productivity over time will be explained by changes over time of the respective real price, if the elasticity parameter of the production technology stays constant. Moreover, with Cobb-Douglas production technology the equilibrium labor share at the profit maximizing solution of a price taker firm is equal to the output to labor elasticity in the production function. The stability of the labor share along the time period, Figure 5, suggests stability in the production technology, which implies that the growth in labor productivity will be determined by the growth in the real cost of labor. The average annual growth in the real cost of labor is 0.78%, Figure 14, very close to the 0.75% average labor productivity growth estimated in Figure 15.B.

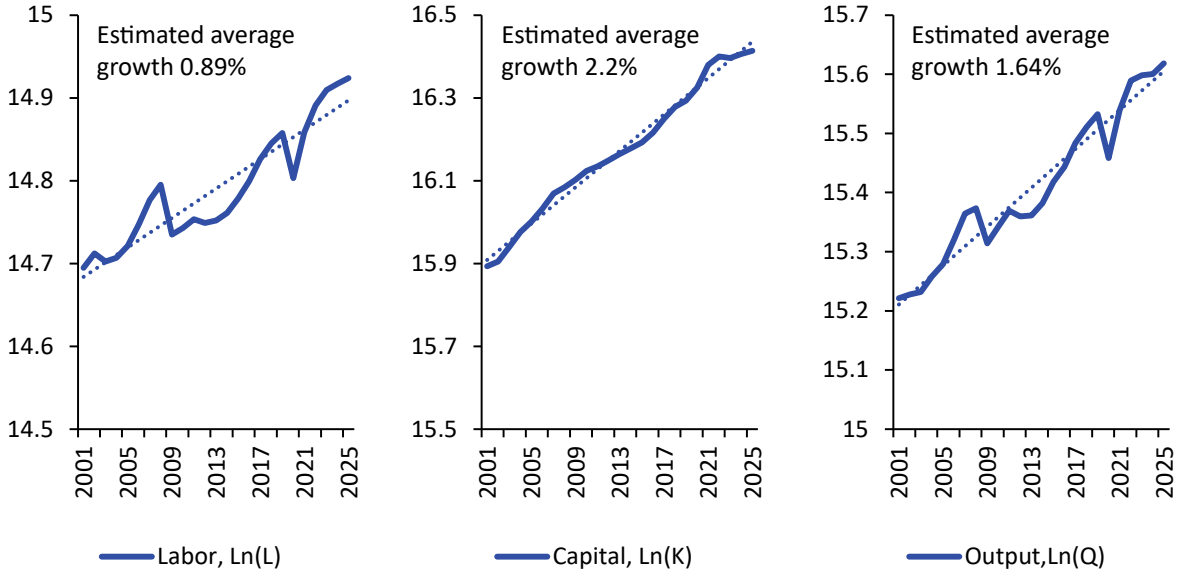
With the capital input the consistence of the results with the predictions from profit maximizing conditions is less clear. Notice that the average annual growth in the real price of the input estimated in Figure 14, -1.2%, is higher in absolute value than the -0.55% productivity growth of the capital input estimated in Figure 15.B. One possible explanation could be that the elasticity of output to capital, the parameter of the production function has changed over time, but the share of user cost of capital over gross value-added shows no significant trend over time, much less so when the post pandemic years are excluded. The other explanation could be errors of measurement in the variable user cost of capital, particularly during the inflationary episode with unprecedent high inflation rates in the prices of capital goods. In particular, when the average growth in the real price of the capital input is estimated for the period 2000-2019, the result is -0.7%, closer to the -0.55 estimated capital productivity growth.[15]

Notice that neither the observed over time increase in labor productivity, nor the observed decrease in capital productivity should be interpreted as an improvement in productive efficiency, in the case of labor, or a deterioration in efficiency in the case of capital. In both cases, the evidence concerns allocative efficiency: when the relative price of one input rises, cost-minimizing behavior requires reducing the quantity of the input that has

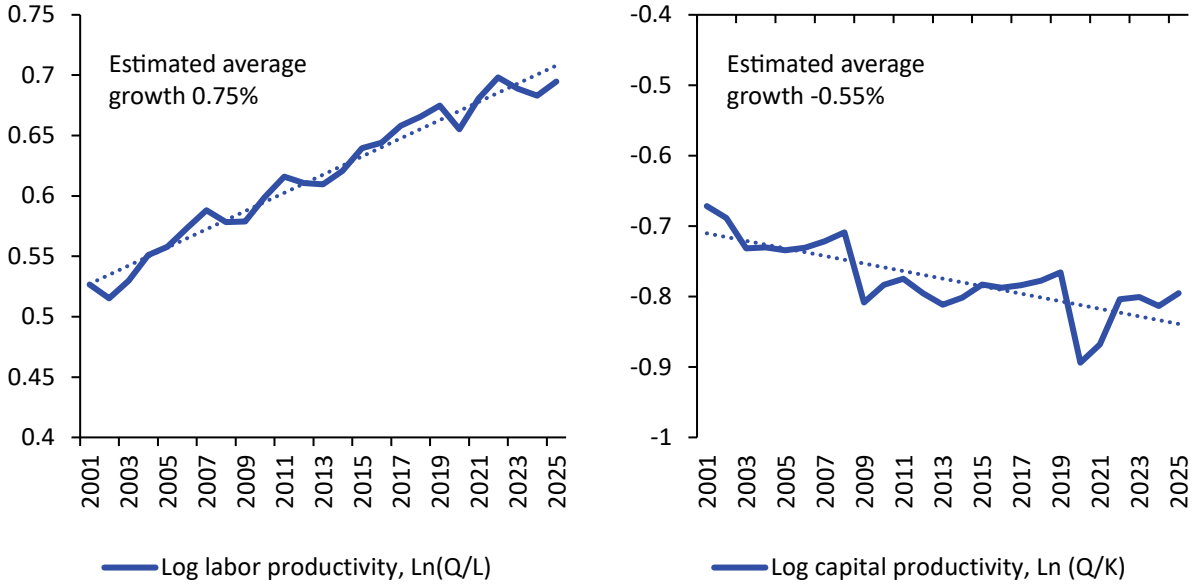
[15] For robustness purposes we have estimated the association between the capital to labor ratio, K/L, and the relative prices of capital and labor, c/w. From equations [9] and [10], profit maximizing conditions, under stable production technology, a negative association is expected between the two variables (if capital becomes relatively more costly than labor, profit maximizing/cost minimizing firms use less capital and more labor in production. The correlation between the two variables from our data set is negative and statistically significant p<1%.

Figure 15. INPUTS, OUTPUT AND PARTIAL PRODUCTIVITY OF LABOR AND CAPITAL. VALUES OF THE VARIABLES IN LOGS EXCEPT WHEN INDICATED OTHERWISE

A. Annual grow rates labor, capital and output. Values of the variables in logs



B. Estimated labor and capital partial productivity, and explanation of capital to labor input from relative input prices. Values of productivity in logs



Source: Own elaboration as explained in the main text.

become relatively more expensive and increasing the quantity of the input that has become relatively cheaper for the same volume of output —a movement along the production isoquant. Diminishing marginal productivity explains why average productivity rises for the input used in smaller quantity— labor in this case —and falls for the input used in greater quantity— capital.[16]

[16] The interpretation of partial input productivity growth (decline) as evidence of improvements (worseness) of productive efficiency is repeated in the specialized economic literature. For example, the document OCDE (2018) says "Capital productivity shows how efficiently capital is used to generate output" (page 46). The IMF (2025) report on New Zealand reproduces literally the same sentence.

5.2. Technical progress and total factor productivity

The theoretical framework includes two measures of total factor productivity (TFP) and its growth over time. In the first, TFP growth is calculated in the conventional way as the Solow residual: output growth not explained by the weighted growth of inputs, equation [8] in section 3. In the second, TFP growth or embodied technical progress is calculated for specific quantities of inputs and output corresponding to the profit-maximizing solution, equation [16].

Output elasticities with respect to labor and capital are set equal to the average labor share and the average user-cost-of-capital share of GVA for the 25 years period (no trend is observed in their evolution along the period); that is, $\alpha = 0.6, \beta = 0.33$. Average input and output growth rates for the whole period are estimated from the data, Figure 15. With these data, the estimated cumulative annual growth in non-incorporated technical progress of growth or in total factor productivity would be equal to approximately 0.4% (1.64% –0.6% ∗ 0.89% –0.33∗2.2%). That is, we estimate a cumulative annual contribution to output growth of 0.40% accumulative during the 25 years period of 0.4%, from non-incorporated technical progress or TFP growth.

