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Abstract:
We examine the dynamics of corporate investment in Germany during the 2000s, a period marked by stagnant macroeconomic investment spending. Employing a mixed-methods approach, we explore investment trends across national accounts data, firm-level financials, and responses from financial executives through our financial strategy survey. We show that while tangible investment remains the most important investment category, both macroeconomic and firm-level data indicate a decline. This decrease is offset by rising intangible investment, reflecting the emergence of the intangible economy. Despite this shift, investment has lagged behind rising corporate saving, leading to an increased net lending position. Often interpreted as corporate financialization, we find only moderate and partial evidence to support this view from a firm-level perspective. Additionally, while we find an increasing importance of M&A at the firm level, this development is not fully captured in the national accounts due to missing goodwill data. Our results underscore the necessity of multifaceted analysis in understanding investment dynamics.

Keywords: CFO Survey, Intangible Economy, Investment Strategy, Germany, M&A, Mixed Methods, Financialization

JEL Codes: C83, D22, E01, E22, G3, L2

Word Count: 9478

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1. Introduction

During the 2000s, corporate investment in the U.S. developed weakly despite high profitability and valuation, and similarly, European economies have shown low levels of private fixed investment (Döttling *et al.*, 2017; Gutiérrez and Philippon, 2017). At the same time, corporate saving, defined as internally retained funds available for investment, has increased remarkably around the world (Chen *et al.*, 2017). This trend is particularly evident in Germany, where gross saving as a share of gross value added (GVA) in the non-financial corporate sector has risen while gross fixed capital formation (GFCF) relative to GVA stagnated. As a result, the German corporate sector has become a net lender to the rest of the economy (Behringer and van Treeck, 2022).

Why have firms not increased their investment spending despite an increasing amount of internal funds and generally facing few financing constraints due to expansive monetary policy? One explanation attributes this development to "the rise of the intangible economy" (Haskel and Westlake, 2018), according to which the decline in physical investment over recent decades corresponds to a simultaneous rise in investment in intangible assets (Crouzet and Eberly, 2019; Crouzet *et al.*, 2022). Another proposition is that of corporate financialization: The financial turn of accumulation hypothesis states that non-financial firms increasingly prioritize the acquisition of and returns from financial assets rather than tangibles relevant to the production process (Davis, 2016, 2017; Redeker, 2022). In addition, the increasing importance of shareholder-oriented norms and practices leads to more funds distributed to shareholders rather than invested (Lazonick and O'Sullivan, 2000).

This paper contributes to our understanding of the investment puzzle in Germany in the 2000s by analyzing investment trends through a combination of national accounts, firm-level data and survey responses. Specifically, we answer the question of which commonalities and differences in investment trends emerge when comparing macroeconomic and firm-level perspectives, and how these trends reflect broader economic developments such as the rise of the intangible economy and corporate financialization.

We utilize national accounts data to trace macroeconomic investment patterns and consolidated financial statement data from *Worldscope* for a sample of listed non-financial firms to delineate firm-level investment trends. Analyzing both aggregate investing cash flow and balance sheet, we represent and interpretate corporate flows and stocks related to investment according to International Financial Reporting Standards (IFRS). Furthermore, we present the results of our survey on corporate financial strategy, which we conducted among financial executives of respective listed non-financial firms. Drawing inspiration from previous corporate finance survey studies, questions cover firm characteristics, corporate goals and investment strategies, and additionally, investment motives (Brounen *et al.*, 2004; Graham, 2022).

By integrating different data sources, we offer a comprehensive view of investment trends in Germany, an approach that, to the best of our knowledge, has not yet been applied in a similarly integrated manner. The mixed-methods approach allows us to address measurement challenges and discrepancies across accounting standards, such as the treatment of intangible assets, mergers and acquisitions (M&A), and financial investment in both macroeconomic and firm-level contexts. Moreover, since investment behavior is significantly influenced by the decision-making of financial executives, whose motivations and strategies may diverge from theoretical frameworks (Graham, 2022), we gather these insights through our survey.

Our results can be summarized as follows. National accounts data show a decline in corporate tangible investment relative to GVA, which is offset by increased spending on intangible assets, particularly in research and development (R&D). As a result, while GFCF as a share of GVA remained stagnant, the composition of investment at the macroeconomic level shifted significantly, reflecting the rise of the intangible economy. This trend is corroborated by firm-level analyses. At the same time, corporate saving has outpaced investment spending as defined in the national accounts, leading to an increased net lending position. While this finding is often understood as a

shift toward financial asset accumulation and interpreted as corporate financialization, our firm-level data only partially support this view, and financial executives continue emphasizing stakeholder orientation. Lastly, we identify a growing importance of M&A, as identified in firm-level data and confirmed by financial executives. However, this investment category is not fully captured in the national accounts, where spending on M&A is partially reflected in the net lending position, as additions to goodwill as an asset class is absent from the German time series.

The paper is organized as follows. In section 2, we revisit different concepts and measures of investment in the national accounts and firm-level accounting. Section 3 introduces data and survey methodology for our empirical analysis. Section 4 presents national accounts investment trends and firm-level aggregate investing cash flow and balance sheet analyses, both for our full sample of listed non-financial firms and for our survey sample, comprising firms whose financial executives participated in our survey. In section 5, we present the results of our survey on corporate financial strategy, including corporate goals and capital allocation while focusing on investment. In section 6, we compare the results of the preceding sections alluding to broader economic trends, and discuss challenges with respect to definitions and measurement of investment across macroeconomic and firm-level data sources. Section 7 concludes.

2. Definitions and concepts of investment

To set the stage for our analysis, we begin by reminding the reader of important macro- and firm-level commonalities and differences in definitions and concepts of investment. Drawing on Eurostat (2013), we reference corporate investment concepts from a sectoral balance perspective, as defined by the European system of accounts (ESA 2010), and address capital and investment allocation according to corporate accounting principles under IFRS.