The second estimate of TFP growth comes from equation [16] in section 3. Previously, we solve for the profit maximizing output that for the particular case of the Cobb Douglas production function the profit maximizing output depends negatively on the real input prices and positively on the level of technical progress or TFP. Taking logs and the total derivative of the log transformation of the output with respect to time we obtain equation [16] of total factor productivity growth as a function of output growth (weighted by 1 minus the scale economy parameter) and the weighted rates of real input prices. Substituting in [16] the growth in input prices (from Figure 14) and the growth of output (from Figure 15), we obtain: $TFP\ growth = 0.07{*}1.64\% + 0.6\% * 0.78\% - 0.33{*}1.2\% = 0.19\%$.

The estimated growth in total factor productivity or the contribution to output growth from not embodied technical progress is now half of the estimated as the Solow residual. The difference comes from the gap between the estimate growth in capital input productivity, -0.55% and estimated growth in the real cost of capital, -1.2%. In fact, with real cost growth equal to productivity growth as predicted with stable technology, the two formulas give the same result, 0.07∗1.64% +0.6% ∗ 0.78%–0.33∗0.55%=0.4. As we discussed above, one economic explanation would be that during the post pandemic and the inflationary episode the EU corporations did not expand capital and output as they should from a profit maximizing perspective given the decrease in cost of capital. Another explanation could simply be that the differences found reflect the errors of measurement in the estimation of the user cost of capital (risk premium, expectation on inflation of prices of capital goods). At this point we do not have arguments in favor of one explanation or the other.

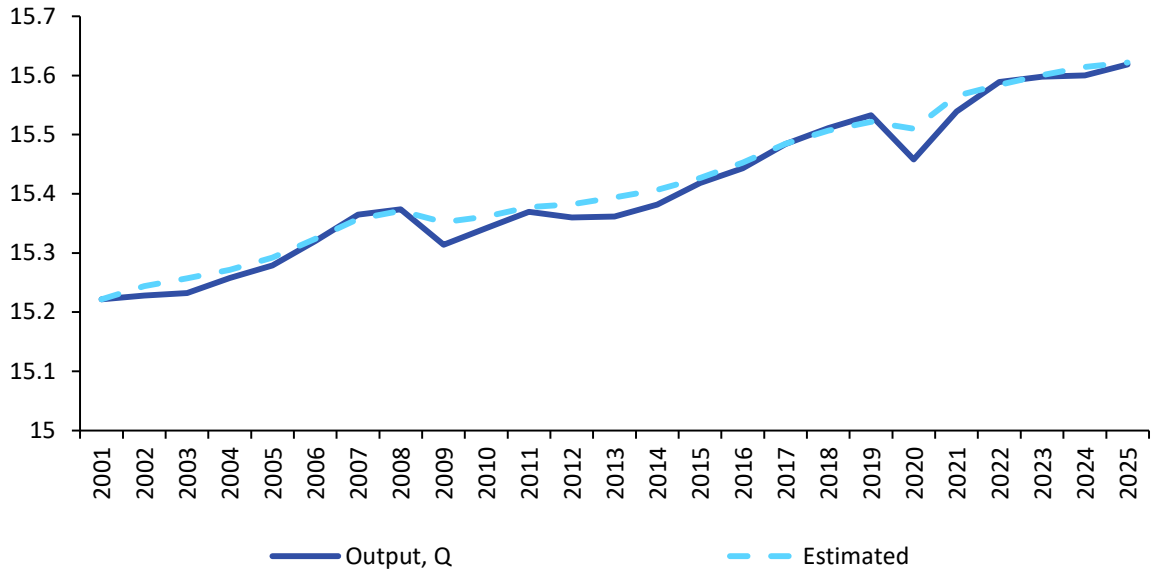
Figure 16 shows the time evolution of output of NFC in EU27 along the time period, in logs, and the output, also in logs, estimated with the Cobb Douglas production function with labor and capital elasticity parameters 0.6 and 0.33, neutral technical progress growing at 0.4% cumulative growth rate, and labor and capital input quantity. The estimated output from the technology parameters and input quantities reproduces fairly well the observed output, a result that assures the consistence of the analysis.

5.2.1. Competitiveness and competition

A conventional measure of economic competitiveness for firms or countries is unit labor cost, that is, labor cost per unit of output, expressed as follows:

$$Unit\ labor\ cost = w\frac{L}{Q} = \frac{Compensation\ employees, wL}{Output, Q} = \frac{Labor\ cost, w}{Labor\ \ productivity, \frac{Q}{L}}$$

Figure 16. LOG OF OBSERVED OUTPUT AND LOG OF ESTIMATED OUTPUT FROM OBSERVED INPUT QUANTITIES AND NEUTRAL TECHNICAL PROGRESS GROWTH ESTIMATED AT 0.4 % CUMULATIVE PER YEAR



Source: Own elaboration.

The per unit labor cost depends on the cost per unit of labor (positively) and on labor productivity (negatively), two variables that have been analyzed before, Figure 13 and Figure 14.

Firms with similar or different unit costs compete in markets offering products or services that are perceived as more or less substitutes by potential buyers. The outcome of competition are market prices. The relationship between market prices and unit labor cost determines the labor share, $Labor\ share = \frac{Unit\ labor\ cost}{Price} = \frac{wL}{pQ}$ and its complement, the gross profit margin. The law of one price for substitute products implies that differences in unit labor cost among firms in the same market will translate into differences in labor shares.

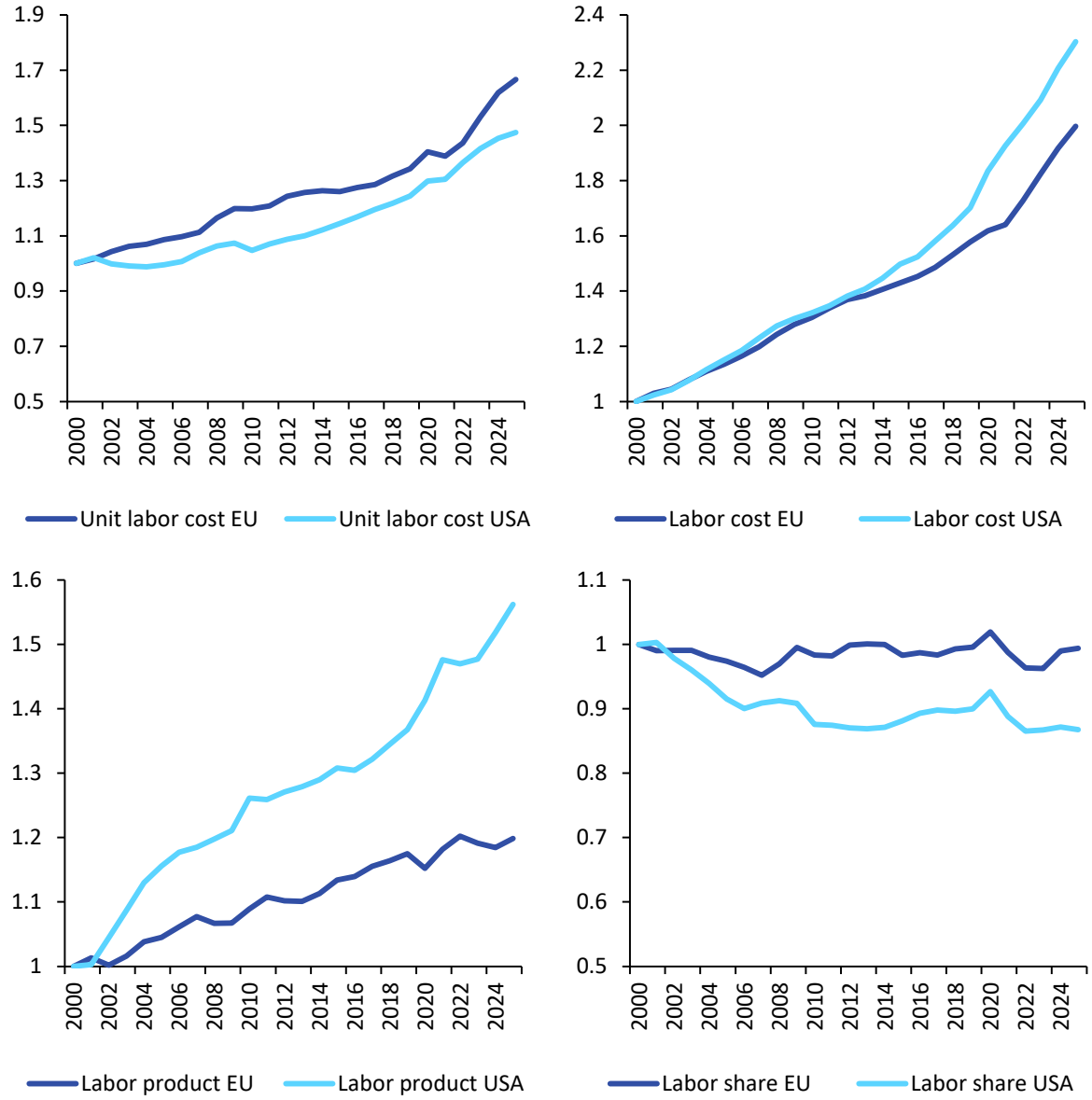
Firm competitiveness is a relative concept: an increase in a firm's production costs implies a loss of competitiveness if those costs increase more than those of its competitors in the selling products market; if its costs increase less than those of its competitors, the firm improves its relative ability to compete. To account for the relative nature of competitiveness, the unit labor cost and the market power of aggregate of NFCs in the EU27 is compared with the cost and market power aggregate of NFCs in the United States.

The Figure 17 shows the evolution of unit labor cost and its two determinants, labor cost and labor productivity, as well as labor share, for NFCs in the EU27 and the United States, with all variables normalized to 1 in 2000 (thus, what is actually being compared are their respective growth rates).

In terms of unit labor cost (ULC), EU NFCs are at a competitive disadvantage relative to US NFCs throughout virtually the entire period. Indeed, in 2025 US unit labor costs have increased about 12% less than EU unit labor costs relative to their respective 2000 levels, while over the period as a whole the difference in the increment is around 10%.[17]

[17] It should be borne in mind that the variables for the United States are not calculated in exactly the same way as in this study. For example, BLS statistics calculate NFC output by deflating GVA using its own price deflator, whereas this study uses the GDP deflator because of the lack of information. In the BLS data, the labor input is measured in hours worked and labor cost as hourly labor cost; in this study, labor is measured in deflated units of compensation of employees.

Figure 17. COMPARISON OF UNIT LABOR COST, ULC, AND LABOR SHARE FOR THE AGGREGATE OF NFC EU27 AND NFC USA, AND THEIR DETERMINANTS



Sources: Own elaboration from Eurostat and Bureau of Labor Statistics (USA).

Until 2013, labor cost per unit of labor evolved almost identically in the EU27 and the United States. From 2014 onwards, however, a gap emerged in the evolution of unit labor costs of NFCs on the two continents because nominal labor costs increased more rapidly in the United States than in the EU27. Thus, in 2025 labor costs in the United States were 2.3 times their 2000 level, compared with a factor of 2 in the EU27 (15% higher growth in the United States than in the EU27). What maintains the cost-competitiveness advantage of US NFCs over EU27 NFCs is the difference in labor productivity in favor of the former. The productivity gap widens over time, and in 2025 the growth in labor productivity in US NFCs is 30% higher than that in the EU27 NFCs.

The last chart in Figure 17 shows the evolution of the labor share in EU's and US's NFC (index with value of 1 in 2000). In the UE NFC the labor share by the end of the period is practically the same in NFC in the EU27, but in

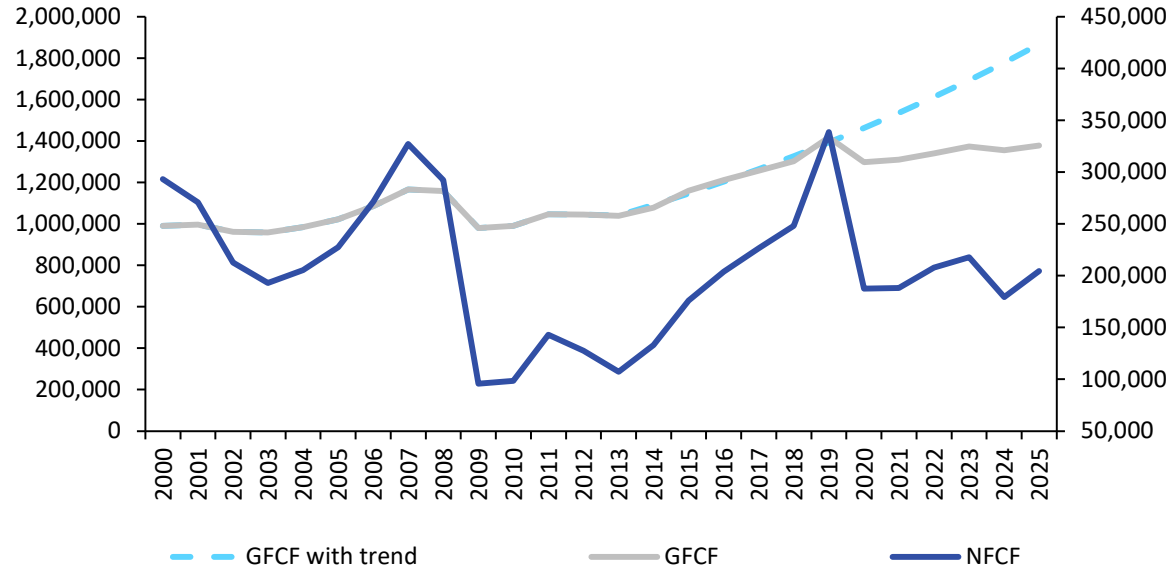
the USA NFC the labor share by the end of the period is 13% lower than in the early 2000s. The labor share falls in the financial and in the pandemic crisis in both, American and European corporations, but in the EU the share recovers afterwards to pre-crisis values, while in the USA the loss persists.

5.3. Investment in operating fixed capital

Fixed-capital investment used to produce goods and services in the EU affects growth dynamics not only because it is a component of aggregate expenditure but also because it incorporates new technology and knowledge into the existing capital stock. Figure 18 shows the evolution of capital investment, gross and net (gross minus consumption) for the aggregate of NFC in EU27 at constant prices of year 2000 (deflator of GFCF). Additionally, it shows the hypothetical trend of gross capital investment if the dynamics of investment growth that was initiated in year 2024, with an annual growth rate of 5%, would have continued beyond 2019, *i.e*. during the pandemic and post pandemic years.

Figure 18. GROSS AND NET (GROSS MINUS DEPRECIATION, RIGHT SCALE) FIXED CAPITAL FORMATION OF NFC IN EU27 AT CONSTANT EUROS OF 2000, AND HYPOTHETICAL EVOLUTION OF GFCF FROM 2019 AND ON WITH CUMULATIVE CONSTANT ANNUAL GROWTH OF 5 %

Average rate between 2014-2019



Source: Own elaboration.

In 2000, EU27 NFCs invested approximately EUR 1 trillion in fixed capital for producing goods and services within the Union. By 2025, at constant 2000 prices, investment had risen to EUR 1.4 trillion, an increase of 40% over twenty-five years, equivalent to cumulative annual growth of 1.3%. Growth is markedly uneven. Gross investment rises rapidly in the years preceding the financial crisis, reaching close to EUR 1.2 trillion in 2007, but falls in 2008 and especially in 2009 to around its 2000 level. During the following five years, through 2013, GFCF stagnates at about EUR 1 trillion. With the general economic recovery, from 2014 to 2019 GFCF follows a sustained growth path of about 5% per year, reaching EUR 1.4 trillion. COVID-19 interrupts this growth and reduces investment in 2020 to EUR 1.3 trillion. Investment subsequently recovers only very slowly and in 2025 barely reaches the pre-pandemic figure of EUR 1.4 trillion.

Had the investment growth rate of the preceding five years continued after 2019, annual fixed-capital investment at constant prices would have reached close to EUR 1.9 trillion in 2025, around EUR 0.5 trillion above the actual figure. The cumulative gross fixed capital formation not realized because of the interruption in growth between 2020 and 2025 amounts to almost EUR 2 trillion.