2.1 The macroeconomic view: corporate sector investment

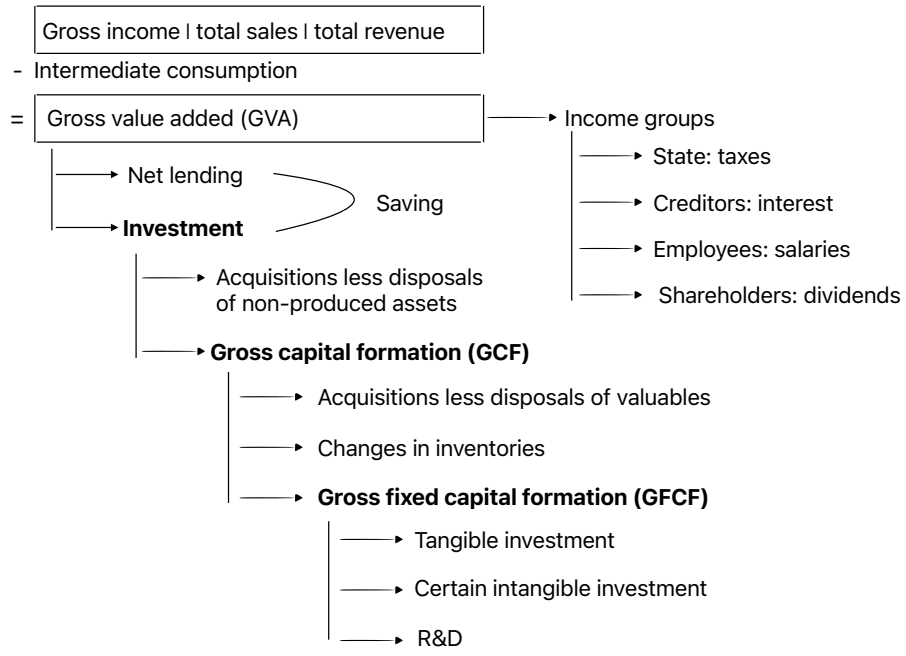
To derive the flow of corporate investment from the national accounts, macroeconomists usually start by deducting intermediate consumption from output, resulting in corporate GVA (see, e.g., Chen *et al.*, 2017). Corporate GVA represents the value of final production and can be apportioned to different income groups. As shown in *Figure 1*, the state collects taxes, creditors obtain interest, employees receive salaries, and shareholders are paid dividends. The portion remaining with firms corresponds to either investment or net lending, where net lending is calculated as the difference between corporate saving and investment. Corporate saving, representing the total amount available for internal financing, is derived unambiguously from the production and income accounts.[1] Net lending is reflected in the financial accounts as the difference between the net acquisition of financial assets and the incurrence of liabilities, representing net financial transactions. As one entity's net lending is another's net borrowing, the sum of net lending across all entities in the economy equals zero.

In ESA 2010, the term "change in non-financial assets" is used to refer to investment spending (Eurostat, 2013). Change in non-financial assets consists of gross capital formation (GCF) and acquisitions less disposals of non-produced assets. GFCF, which is the most commonly used proxy for investment spending, generally constitutes the largest portion of GCF and includes expenditures on tangible assets, such as buildings and equipment, and additions to intellectual property, which consist of expenditures on certain intangible asset classes like software, and spending on both internal and external R&D (Eurostat, 2013). In addition to GFCF, GCF includes

[1] Considering other sectors, corporate funds for internal financing further include both paid and received capital transfers, which reduce or increase available funds, respectively. In Germany, where there are no capital taxes, these transfers are mainly driven by inflows, primarily from government investment grants (Eurostat, 2024).

changes in inventories and acquisitions less disposals of valuables. While the latter are not included in the data for Germany (Destatis, 2023, p. 4), inventories may affect GCF positively or negatively.

Figure 1. National accounts saving and investment.



Source: Authors' illustration, based on ESA (2010).

Non-produced assets include natural resources, contracts, leases and licenses, as well as goodwill resulting from corporate transactions (and marketing assets). Goodwill in particular requires closer examination. Consider an acquisition of a target firm through an acquirer, both belonging to the German corporate sector. The transaction necessitates the assets and liabilities of the target to be consolidated within the balance sheet of the acquirer. In the national accounts, the consolidated assets of the acquirer and their respective contribution to GCF increase accordingly. However, as the target disposes of respective assets through the transaction, its contribution to GCF proliferates negative values. Integrating both, aggregate GCF only changes if the transaction is carried out with an entity from another sector or country. The underlying notion is that acquisitions represent a change in ownership of existing assets rather than an addition to an economy's productive capacity. However, if the acquirer pays a price in excess of the book value of the target firm's net assets, the difference is recorded as goodwill on the firm's balance sheet. Conceptually, such transaction expands the sectoral balance sheet with assets previously unaccounted for, even if both participants belong to the same sector. The corresponding flow of funds is represented in the national accounts as an acquisition of non-produced assets.

However, non-produced assets specified in ESA 2010 are largely absent from the sectoral balance sheets for Germany. As the Federal Statistical Office explicitly notes, "corresponding data are not available […] for non-produced assets other than land" (Destatis, 2023, p. 4). Accordingly, the corresponding flow measure is also missing. Therefore, we lack insight into certain investment activities and their measurement at the sectoral level, namely those related to intangibles addressed by the item licenses, and those related to corporate transactions addressed by goodwill. Eventually, since net lending is derived by deducing investment spending from corporate saving, these expenditures enter the net lending position of the corporate sector and are not considered investment spending.

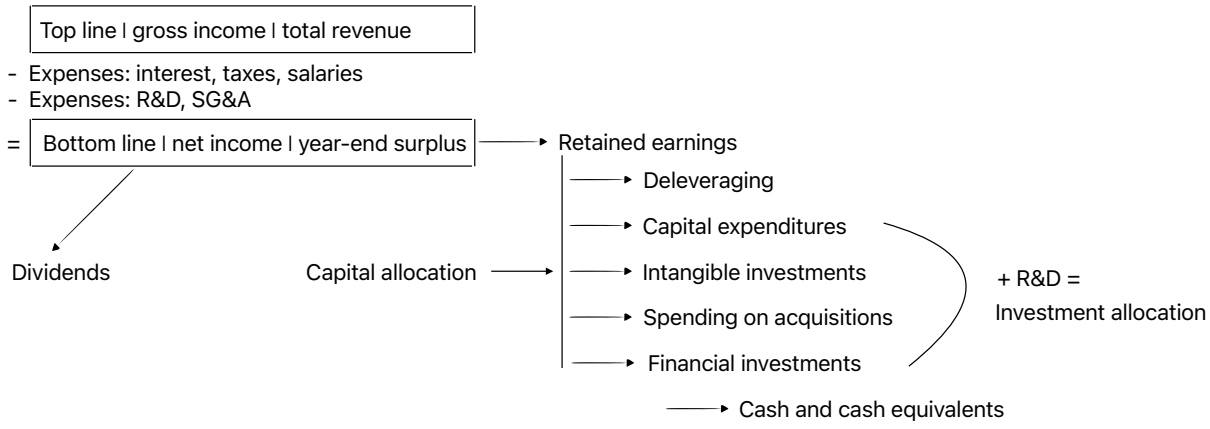
2.2 The firm-level view: capital and investment allocation

The capital and investment allocation processes that firms employ differ from the macroeconomic flow of funds perspective. To firms, taxes, interest payments, and salaries are expenses deducted from total revenue on the income statement. As observable in *Figure 2*, net income is the relevant metric for a firm's capital allocation decision, given that no other financing such as debt is sourced. This year-end surplus can either be retained or distributed to shareholders in the form of dividends. As part of equity, retained earnings serve as a source of funds and can be used to pay down debt, to finance investment including acquisitions, or to increase liquidity holdings. Regarding deleveraging, the decision on capital structure mostly hinges on firm characteristics.[2] The remaining uses of funds comprise capital expenditures, intangible investment, spending on acquisitions, financial investment, and cash holdings. Together with R&D, they are subject to the investment allocation process within a firm. We discuss these types of investment with respect to their macroeconomic counterpart in the following.