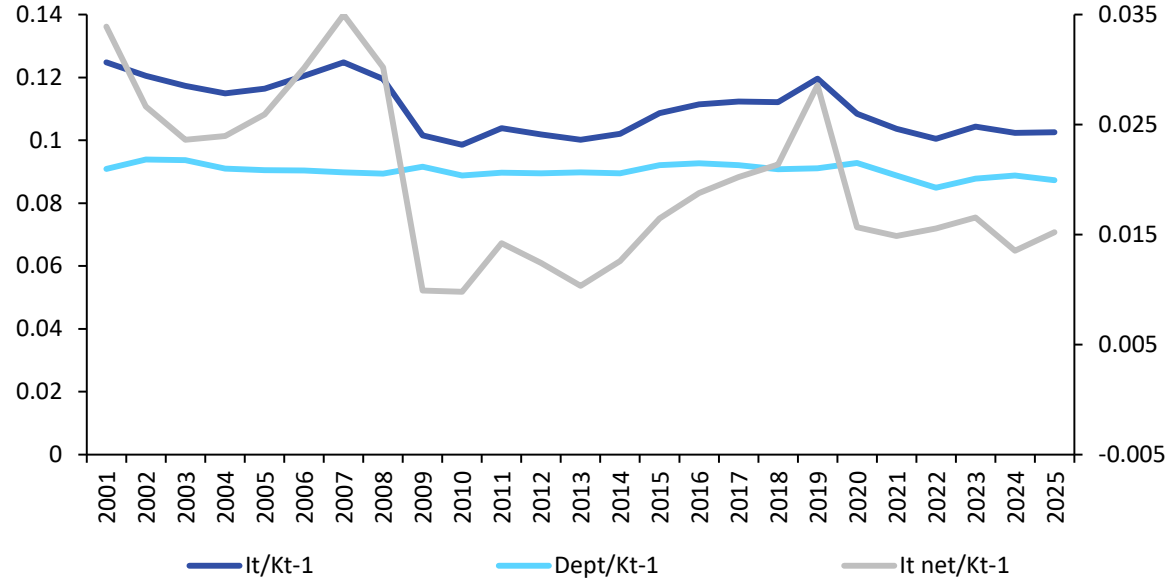
New fixed-capital investment increases EU27 NFC productive capacity only to the extent that it exceeds depreciation of the existing operating fixed capital stock—that is, through net investment. Net investment is highly irregular over the period, reaching peaks of EUR 0.33 trillion in 2007 and 2019 and a low of EUR 0.1 trillion in 2009. In 2025, net investment amounts to slightly more than EUR 0.2 trillion at constant prices. With the capital depreciation rate broadly stable at around 9%, capital consumption grows with the stock, which rises throughout the period. Consequently, short-run changes in gross fixed capital formation translate almost practically all into changes in net investment.

At the beginning of the 2000s, EUR 1 trillion of gross investment generated EUR 0.25 trillion of net investment. In the final years, by contrast, EUR 1.4 trillion of gross investment generates only about EUR 0.2 trillion of net investment. Thus, despite higher gross investment, net investment —the component that increases productive capacity— is only about two thirds of its 2000 level in 2025.

Figure 19 shows investment flows normalized by end of the previous year capital stocks so that the measures become investment rates; the figure also shows the depreciation rate. The numerators of investment rates, gross and net capital investment are annual flows valued at year 2000 prices. The denominator, capital stock, is measured by the stock of operating assets valued at constant prices. The depreciation rate is calculated as the capital consumption of the year t divided by the capital stock at the end of year t-1. Until 2007, annual GFCF represents about 12% of the operating capital stock and net investment exceeds 3%. Similar values are observed in 2019. During the financial crisis and after the COVID pandemic, the gross investment rate falls to around 10% and the net rate to around 1%–1.5%, roughly half its initial level. The depreciation rate remains around 9% for most of the period and declines slightly to about 8.5% in the final years.

Figure 19. GROSS FIXED CAPITAL INVESTMENT RATE, DEPRECIATION RATE AND NET FIXED CAPITAL INVESTMENT RATE (LEFT SCALE)

NFC in EU27



Source: Own elaboration.

5.3.1. Investment and incentives to invest

In the theoretical framework, firms choose their desired capital stock by maximizing profit. Comparison of the desired capital stock with the existing stock determines an investment process —an increase in the stock—

or disinvestment t —a reduction in the stock— subject to adjustment costs. Observed GFCF flows are part of the adjustment path toward the desired stock. Investment theory therefore explains the factors that determine whether the investment rate —the number of new capital units relative to the initial capital stock— is higher or lower at a given point in time. When the gross investment rate exceeds depreciation, the capital stock increases; when it is lower, the stock decreases. For aggregate EU27 NFCs, net investment remains positive throughout the period, although the net fixed-capital investment rate varies substantially over time, driven largely by the variability of the gross rate while depreciation remains stable.

Equation [17] in section 2, the theoretical framework, provides an explicit function for the 'optimal' investment rate, in the sense that it results from maximizing the economic value of the firm —the discounted present value of current and future profits— in the presence of quadratic adjustment costs. The investment rate rises (falls) when the ratio between the marginal increase in economic value generated by an additional unit of capital and the current-price cost of that new unit —the ratio known as Tobin's q— is greater (less) than one. Since q is not directly observable, explaining observed investment requires an approximation.

Under profit maximization, the gross operating rate of return is proportional to the user cost per euro invested in the capital stock, with the proportionality factor depending on the output elasticities of labor and capital. With constant Cobb-Douglas elasticities, the equilibrium relationship is formulated as follows (from equation [13] in section 2).

$$ROA\ gross_t = \frac{1-\alpha}{\beta}\left(R_t + \delta_t\right)$$

With values of the elasticities equal to the observed, stable, labor and capital shares, $\alpha = 0.6, \beta = 0.33$ the gross return on operating assets exceeds the user cost per euro of invested capital by about 21% $\left(\frac{0.4}{0.33} - 1\right)$.

The average of the observed ratio between gross profitability and the user cost per euro of capital, average of $\frac{ROA\ gross}{R+\delta}$, is 1.26 when calculated for the 25 years period and 1.22 when calculated for the period 2001-2020.

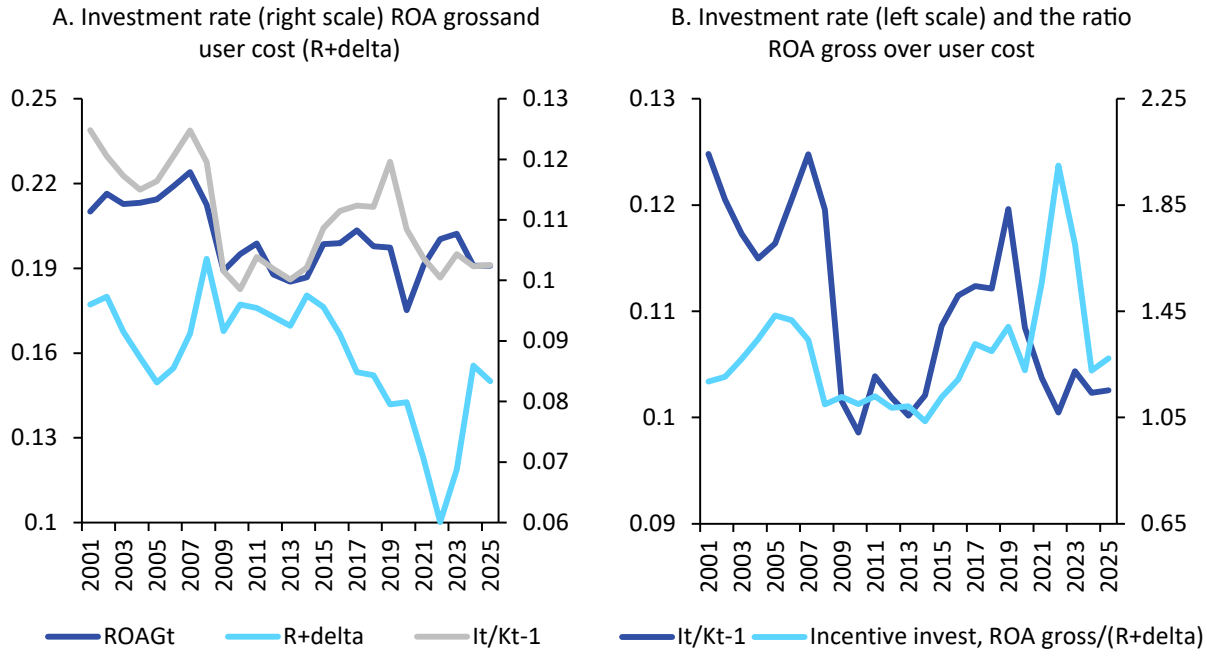
Thus, the data is broadly consistent with equilibrium conditions from the theoretical framework in the period before the COVID19, but in the post pandemic period the consistence breaks down again.