Capital expenditures

Capital expenditures signify spending on fixed assets and are expressed as a component of a firm's investing cash flow. They lead to the acquisition or enhancement of tangible assets such as plants, equipment, machinery, vehicles, and buildings – essentially, physical assets integral to the production process. On the balance sheet, they are represented by the item plant, property, and equipment (PPE). From a management perspective, capital expenditures are associated with organic growth, referred to as "building" capacities (Capron and Mitchell, 2012). Traditionally, they are linked to GFCF in the national accounts, which primarily consists of flows related to buildings, machinery, and equipment.

Figure 2. Firm-level capital and investment allocation.



Source: Authors' illustration.

Intangible investment

Intangible assets encompass computerized information, innovative property, and economic competencies, with investment in intangibles including software and database development, R&D,

[2] Mature firms have higher debt availability and their cost of debt is lower compared to smaller or growing firms. However, in an environment of low interest rates and borrowing costs all firms may tend toward higher indebtedness. A view on aggregate firm liabilities and shareholders' equity (see *Figure A1, Appendix*) indeed reveals that debt relative to assets have increased significantly between 1997 and 2022.

design, product development, employee training, market research, and branding (Corrado *et al.*, 2005). In the national accounts, the treatment of intangibles exhibits variation: Whereas spending on computer software and databases, entertainment, and other intellectual property rights is acknowledged as GFCF, spending on design, product development costs, training, market research and branding is not (Eurostat, 2013; Haskel and Westlake, 2018, p. 44). R&D expenditures have for long counted as intermediate consumption but are nowadays included in GFCF as an addition to fixed assets.[3] As stated above, licenses[4], an item related to intangible assets, are theoretically included in the national accounts but missing from German corporate sector data.

Accounting for intangibles at the firm level also varies. While related to the internal growth strategy of "building" and considered an investment (Capron and Mitchell, 2012), spending on R&D is regarded as an expense which reduces net income according to IFRS (Lev and Gu, 2016). As for the balance sheet, spending on research cannot be capitalized, whereas International Accounting Standard 38 poses conditions for capitalizing development spending. Respective criteria allow for a degree of discretion, enabling firms to individually decide whether to include corresponding intangible assets in their balance sheets. Furthermore, certain expenditures related to intangibles, such as advertising, are included under other items on the income statement, such as sales or general and administrative expenses (SG&A) (Lev and Gu, 2016; Rabinovich, 2023). Lastly, IFRS distinguishes between internally generated intangible assets, which cannot be capitalized, and purchased intangibles, which must be capitalized. Hence, depending on corporate innovation strategy, not only do financial reports differ, but profitability measures used by investors, such as return on equity or assets, deviate and may inadequately capture the real profitability of a firm (Lev and Gu, 2016).

Mergers & Acquisitions

As illustrated above, M&A produce the asset goodwill if the price paid is above the book value of net assets acquired. In the national accounts, previously unaccounted assets are theoretically uncovered, contributing to the item acquisition of non-produced assets. In practice, however, aggregate goodwill data for Germany does not exist, such that values enter the net lending position. As a result, M&A activity can only be gauged using firm-level data. While, according to IFRS, acquisitive spending is part of a firm's investing cash flow, the disparity between the purchase cost and the net value of the acquisition is accounted for on the balance sheet as derivative goodwill. Derivative goodwill belongs to intangible assets and is capitalized if resulting from a transaction, while internally generated goodwill, such as client lists or reputation, cannot be capitalized. Goodwill is subject to regular impairment tests and carries the potential for write-downs (Eulerich *et al.*, 2022).

Financial investment

By definition, financial assets entail counterpart liability of another unit or sector. They are detached from any productive process, "except in the trivial sense that a share certificate might be printed to represent the claim" (Haskel and Westlake, 2018, p. 20). Consequently, any spending on financial assets is ascribed to the corporate sector's net lending position in the national accounts – it is not considered an investment but rather an acquisition of assets that represents other sectors' liabilities. In corporate accounting, however, spending on financial assets is typically regarded as an investment and included in a firm's investing cash flow, with respective assets capitalized on the balance sheet. Nevertheless, short-term financial assets integral to a firm's operational activities

[3] This category encompasses both expenses for internally conducted R&D activities and expenditures for results of externally performed R&D (Destatis, 2022, p. 57).
[4] Licensing relates to the corporate strategy of "borrowing", where growth of businesses is achieved through alliances and contracting (Capron and Mitchell, 2012).

may be recorded within the operating cash flow. Given that financial assets include but are not limited to currency, debt securities, loans, equity and investment fund shares, it is crucial to disentangle and interpret classes of financial assets distinctively (Klinge *et al.*, 2021).

Cash Holdings

A subcategory of financial assets includes cash and cash equivalents, with cash equivalents comprising liquid, short-term financial assets. They are held due to different motives (Bates *et al.*, 2009) and build start and end point of any firm's cash flow statement. From an external viewpoint, the line between financial investment and liquidity holdings is often ambiguous. For instance, minor stakes in financial assets for short durations are viewed as liquidity, while the rationale behind holding such stakes over the long term is less clear. In the national accounts, there is no explicit relationship between the corporate sector's net lending position and cash holdings at the firm-level. Instead, net lending conceptually reflects the net acquisition of all financial assets, including cash, alongside liabilities. Yet, an increase in cash holdings "may be associated with corporate net lending, either because corporations have increased their saving relative to investment in order to bolster their cash holdings, or merely because corporations are parking their excess saving in liquid assets" (Gruber and Kamin, 2016, p. 786).

3. Data and methodology

3.1 Financial data

For the analysis of investment trends at the macroeconomic level, we use national accounts data for the German non-financial corporate sector between 1997 and 2022, sourced from the Eurostat Institutional Sector Accounts Database (Eurostat, 2024). To obtain detailed data on the subcategories of GFCF, we rely on supplementary information provided by the Federal Statistical Office (Destatis, 2024a, 2024b).

For the firm level, we compiled a dataset containing yearly observations for listed non-financial firms in Germany from 1997 to 2022. Consolidated data for listed firms are not limited to domestic activities and may include firms that are not fully representative of the entire corporate sector, limiting comparability with aggregate national accounts data. However, this approach remains the best available option to empirically align macroeconomic trends with firm-level dynamics, given current data availability and the relevance of respective firms to the German economy.[5] The firm-level dataset was sourced from the *Worldscope* database and accessed through the *LSEG Workspace*. It comprises key accounting metrics, including balance sheet and cash flow items, supplemented by additional variables such as founding years and industry codes. The sample was refined to include only firms with available information on total assets, total liabilities, and shareholders' equity. Missing values for other accounting-based variables were treated as zero. To prevent duplication, subsidiaries from firms within the dataset were excluded. Our final dataset comprises 15,977 observations across 1,212 firms.[6]

3.2 Financial strategy survey

Our corporate financial strategy survey consisted of 15 questions and targeted financial executives in listed non-financial firms in Germany. Drawing inspiration from previous corporate finance survey studies, the questions covered firm characteristics, corporate goals, sources of funds, capital

[5] In 2019, listed firms in Germany generated revenues that accounted for nearly 38% of the total non-financial sector's revenues (Eurostat 2024, Giovanazzi and Victor, 2024).