Next we examine the relationship between observed investment rate and the incentives to invest using as a proxy of the incentive variable the ratio between gross rate of return and the user cost of capital per euro of capital invested, $\frac{ROA\ gross}{R+\delta}$, with data for NFC in the EU27; Figure 20.

Figure 20.A shows the evolution of the three variables, gross rate of return per euro of capital invested, the user cost of capital pro euro of capital invested, and the rate of gross capital investment, with numerator and denominator at constant 2000 prices. Figure 20.B shows the incentive to invest, as calculated, and the investment rate. From the figure on the left, the evolution of the rate of return has some explanatory power on the evolution of the investment rate along the whole period (confirmed by a positive correlation between the two variables of 0.78, positive and significatively different from zero).

In the recovery period, from 2014 till 2020, the investment rate increases more than what could be expected from the evolution of the rate of return, coinciding with the period of decreasing cost of capital. The comparatively low cost of capital in this period of low official interest rates and moderate risk premium contributed to the recovery of the investment rate after the financial crisis, beyond the contribution from a rate of return that continued stable. In fact, during the period 2009-2019, the correlation between the incentive to invest, ratio of return over cost, and the investment rate is higher than 0.9. During the period 2020-2025, pandemic and post pandemic years, the relationship between incentives to invest and rate of investment breaks down.

Figure 20. INVESTMENT RATE AND VALUES OF THE VARIABLES THAT MAY AFFECT THE INCENTIVES TO INVEST (RETURN, COST AND THE RATIO OF THE TWO)



Source: Own elaboration.

The arguments put forward from profit maximizing behavior cannot explain the evidence during the late five years of the sample period, either because there has been a more profound technological or behavioral change, and/or because of severe errors in the measurement of the cost of capital and incentives to invest in general.

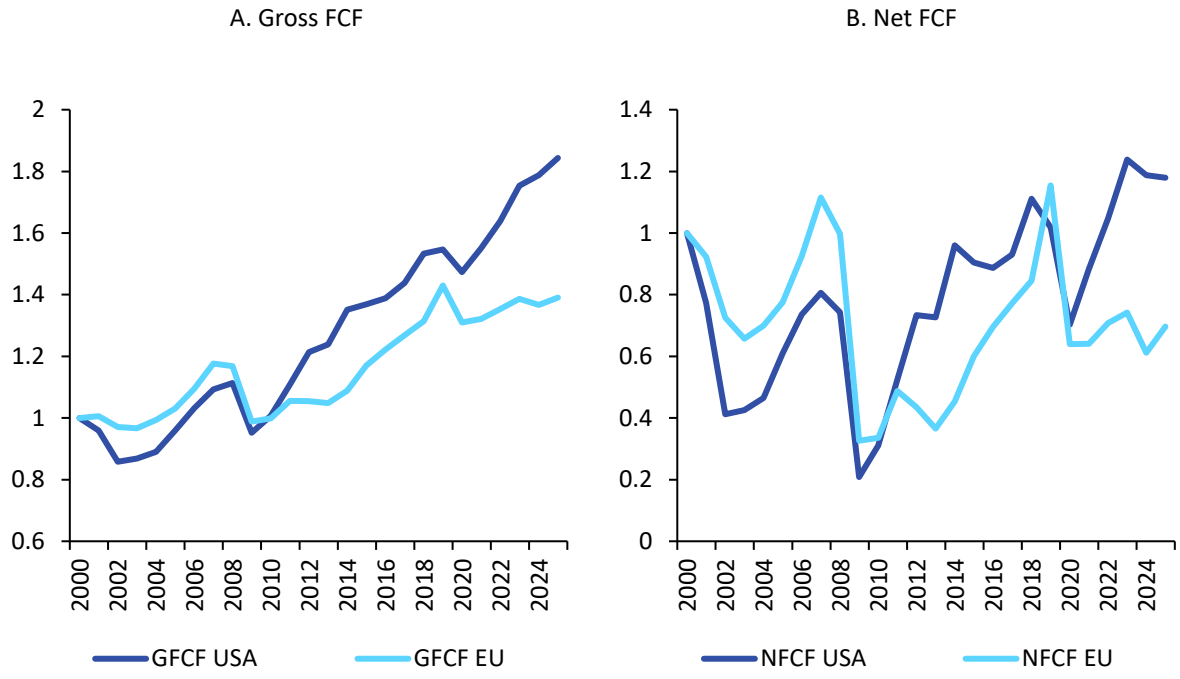
Notice also that the analysis of EU27 NFC fixed-capital investment over 2001–2025 does not account for changes in the composition of productive assets. For example, the increasing importance of intangible assets in companies' total operating assets has been documented, although the evidence presented here does not detect such a change. The depreciation rate remains stable or even falls slightly in the final years, whereas intangible assets —digital capital, knowledge, brand capital, firm-specific human capital, and so forth— generally have shorter useful lives than tangible assets and should therefore be associated with higher depreciation rates. In any case, analyzing investment as the variable that closes the gap between the actual and desired capital stock is not sufficient to explain new investment that transforms the existing capital stock, such as investment associated with the development of artificial intelligence technologies.

5.3.2. Capital investment and long-term competitiveness

Insofar as new investment embodies technological progress and improves productivity it will determine competitiveness in a dynamic way. This section compares the capital investment of EU27 NFC with the capital investment of NFC in the USA as a second dimension of their competitiveness bis a bis. Specifically, Figure 21.A compares the evolution of the index —with a value of 1 in 2000— of gross fixed capital formation (GFCF) in constant 2000 dollars for the aggregate of US NFCs, using the fixed-capital-investment deflator, with the corresponding index of GFCF in constant 2000 euros for the aggregate of EU27 NFCs. Figure 21.B presents a similar comparison, but this time with net fixed capital formation.

During the period 2000–2008, prior to the financial crisis, expenditure on both gross and net fixed capital formation, measured in constant 2000 euros, grew faster in the aggregate of EU27 NFCs than capital formation expenditure measured in constant 2000 dollars in the aggregate of US NFCs. With the financial crisis, gross fixed

Figure 21. INDEX (NORMALIZED VALUES TO 1 YEAR 2000 AT CONSTANT EUROS AND DOLLARS) OF GROSS (CHART A) AND NET (CHART B) CAPITAL FORMATION OF NFC IN UE27 AND US



Sources: Own elaboration with Eurostat and FRED data.

capital investment returned to its initial level in both corporate sectors, while net investment fell to one-third of its initial value, again similarly in both groups.

From 2011 onwards, gross fixed capital investment in the aggregate of US NFCs grew faster than in the European corporate sector, a situation that persisted through 2025. During the post-pandemic period, fixed capital investment by EU NFCs stagnated at pre-pandemic levels, while NFCs on the other side of the Atlantic maintained their investment momentum, contributing to a widening of the gap. Thus, gross investment by US NFCs in 2025 was more than 80% higher, in constant dollars, than in 2000. Gross fixed capital investment by European NFCs in 2025 was 40% higher than in 2000, but it had increased this much already in 2019. As for net investment, the figure for US NFCs in constant 2000 dollars was 20% higher in 2025 than in 2000. In European NFCs, by contrast, net investment in 2025 was 30% below its 2000 level.

In the aftermath of the financial crisis, albeit with some delay, European NFCs demonstrated their ability to recover their fixed-capital investment momentum and, by 2019, to achieve relative growth rates similar to those of US NFCs, particularly in net investment. This has not been the case in the post-pandemic period: gross investment by EU NFCs has remained stagnant at 2019 levels, while net investment is clearly below its level in that year.

EU NFCs are losing their ability to compete because they invest less —a quantitative effect— and because lower investment implies slower adoption of new technologies embodied in capital goods—a qualitative effect. Moreover, the acceleration of investment by US NFCs in recent years may partly reflect the acceleration of investment associated with AI and other digital technologies. The stagnation of investment by EU NFCs could therefore be symptomatic of their inability to compete in technological innovation with US companies that lead innovation in AI technologies.

5.3.3. Summary of comparison with USA for competitiveness

For completeness of the exposition, Table 5 summarizes the comparison of EU27 NFC with the USA NFC in the indicators for which we have similar data, mainly indicators of labor and output and of gross capital investment. The first part of the table compares cumulative average annual growth rates of the selected variables along the 2000-2025 period, and the second part compares the evolution of the same variables for the whole period between 2019 and 2025, *i.e.*, the pandemic and post pandemic period.

TABLE 5. COMPARISON OF SELECTED INDICATORS (INDEXES) OF PRICES, OUTPUT, PRODUCTIVITY AND COMPETITIVENESS BETWEEN EU27 AND US NFC. USA PRIMARY DATA IN DOLLARS OF YEAR 2000 AND EU27 PRIMARY DATE IN EUROS OF YEAR 2000

Percentage

	Cumulative average annual growth rate 2000-2025		Accumulated growth from 2019 till 2025	
	EU27	USA	EU	USA
Price deflator	1.75	2.04	24	24
Nominal labor cost	2.53	3.20	26	26
Real labor cost	0.78	1.16	2	2
Labor input	0.90	0.47	7	3
Output	1.64	2.00	9	18
Labor productivity	0.76	1.58	2	2
Unit labor cost	1.78	1.60	24	24
Labor share	0.00	-0.43	0	0
Real GFCF	1.55	3.00	-3	19

Sources: Own elaboration with data from Eurostat, BLS and Fred.

All the information in the table has been commented and assessed at point in the exposition above. However, it is relevant to remark that the output, labor productivity of the corporate sector in the EU has been lagging behind the corporate sector in the USA during the whole period, but the distance has been notably increased in the more recent years. During this period, China has consolidated as an important competitor in cost and value so it would be worth to investigate to what extend the increasing gap with the USA in recent years is also a reflection of competitiveness loss with the third main competitor.

Finally, it could be of interest to complement the table with information about differences in total factor productivity growth in the EU and in the USA economies; specific data on TFP growth of the respective NFC sectors is not available. From the AMECO data base[18], in the period 2000-2025, the comparison of growth rates would be 0.5%-0.6% annual rate in the EU27, and 0.8%-0.9%, almost twice, in the USA. However, the differences vary across subperiods. In particular, after the financial crisis, 2007-2013, the annual growth rates are, respectively, 0.5% and 0.8%. And in the post pandemic period 2020-2024 the TFP growth rate is 0.5% in the UE and 1% in the US.

In the context of our study, two remarks are worth making. First, the 0.5%-0.6% estimated for the whole period for the economy of the EU is above our estimate NFC sector estimate of 0.4%, although keeping in mind the differences in data and methodology the numbers are fairly close. Second, the periods of higher differences between TFP growth in the two economies, coincide with the periods when the differences in corporate capital investment are also more pronounced (Figure 21). There appears to be some complementarity between capital investment and technological progress that falls outside the proposed conceptual framework.

[18] https://db.nomics.world/AMECO/ZVGDF/EU27.3.0.0.0.ZVGDF?utm_source=chatgpt.com

5.4. Financialization or internationalization?

The balance-sheet and income-statement evidence shows an increase in financial assets on EU27 NFC balance sheets, an increase in financial income, and a permanent shift from a debtor to a creditor position in the sources-and-uses-of-funds statement. On the basis of this evidence, some analysts conclude that EU27 NFCs have become 'financialized': that is, they increasingly prioritize acting as passive investors by allocating internally generated funds to financial investments, to the detriment of acting as active investors by investing and managing assets used to produce goods and services in the EU. Others interpret this behavior as another example of a corporate orientation toward 'value extraction' rather than 'value creation,' the latter being what society expects from firms. One of the most criticized extractive activities is the exercise of market power to appropriate, for corporate benefit, surplus from consumers and rents from workers.

The pejorative characterization of the increase in financial assets as financialization overlooks differences in the origin and composition of those assets. Some are pure financial investments in which NFCs act as passive investors; others arise from producing goods and services abroad through foreign direct investment financed by an EU-based parent company. In the latter case, financial assets —shares and debt claims— record the parent company's creditor position vis-à-vis foreign affiliates financed by the parent. Because Eurostat data do not distinguish financial assets generated by outward direct investment from portfolio investments, investment funds, and other purely financial holdings, the actual weight of pure financial assets in total balance sheets cannot be directly identified, making it difficult to assess the true extent of financialization.

The descriptive evidence does show that the share of financial assets in total assets of aggregate EU27 NFCs has remained stable for years; that the return on financial assets is lower than the return on operating assets used to produce in the EU and evolves in parallel with the cost of NFC financial debt; that NFC net lending capacity —the excess of generated funds over those used to finance gross fixed-capital investment and pay dividends— is very small and residual; and that financial income contributes to the internally generated funds used to finance investment in operating fixed assets and to pay dividends.

Regarding market power as an extractive activity and its possible consequences for the distribution of value added in favor of capital and against labor, the evidence presented cannot determine whether the observed distribution of GVA is caused by market power. It does show, however, that the labor share of EU27 NFC GVA remains stable over the period. Thus, if NFCs possess market power at the aggregate level, the evidence suggests that it has not systematically increased over time. Economic operating profit likewise remains moderate and stable as a proportion of GVA.

The fact that the return on financial assets evolves in parallel with the cost of financial debt could indicate that a significant share of balance-sheet financial assets consists of investments whose return is tied to market interest rates. Alternatively, parent companies may use market interest rates as a benchmark when setting the financing cost charged to foreign subsidiaries and affiliated companies.

To shed further light on the composition of corporate financial assets, a simple correlation exercise relates changes in NFC monetary assets to changes in the stock of outward foreign direct investment assets using country-level data for Germany, Spain, France, and Italy; outward direct-investment data are not available for the EU27 aggregate. The empirical model is as follows,

$$\Delta AIDE_{it} = a + b\Delta AFSNF_{it} + \sum_i d_i \qquad i = Germany, Spain, France, Italy$$

The econometric specification relates the absolute year-on-year change in outward direct-investment assets of country i in year t, normalized by that country's GDP, to the absolute year-on-year change in financial assets on the balance sheet of aggregate NFCs in country i, also normalized by the GDP, together with country dummy variables. The sample contains 100 observations: four countries over 25 years. The estimated coefficient

on changes in NFC financial assets measures the sensitivity of changes in outward direct-investment assets to changes in the monetary/financial assets of the corresponding NFC sector.

Ordinary least squares estimation gives the following results: $\hat{a} = 0.028(0.004);\ \hat{b} = 0.078(0.026);\ d_{Spain} = -0.002(0.005);\ d_{France} = -0.004(0.006);\ d_{Italy} = -0.018((0.006);\ R2\ ajusted = 0.17$. The positive and statistically significant estimate of the slope coefficient *b* ($p < 0.01$) implies a rejection of the hypothesis of no association between changes in countries' outward direct-investment assets and changes in their NFC financial assets. The country-dummy coefficients for Spain and France are not significantly different from zero, implying that the component of changes in direct investment not associated with changes in corporate financial assets does not differ significantly from that of Germany, the omitted category. For Italy, however, the estimated coefficient is negative and significant, indicating that the component of direct-investment changes not associated with changes in corporate financial assets is smaller than in the other countries.

This partial evidence is indicative that at least part of the financial assets on EU27 NFC balance sheets is linked to outward foreign direct investment operations. Financialization should therefore not be regarded as the only hypothesis explaining NFC transactions in financial assets and liabilities in corporate EU.

CONCLUSION

National Accounts by institutional sector make it possible to analyze economic aggregates such as production, employment and capital accumulation with a degree of differentiation consistent with the heterogeneity that characterizes the economy as a whole, particularly differences in the preferences and constraints that shape the behavior of persons within each institutional group.