[6] Given the trend of delisting in Germany (Giovanazzi and Victor, 2024), the number of firms per year varies from a maximum of 772 firms in 2000 to a minimum of 462 firms in 2022.

allocation, and investment strategies (Brounen *et al.*, 2004; Graham, 2022). The complete questionnaire and codebook are available in the *Supplementary Appendix*. *Table 1* details firm characteristics for survey firms, which we call survey sample, in comparison to the sample of listed non-financial firms described above.

Table 1. Sample and survey sample firm characteristics.

Target population	**Survey sample**	**Sample**
Total number of firms in 2021	85	480
Aggregate total assets in 2021	905.53 bn Euros	3,593.28 bn Euros
Aggregate total sales in 2021	613.65 bn Euros	2,232.66 bn Euros
Survey sample	**Number of firms**	**% of survey sample**
Firm size (total assets 2021)		
Small (< 5 bn Euros)	63	74.1
Large (> 5 bn Euros)	19	22.4
Firm size (total sales 2021)		
Small (< 5 bn Euros)	67	78.8
Large (> 5 bn Euros)	15	17.6
Survey sample	**Number of responses**	**% of survey sample**
Family firm (item v92)		
Yes	29	34.1
No	56	65.9
Firm with controlling stakeholder (item v93)		
Yes	52	61.1
No	33	39.9
Position of respondent (item v94)		
CFO	13	15.3
CEO	54	63.5
Senior position in finance department	16	18.9
Employee in finance department	2	2.4

Notes: We use the threshold of 5bn Euros in total assets or sales common in the literature to distinguish large from small firms (see Graham, 2022). The category family firm is a self-reported firm characteristic (response to the question: Would you describe your company as a family firm?). The "% of survey sample" figures do not add up to 100% as information on assets and sales is missing for three of the surveyed firms in 2021.

We conducted the survey by programming the questionnaire with Unipark Tivian software. To boost participation rates, we optimized the user interface for smartphone accessibility and set the target average completion time for the survey at 10 minutes. Pretests were conducted with seven corporate finance professionals to ensure clarity, completeness and appropriateness of the questions' wording and answer scales. We made minor adjustments based on the feedback from pretest participants. Our target population comprised 498 listed non-financial firms in Germany

active in 2021, identified using the *Worldscope* database accessed through the *LSEG Workspace*. Contact information for executive positions in respective firms was manually collected including information on Chief Financial Officers (CFOs), Chief Executive Officers (CEOs), and Investor Relations (IR) departments.

The online survey was conducted from July 14 to July 30, 2023. We ensured anonymity to encourage candid responses. Invitations, along with a link to the survey and personalized password, were initially sent via email on July 14, followed by a second email to those that had not participated by July 19. On July 23 and 24, a follow-up message was sent to financial executives on the platforms Xing and LinkedIn, reaching an additional 87 potential participants. A final email was sent to those that had not responded by July 27. As of the survey end date on July 30, we received a total of 85 responses, resulting in a response rate of 17.1 percent. This rate compares favorably to similar but more comprehensive studies, such as the 6.6 percent response rate for Germany reported by Brounen *et al.* (2004). Moreover, the item nonresponse rate, indicating the average of missing answers per question, was notably low at 2.3 percent, suggesting completion of most survey questions by participants. Similarly, the participant nonresponse rate, which reflects the average percentage of unanswered items from each participant, stood at 3.3 percent, indicating a high level of participant engagement and motivation and a well conceptualized survey.

4. Financial analyses

4.1 National accounts

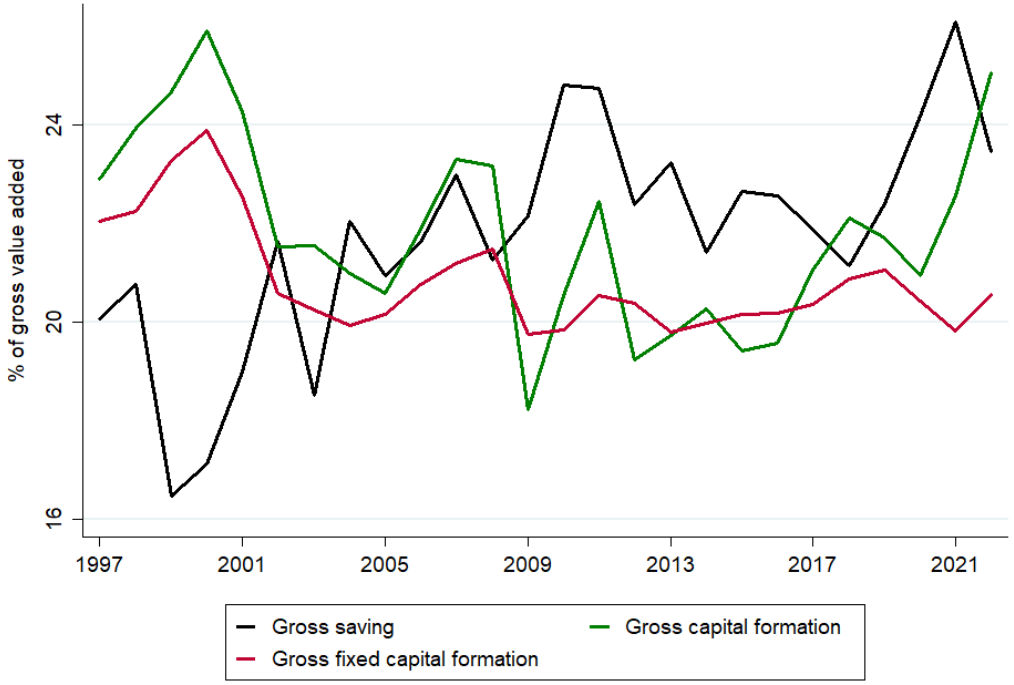
Beginning with national accounts data, *Figure 3* shows gross saving and GFCF in the non-financial corporate sector in terms of corporate GVA. While corporate saving experienced a clear upward trend, increasing from 20% in 1997 to 23.5% in 2022, GFCF shows a stagnating, if not declining tendency, decreasing from 22% to 20.5% in the same period. This implies a positive corporate financial balance and increasing net lending position beginning in the early 2000s. GFCF includes tangible investment, R&D expenditures and partially, other intangible investment. Hence, the development of GFCF can in principle be attributed to changes in all of these investment types as well as their recomposition.

Disaggregating GFCF reveals a notable decline in tangible investment over the observed period. Representing over 82% of GFCF in 1997, tangible investment decreases to around 77% in 2022. Consequently, tangible investment has also decreased relative to GVA, declining from over 18% in 1997 to less than 16% in 2022 (Destatis, 2024a). Conversely, there has been a notable increase in intangible investment in % of GFCF. Intangibles such as software, together with R&D, are grouped under investment in intellectual property, and additions to intellectual property have increased both as a share of GFCF, rising from approximately 17% to nearly 23%, and in terms of GVA, growing from less than 4% to almost 5% (Destatis, 2024a).