This study focuses on the institutional sector of non-financial corporations (NFCs), where profit maximization, subject to the constraints imposed by law, technology and market competition, provides the standard behavioral benchmark. The analysis covers the aggregate of NFCs in the EU27, with occasional comparisons with NFCs in the United States, using annual data for the period 2000–2025. The study is organized into three main parts: the collection and organization of information from the balance sheet, income statement and sources-and-uses-of-funds statement; the conceptual framework used to interpret the results; and the analysis of the evidence within that framework. The conclusions seek to provide an integrated interpretation of the study's findings from which broader implications may be drawn.

A substantial part of the empirical regularities documented in the study can be rationalized within a simple benchmark of profit maximization by a price-taking firm operating with a stable technology, except for general disembodied technical progress, which is estimated to have grown at an average annual rate close to 0.4% over the period. Clearly, this benchmark is not intended to provide a close representation of the underlying economic reality. Rather, it allows us to assess the consistency among the observed values of different variables and provides some non-conventional explanations for the relationships detected in the data.

For example, the observed decline in the partial productivity of capital over the period need not be attributed to an "inefficient management" of the resource, as is often done in the literature. It can also be explained as an efficient profit-maximizing and cost-minimizing response to a decline in the real price of capital services. The same reasoning applies, in the opposite direction, to the observed increase in labor productivity coinciding with an increase in the real price of labor. Second, disembodied technical progress in the production technology promotes growth both as an external shock, for given quantities of capital and labor, and by generating an endogenous expansion in the quantities of labor and capital employed in production, thereby producing an ultimate multiplier effect. In the simple theoretical framework proposed in the study, the growth rate of output of the representative firm is proportional to the difference between the rate of technical progress and the weighted sum of the growth rates of the real prices of labor and capital. Disembodied technical progress, however, does not directly affect the partial productivity of the factors because it affects numerator and denominator proportionally.

Turning to the findings most directly related to EU competitiveness in a globalized economy, the study shows that financial assets on the balance sheets of EU27 NFCs, measured in current euros, have reached a volume similar to that of operating assets—that is, assets used to produce goods and services in the EU for sale in the market. The origins and uses of financial assets differ from those of operating assets and should therefore be analyzed separately. Regarding the origin of financial assets, the study provides partial evidence that their evolution may be related to foreign direct investment activities outside the EU undertaken by non-financial corporations headquartered within the EU. Operating assets, by contrast, respond to production decisions based on profit maximization for given prices and technology. Adjustment costs explain why the transition from the current to the desired capital stock does not occur instantaneously but gradually, through the investment process.

The income-statement data reveal considerable stability over the period in the distribution of the gross value added of EU27 NFCs: 60% goes to labor compensation, 33% to covering the user cost of capital, and the remaining 7% represents economic profit. The theoretical framework relates these distributional shares to the output elasticities of labor and capital in the production function. The evidence is therefore consistent with relatively stable elasticities in the representative production technology around these values. Under such technological stability, the return on operating assets —gross profit per euro of operating assets— is proportional to the user cost of capital, with a stable proportionality factor determined by the elasticities of the production function.

The study provides specific estimates of average annual output growth (1.64%), labor-productivity growth (0.78%) and capital-productivity growth (−0.55%). These figures are broadly consistent with the evolution of relative factor prices and with the estimated growth of disembodied technical progress, although some inconsistencies also emerge, largely reflecting the difficulty of estimating the user cost of capital —an unobservable variable to which, in our view, insufficient empirical attention is generally paid. The evolution of the rate of investment in operating capital over the period can also be partly explained by economic incentives related to the return on capital and its user cost. In summary, distributional stability, the evolution of partial factor productivities and output dynamics, together with capital-investment behavior, are mutually consistent within the same system of economic decisions.

Although it is not a primary objective of the study, a section devoted to the short-term (unit labor cost) and medium-term (capital accumulation) competitiveness of EU27 NFCs compares their costs and capital investment with those of NFCs in the United States. The results are broadly consistent with those reported in other studies, including the Draghi Report and analyses by the ECB and European Commission. The distinctive feature of our comparison is that it is confined to the NFC sector rather than the economy as a whole and is conducted within a common conceptual framework that integrates the different partial results. The differences should nevertheless be interpreted cautiously because the variables are not measured homogeneously for the two groups and growth rates are calculated using real values expressed in their respective national currencies, euros and dollars.

Against this background, the relative disadvantage of EU27 NFCs in unit labor costs vis-à-vis their US counterparts does not primarily reflect differences in labor costs, which have grown faster in the United States than in the EU, but rather differences in productivity. Average annual labor-productivity growth among US NFCs was 1.56%, compared with 0.8% among European NFCs. Unlike in Europe, labor-productivity growth among US NFCs cannot be explained solely by the increase in the real price of labor; it also involves changes in the implicit output elasticity of labor, which may reflect an underlying technological change that deserves further investigation.

In the medium-term dimension of competitiveness —capital investment— GFCF at constant prices among US NFCs has grown substantially faster than investment among EU NFCs. Particularly noteworthy is the stagnation of GFCF in the EU in the post-pandemic period, while investment among US NFCs has accelerated markedly. US NFCs have maintained their pace of investment and capital accumulation, whereas capital accumulation among EU NFCs has shown pronounced weakness in recent years. For example, in 2025 net fixed-capital investment among US NFCs was 20% above its 2000 level, whereas among EU27 NFCs it was 30% below its 2000 level. The post-pandemic experience contrasts with the years following the financial crisis. Although the recovery started

later in the EU, by 2019 GFCF relative to its 2000 level had increased by an amount similar to that observed among US NFCs. New factors may therefore be contributing to the divergence observed in recent years, including differences between the United States and the EU in the investment dynamics associated with AI.

For most of the 2000–2025 period, the aggregate evolution of European NFCs can reasonably be interpreted as the response of profit-maximizing firms to changes in relative prices over which they have no influence, within an environment of moderate technical progress and otherwise relatively stable production technology. The accumulation of financial assets on corporate balance sheets should not necessarily be interpreted as evidence that firms have prioritized financial investments unrelated to their primary role in a market economy —producing goods and services for sale. There is sufficient evidence to suggest that such accumulation may instead be partly associated with the process of EU outward foreign direct investment.

The new development is that, since the pandemic, capital accumulation appears to have departed from this historical pattern. The coincidence of weak European investment, accelerating US investment and a widening productivity gap over the past five years raises the question of whether this represents a temporary adjustment or the beginning of a deeper technological divergence.

IMPLICATIONS

The positive framework adopted in the study limits the scope of the normative recommendations that can be drawn from its results. The evidence presented is broadly consistent with firms responding rationally (according to their preferences for profit) to prices and technology; therefore, socially disappointing aggregate outcomes that justify the intervention of public authorities cannot automatically be attributed to firms making the “wrong” allocation decisions. They may instead reflect a misalignment between privately optimal decisions and socially desirable outcomes but to a miss alignment between private and social outcomes. What we can learn from this “positive” analysis has to do more with interpreting the data right than with “normative” prescriptions on what to do to change the data. Hopefully, this better understanding will contribute to formulate policies that address ultimate causes not just observed symptoms.

The results of the study suggest that the misalignment between private performance and socially desirable corporate outcomes in the EU has to do more with dynamic —technological change and innovation — than with static —cost minimization — efficiency. The choice of the production technology is not explained by the static conceptual framework of the paper that takes it as given, except for an exogenously determined neutral technological progress. Technological innovation driven by business decisions need not be neutral and may alter the relative productivity of inputs and, therefore, the shape and parameters of the production function. For example, in the reduced-form production-function representation used here, automation can be interpreted as technological change that reallocates productive tasks from labor to capital and is reflected in an increase in the output elasticity of capital relative to labor. Under profit maximization, automation will increase labor productivity, will decrease capital productivity and will have an undetermined effect on the total output, all else equal.

Most likely, technological change will be embedded in changes in the composition of new capital investment, and possibly in its quantity as well. But in our analysis capital services are viewed as a homogeneous input so the explanation of capital investment is not sufficient to explain technological change in general. There are, however, some evidences that point in this direction. The data shows a 4-5 years delay in the recovery of capital formation in the EU after the financial crisis, and a delay of similar length and continuing in the recovery after the COVID pandemic. These delays in investment recovery in corporate EU coincide with the periods of time when the difference in TFP growth between the USA and the EU economies is more pronounced. The coincidence is consistent with complementarity between capital formation and embodied or disembodied technological progress, and could help to explain the relative loss in competitiveness of the EU corporate sector with respect to the USA one.