Unfortunately, the sector-level time series available for Germany do not provide a detailed breakdown of the subcategories of intellectual property, as data is either differentiated by institutional sectors (Destatis, 2024b), or investment in intellectual property is disaggregated into different subcategories (Destatis, 2024a). Available data indicate, however, that R&D expenditures have increased more strongly than other types of investment in intellectual property. Consequently, we assume that R&D in particular has seen growth both in terms of GFCF and GVA during the 2000s. This trend suggests that the remaining portion of additions to intellectual property, consisting of investment in other intangibles, such as software, has also increased, albeit to a lesser extent than R&D as a share of both GFCF and GVA (Destatis, 2024b, 2024a).[7]

[7] A breakdown of subcategories of investment in intellectual property is available for all non-government sectors combined, which shows that R&D accounts for the largest share within intellectual property investment, with an

Figure 3. Corporate saving and investment in % of GVA.



Source: Eurostat (2024), authors' calculations.

Taken together, the trajectory of GFCF is associated with decreasing investment in tangible and increasing investment in intangible assets, particularly in R&D. The difference between the trajectory of GFCF and GCF in % of GVA, also depicted in *Figure 3*, is determined by the contribution of changes in inventories, which exhibits volatility and lacks a particular trend. Unlike other investment categories, there are instances of negative values, indicating that funds are not directed toward inventory buildup but instead are released through the use or sale of inventories.[8] Regarding the development of the remaining categories described in Chapter 2.1, acquisitions of valuables and additions to goodwill, no conclusions can be drawn due to beforementioned data limitations.

4.2 Aggregate financial statements

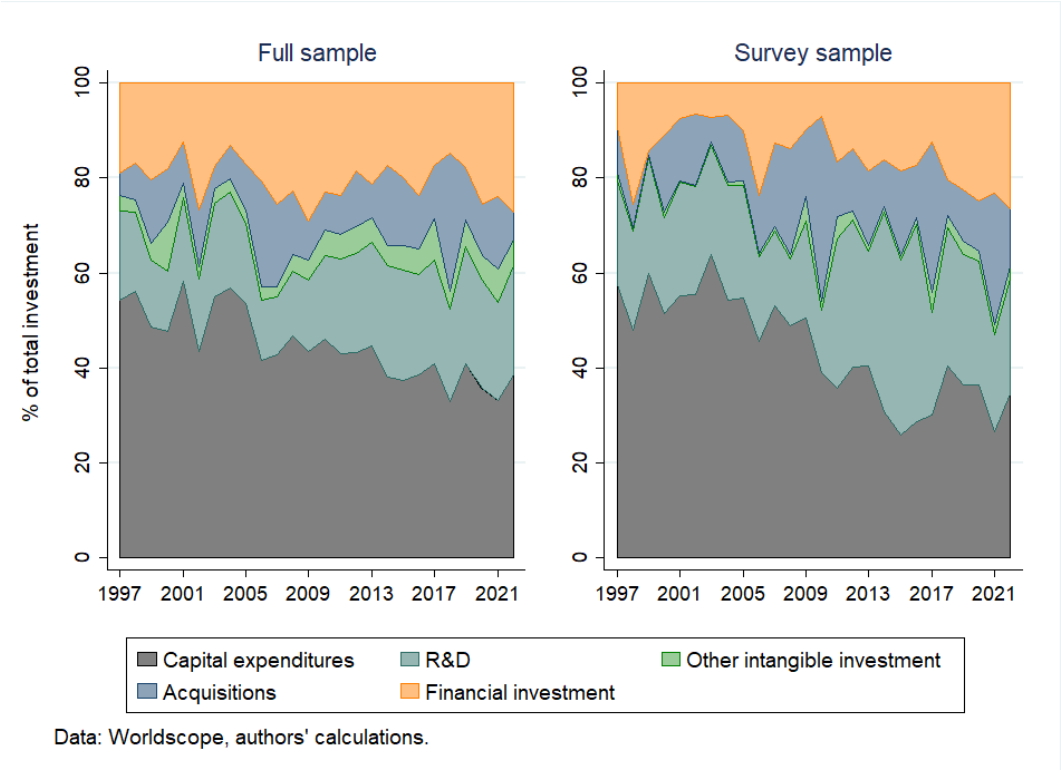
Turning to the firm-level, we present and compare results for both our full sample ("sample") and our survey sample ("survey sample"). Overall, we observe strikingly similar developments, indicating that our survey sample offers a solid representation of the target population. Beginning with investment spending, *Figure 4* illustrates the relative composition of previously identified investing cash flow items aggregated over all sample firms.[9] We further added R&D expenditures from the income statements. Given our focus on investment allocation, we only present items associated with outflows, which together constitute "total investment". As the corporate cash flow depicts the net change of cash from the beginning to the end of the period, we also abstain from presenting monetary flows related to cash.

increasing trend (Destatis, 2024a). Assuming a similar ratio for the non-financial corporate sector specifically – which seems plausible given that this sector accounts for the majority of non-governmental investment in this area – the rise in intellectual property investment particularly indicates an increase in corporate R&D.

[8] Contributions in terms of GVA range from -1.5% in 2009 to 4.5% in 2022.

[9] Regarding investment in financial assets, we use the item increase in investments, which covers spending on the majority of financial asset categories but excludes assets unrelated to investment cash flows (e.g., accounts receivable from operating activities).

Figure 4. Aggregate investing cash flow items.

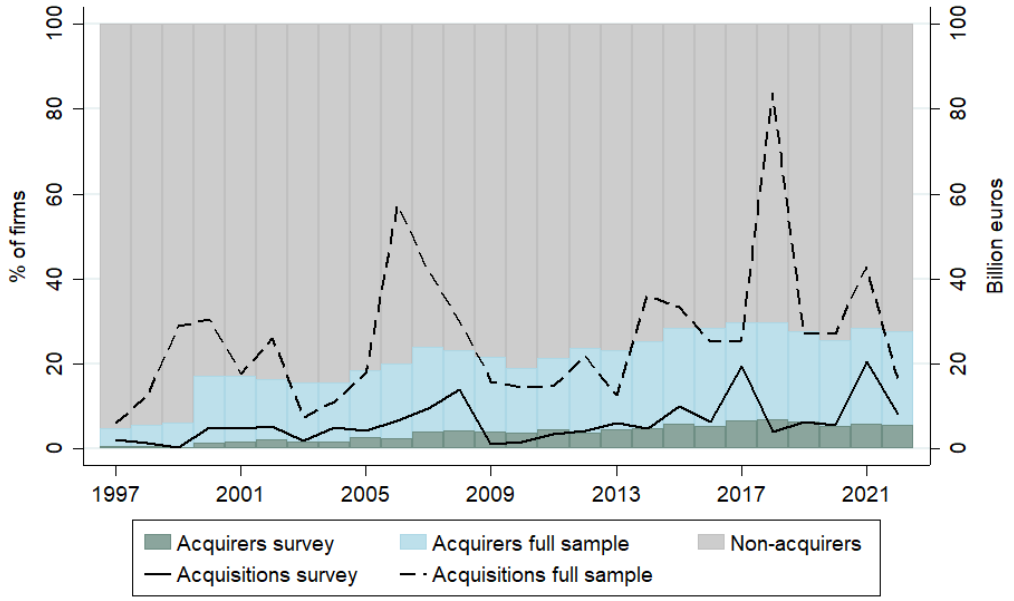


Data: Worldscope, authors' calculations.