The policies around the *Competitiveness Compass* implemented by the European Commission —fostering R&D investment, amplifying the true single market to services as well as goods, implanting new industrial and competition policies…—, will ultimately improve the conditions for doing business in the EU and increase technological opportunities. The Competitiveness Compass, broadly in line with the diagnosis of the Draghi report, places particular emphasis on improving the external conditions under which European firms invest and innovate. Mazzucato et al. (2026) by contrast place greater emphasis on factors internal to the corporations, in particular to a governance of large EU corporations that prioritizes value extraction over value creation. The results from profit maximization reported in this study are consistent with static private efficiency and, under competitive prices that reflect social opportunity costs, with static social efficiency. However, they cannot explain the relative dynamic underperformance (from capital investment and innovation).

The relevant question continues to be why the technological, institutional and market environment in Europe generates private investment and innovation decisions that, collectively, have been associated with weaker capital formation and productivity growth than in the United States. Distinguishing between deficiencies in that environment and deficiencies in firms' entrepreneurial and managerial capabilities, including corporate ownership and governance, is a pending exercise that appears essential for designing an effective European competitiveness policy.

References

Adilbish, O. E., Cerdeiro, D. A., Duval, R. A., Hong, G. H., Mazzone, L., Rotunno, L., Toprak, H. H. & Vaziri, M. (2025). Europe's Productivity Weakness: Firm-Level Roots and Remedies. *IMF Working Papers,* 2025(040). International Monetary Fund. https://doi.org/10.5089/9798229001441.001

Archanskaia, L., Bormans, Y., Garrone, M., Hassan, W. & Thum-Thysen, A. (2026). Understanding Market Power: Insights from Firm-Level data on Markups and Profitability in the EU. European Commision. *Discussion paper 257*.

Beck, T., Peltonen, T., Perotti, E., Sánchez Serrano, A. and Suarez, J. (2023). Corporate Credit and Leverage in the EU: Recent Evolution, Main Drivers and Financial Stability Implications. *Reports of the ESRB Advisory Scientific Committee*, No. 14.

Butler, B., Carlier, K., Schotten, G. & Volkerink, M. (2019). *Unrevelling the Saving Surpluss of Deutch Corporations.*

Cesaroni, T., De Bonis, R. and Infante, L. (2018). Firms' Financial Surpluses in Advanced Economies: The Role of Net Foreign Direct Investments. *LUISS Working Paper*, No. 18/13.

Chen, P., Karabarbounis, L. & Neiman, B. (2017). The Global Rise of Corporate Saving. *Journal of Monetary Economics*, 89, 1–19.

Damodaran, A. (2026). *Country Risk: Determinants, Measures and Implications — The 2026 Edition.*SSRN: https://ssrn.com/abstract=7107638 or http://dx.doi.org/10.2139/ssrn.7107638. Updated estimates of ERP at pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histimpl.html

De Loecker, J., Eeckhout, J., & Unger, G. (2020). The rise of market power and the macroeconomic implications. *The Quarterly Journal of Economics*, *135*(2):561–644.

Deutsche Bundesbank. (2026). Trends in Corporate Financing in the Euro Area. *Monthly Report*, April 2026.

Di Mauro, F. & Zona Mattioli, A. (Editors). (2026). *Europe's Productivity Challenge: Firm-Level Evidence from CompNet Dataset.* European Commission.

Draghi, M. (2024). *The Draghi Report: A competitive Strategy for Europe.* European Commission. https://commission.europa.eu/topics/competitiveness/draghi-report_en#paragraph_47059

European Commission. (2025). *Euro Area Competitiveness: A Reappraisal of Challenges*. https://www.consilium.europa.eu/media/qaga1m5v/competitiveness-reassessment-eg-nov-2025.pdf?utm_source=chatgpt.com

Fama, E. F. and French, K. R. (1999). The Corporate Cost of Capital and the Return on Corporate Investment. *Journal of Finance*, *54*(6), 1939–1967.

Geis, A., Kapp, D. & Kristiansen. K. (2018). Measuring and interpreting the cost of equity in the Euro area. *ECB Economic Bulletin*, 4/2018. https://www.ecb.europa.eu/press/economic-bulletin/articles/2018/html/ecb.ebart201804_02.mt.html

Granelli, L., Habets, M., Stanoeva, G., D'Adamo, G. and Gampfer, R. (2020). Puzzles in Non-Financial Corporate Sector Savings across the G20. *European Economy Economic Brief*, No. 63.

Gutierrez, G. & Philippon, Th. (2016). Investment-less Growth. An Empirical Investigation. *NBER WP,* 22897. http://www.nber.org/papers/w22897

Hayashi, F. (1982). Tobin's marginal q and average q: A Neoclassical Interpretation. *Econometrica, 50*(1), 213–224.

International Monetary Fund, Asia and Pacific Department. (2025). *New Zealand: Selected Issues.* https://doi.org/10.5089/9798229011716.002

Jorgenson, D. (1963). Capital theory and investment behavior. *The American Economic Review, 53*(2), 247-59. https://www.aeaweb.org/aer/top20/53.2.247-259.pdf

Karabarbounis, L. (2024). Perspectives on the Labor Share. *Journal of Economic Perspectives,* 38(2), 107–136. https://www.aeaweb.org/articles?id=10.1257/jep.38.2.107

Mazzucato, M., Fleischman, S., Emerson, A. H. and Merling, L. (2026). Labour Squeezed, Investment Stalled: The Hidden Cost of Financialisation in Europe's Corporate Sector. *IIPP Policy Brief,* No. 35. UCL Institute for Innovation and Public Purpose. https://www.ucl.ac.uk/bartlett/publications/2026/jun/labour-squeezed-investment-stalled

OECD. (2018). *OECD Compendium of Productivity Indicators 2018*. París: OECD Publishing. http://dx.doi.org/10.1787/pdtvy-2018-en

Rodríguez Palenzuela, D., Dees, S. & The Saving and Investment task Force. (2016). Savings and Invesment Behavior in the Euro Area. *ECB Occasional paper Series,* n. 167.

Ruscher, E. and Wolff, G. B. (2012). Corporate Balance Sheet Adjustment: Stylized Facts, Causes and Consequences. *European Economy Economic Papers*, No. 449.

Salas Fumás V. (2021). *La empresa Española en el Euro*. Zaragoza: Prensas de la Universidad de Zaragoza.

Salas Fumás, V. (2025a). Veinticinco años de beneficios empresariales en España. [Twenty-five years of business profits in Spain]. *Investigaciones de Funcas,* 20. https://www.funcas.es/documentos_trabajo/veinticinco-anos-de-beneficios-empresariales-en-espana/

Salas Fumás, V. (2025b*).* Activos y pasivos de las sociedades no financieras en España: 2000-2024. [Assets and liabilities of non-financial corporations in Spain: 2000-2024]. *Investigaciones de Funcas,* 6. https://www.funcas.es/wp-content/uploads/2025/05/ACTIVOS-Y-PASIVOS-DE-LAS-SOCIEDADES-NOFINANCIERAS-EN-ESPANA-2000-2024.pdf

Salas Fumás, V. (2026). La remuneración al trabajo en el valor añadido de la economía española (2000-2024): estabilidad agregada y dinámicas sectoriales. *Investigaciones de Funcas*, Marzo. https://www.funcas.es/documentos_trabajo/la-remuneracion-al-trabajo-en-el-valor-anadido-de-la-economia-espanola-2000-2024-estabilidad-agregada-y-dinamicas-sectoriales/

Tobin, J. (1969). A General Equilibrium Approach to Monetary Theory. *Journal of Money, Credit and Banking*, *1*(1), 15–29.

Tori, D. and Onaran, Ö. (2020). Financialization, Financial Development and Investment: Evidence from European Non-Financial Corporations. *Socio-Economic Review, 18*(3), 681–718.

Van Ark, B. (2026). Rewiring Europe's Productivity Framework: Aligning Investment, Innovation, and Diffusion. *Productivity Insights Paper,* No. 096. The Productivity Institute.

Van der Zwan, N. (2014). Making Sense of Financialization. *Socio-Economic Review*, *12*(1), 99–129.