To begin with, we note a significant relative decline in capital expenditures for our sample, decreasing from 54.3% of total investment in 1997 to less than 39% in 2022. This trend is even more pronounced in the survey sample, where capital expenditures decrease by more than 23% points over the same period. Compensating for this decline, we find an increase in most other categories. As for intangible investment, R&D expenditures rise from just below 19% to almost 23% for our sample, and from 21.8% to 24.4% for our survey sample in the same period. Investment in other intangibles, although at significantly lower levels, also shows an increase of (0.9%) 2.1% points for our (survey) sample over time. Irrespective of the time trend, R&D activity is particularly concentrated within large companies, which are overrepresented among listed firms compared to the entire corporate sector. In Germany, almost half of corporate R&D expenditures in 2021 were made by firms with more than 10,000 employees (Stifterverband, 2023, p. 16). Hence, it seems plausible that R&D expenditures relative to other investment types constitute a larger share in our samples than in the average German firm. Given the substantial allocation of investment toward R&D, questions arise, consistent with Lev and Gu (2016), as to why these expenditures are not included in the regular investing cash flow in IFRS accounting.

Figure 4 also depicts a positive trend in spending on acquisitions relative to total investment. However, this item is notably volatile, ranging from under 5% in 2003 to almost a third of total investment in 2018 for our sample, and from below 1% in 1999 to 31.7% in 2017 in our survey sample. The volatility can be attributed to waves of M&A in general and infrequent large individual acquisitions in particular, such as the takeover of Schering by Bayer and the acquisition of BOC by Linde in 2006, the acquisition of Siemens' automotive supplier division by Continental in 2007, and Bayer's acquisition of Monsanto in 2018. While trends in frequency and deal value cannot be delineated in our data, we can differentiate between firms that made acquisitions in a given year and firms that did not. *Figure 5* illustrates the evolution of the share of acquirers compared to respective aggregate acquisition expenditures for our full and survey sample. The majority of firms abstains from engaging in acquisitions on a yearly basis, yet, we find a strongly increasing share of acquirers in both samples over time: While in 1997, fewer than 5% of firms made expenditures for acquisitions, this share has continuously grown, reaching around 28% in 2022.

Figure 5. Acquiring firms and spending on acquisitions.



Left axis: Acquirers included in survey sample, acquirers included in full sample, and non-acquirers as percentages of all firms in the full sample. Right axis: Aggregate spending on acquisitions in survey and full sample, in current billions of euros. For illustrative purposes, we exclude one firm that stands out significantly as an outlier, primarily due to accounting adjustments related to corporate restructuring. Data: Worldscope, authors' calculations.

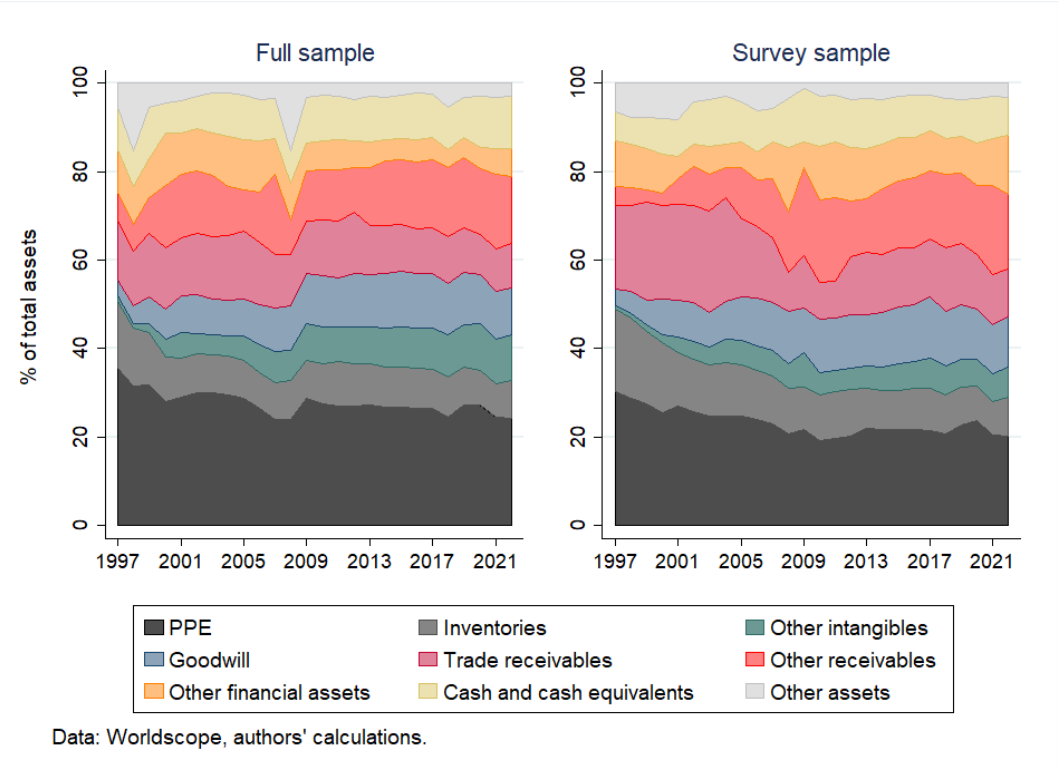
Lastly, with regard to investing cash flow, financial investment represents a substantial portion of aggregate investment allocation (see *Figure 4*). From 1997 to 2022, spending on financial assets in our sample surged by over 8% points, climbing from under 19% to 27.2% of total investment. Notably, this increase was even more pronounced in our survey sample, soaring by 17.2% points, respectively.

Translating investment spending to the balance sheet, *Figure 6* illustrates different types of assets aggregated over all firms in our samples as percentages of total assets. Corresponding to the reduction in capital expenditures depicted in *Figure 4*, PPE exhibits a notable decrease of over 11% points, dropping from 35.4% to 24.2% of total assets in our sample from 1997 to 2022. In our survey sample, we observe a respective decline of 10.2% points to 20.1%.[10] In contrast, we observe a substantial increase in intangible assets, climbing from just over 1% to more than 10% of total assets over the observed period. For our survey sample, intangible assets rise from almost non-existent levels to 6.8% of total assets. This surge closely aligns with observed trends in additions to intangibles and R&D expenditures in the aggregate investing cash flow.

Concerning M&A, *Figure 6* shows that goodwill more than triples over time, constituting 10.8% of total assets in 2022 in our sample. In close correspondence, we observe a surge of 7.6% points for our survey sample. As *Figure 5* suggests, the surge in goodwill is not refined to individual companies but widespread across firms. While the ratio of goodwill to total assets varies significantly, in 2022, 68% of all firms declare goodwill resulting from past acquisitions on their balance sheets, and 80% of firms in the survey sample, respectively.

[10] A similar downward trend is evident in inventories. While they constitute approximately 15% of total assets in 1997, they comprise less than 9% in 2022 in our sample, with a corresponding decrease of 10% points in our survey sample. This decline aligns with the widespread implementation of just-in-time production over recent decades. However, a resurgence in their share at the end of the period is likely to reflect a response to disrupted supply chains associated with the COVID-19 crisis.

Figure 6. Aggregate assets.



Data: Worldscope, authors' calculations.

The remaining portion of the balance sheet comprises financial assets, which have increased by 4.1% points, from 39.1% to 43.2% of total assets over the observed period. The first category, receivables, generally constitutes a significant and growing portion of total assets. However, there has been a notable shift in composition: The share of trade receivables – claims against customers for goods or services that have been delivered and invoiced but have not been paid yet – has decreased by 3.6% points, while the share of other receivables has seen an increase of more than 8% points. The latter category includes the provision of loans to customers and constitutes more than 15% of total assets in our sample in 2022. This trend is even more pronounced for our survey sample, with trade receivables decreasing by 7.8% points and other receivables increasing by 12.4% points from 1997 to 2022. Other financial assets, encompassing portfolio investment and equity stakes in unconsolidated subsidiaries, have diminished by 3.3% points in our sample but increased by 3.1% points in our survey sample over the observed period. While one might expect a more pronounced increase in financial assets over time, corresponding to the investing cash flow allocated to their acquisition, *Figure 5* illustrates only outflows. When accounting for monetary inflows from the disposal of financial assets, we find no increase in net financial investment over time, which aligns with the observed moderate increase in overall financial assets in the aggregate balance sheet.

As a last finding for assets, the proportion held as cash and cash equivalents increases slightly for both the sample and survey sample over the observed period, by 2.2% points and 2% points, respectively. Disaggregating for size, we find that smaller firms hold more cash, which is consistent with the fact that firms with riskier cash flows and financial constraints hold larger cash reserves. Yet, we observe only small aggregate increases in cash holdings for both large and small firms.

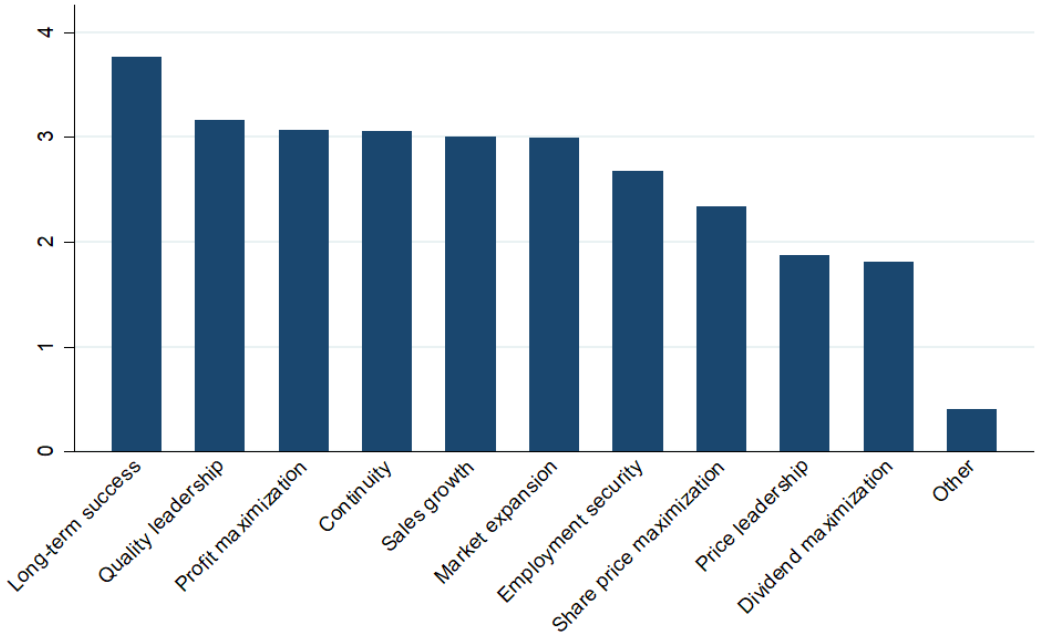
Collectively, the prevailing trends reveal a changing investment landscape: First, we note a significant reduction in the relevance of tangibles, measured both in capital expenditures over total investment and PPE over total assets. Second, we observe a rising importance of intangibles, given an increase in R&D expenditures and spending on other intangibles in terms of total investment, and reflected on the aggregate balance sheet. Both in the full and survey sample, we identify an increasing importance of M&A, observable in rising spending on acquisitions in the aggregate cash

flow and increasing goodwill. As *Figure A2* (see *Appendix*) suggests, the growing importance of intangible assets is not limited to a specific subset of firms. Instead, this trend is observable across the entire sample, with a consistent rise over time for the intangible-to-tangible assets ratio for the aggregate, for the median, and for firms at the 25th and 75th percentiles. Lastly, while we find an increase in expenditures related to the acquisition of financial assets relative to total investment, a recomposition within financial assets takes place, and particularly receivables indicative of financial services provisions witness an increase. Increases in cash holdings as of total assets are subtle, as cash and cash equivalents remain relatively stable even during the 2007-9 financial crisis.

5. Financial strategy survey results

We turn to the perspective of financial executives presenting the results of our financial strategy survey in the following. To generate a greater picture around the reasoning with respect to capital and investment allocation, our analysis includes corporate financial strategy and goals.

Figure 7. Corporate goals.



Weighted average response to the question: Which goals are important for your company? [0 not important; 4 very important]

Beginning with the latter, *Figure 7* shows that long-term success is the most important goal for firms. More nuanced insights emerge from subsequent objectives: Ranging between mean values of 3.16 and 2.99, quality leadership, profit maximization, continuity, sales growth, and market expansion are considered rather important by respondents. Likely due to their need for market penetration to establish themselves in competitive industries, small firms evaluate sales growth significantly more important than large firms (p-value: 0.02, delta of mean values: 0.75).[11] Share price maximization trails behind other goals and dividend maximization is considered not important. While surprising given the stock market listing of survey firms, this finding fits well into stakeholder-oriented corporate governance, which, despite an increasing importance of shareholder-value-oriented practices, is an integral characteristic of the German corporate

[11] We identify groups (family, non-family; large, small) and respective inter-group differences according to the criteria in *Table 1*.

landscape (Giovanazzi, 2024; Jackson and Sorge, 2012). The low relevance of price leadership is mirrored by the high ranking of quality leadership. This result aligns with the coordinated nature of Germany's economy, where firms are well-positioned to achieve high levels of quality control due to their close relationships with stakeholders, providing them with a competitive advantage in quality-driven markets (Hall and Soskice, 2001, p. 44). As expected, large firms consider price leadership significantly more important than small firms (p-value: 0.02, delta of means: 0.78). Furthermore, the emphasis on securing employment (mean value 2.8) resonates with industrial relations grounded in employee cooperation and wage moderation, and the workforce characterized by industry- and firm-specific skills, thus enabling and necessitating the long-term retention of employees (Hall and Soskice, 2001). Overall, our results align with the perception of Germany as a coordinated market economy, which builds on long-term considerations, stakeholder orientation and niche production. They also correspond to previous corporate finance study results for Germany (Brounen *et al.*, 2004).

Asked more specifically about goals in corporate financing, respondents find ensuring liquidity most, and increasing return on equity least important on average, while both securing independence and risk reduction are considered rather important (see *Figure A3, Appendix*). However, all items are rated somewhat important. Unsurprisingly, firms that identify themselves as family firms find securing independence significantly more important than firms with other ownership structures (p-value: 0.01, delta of mean values: 0.5).

In line with prioritizing the ensuring of liquidity, *Table 2* shows that strategic financial decisions are most aligned with liquidity preservation, with 70 out of 85 firms ranking it as their first or second priority. When asked for motives for holding liquidity (see *Figure A4, Appendix*), firms on average indicate that maintaining operational capability in crisis situations and liquidity for day-to-day operations are most important, whereas earnings from current financial investment are least relevant. *Table 2* also shows that investment policy is generally considered more relevant than the way in which it is financed. On average, firms least align strategic financial decisions with payout policy.

Table 2. Strategic financial decisions.

Rank (total score)	Item	Rated 1. (score)	Rated 2. (score)	Rated 3. (score)	Rated 4. (score)	Rated 5. (score)
1. (359)	Liquidity preservation	48 (240)	22 (88)	9 (27)	2 (4)	0 (0)
2. (313)	Investment policy	23 (115)	35 (140)	16 (48)	5 (10)	0 (0)
3. (253)	Capital structure policy	11 (55)	19 (76)	30 (90)	16 (32)	0 (0)
4. (160)	Payout policy	2 (10)	4 (16)	16 (48)	41 (82)	4 (4)
5. (27)	Other	1 (5)	1 (4)	2 (6)	1 (2)	10 (10)

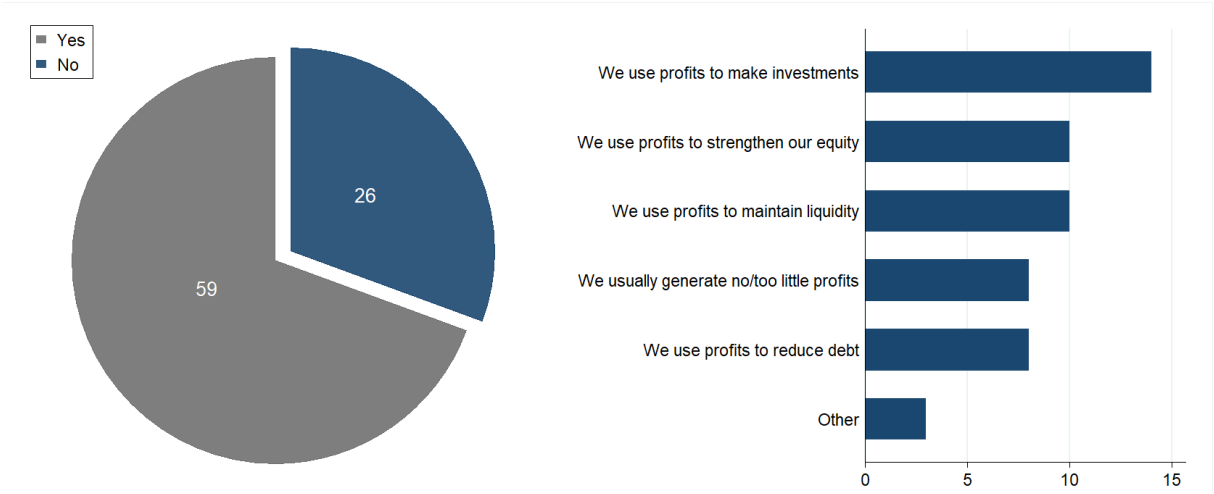
Note: Ranking results from weighted responses to the question: In which area do you primarily align your strategic financial decisions? [By clicking on the individual responses, you can put the options relevant to you in a preferred order. Clicking again allows you to adjust the ranking of each answer at any time.]

Turning to payouts as a form of capital allocation more specifically in *Figure 8*, we asked respondents if they usually distribute profits to shareholders. Overall, 70 percent of survey firms distribute profits, of which almost all firms always pay dividends.[12] Consistent with previous

[12] Payouts are known to be positively correlated with firm size and age, as young and small firms typically generate fewer profits, prioritize growth, and face higher uncertainty regarding their cash flows and financing (Kahle and Stulz, 2021). Accordingly, we observe that large firms are significantly more likely to usually distribute profits than small

findings drawing on firm-level data (Giovanazzi, 2024), respondents indicate that special dividends and share buybacks are rarely or never used. Of our survey firms, 26 do not distribute profits at all.[13] When asked why, 38 percent of these firms use profits to maintain liquidity and/or to strengthen equity, and 53 percent indicate that they use profits to make investments. Overall, payouts are not particularly relevant in corporate capital allocation among survey firms. Instead, we confirm the previously stated prioritization of both liquidity holdings and investment.

Figure 8. Payouts.



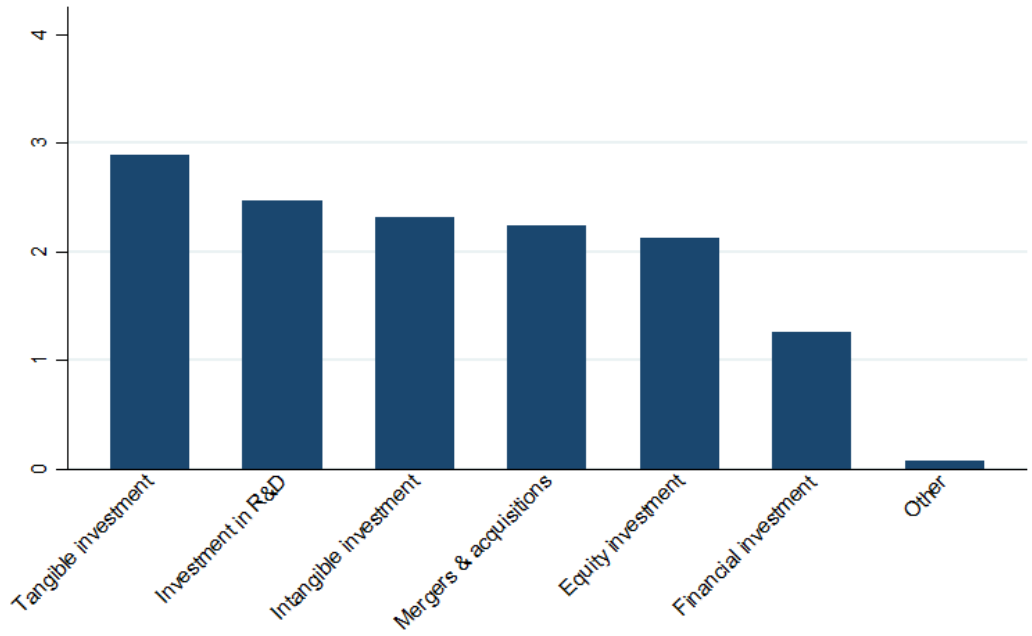
Responses to the questions: Does your company usually distribute profits to shareholders? If respondents answered "no": Why not?

Specifically addressing investment, we asked which types of investment are important to firms and how the relevance of these investment types has evolved in the long-term. As observable in *Figure 9*, almost all types of investment are considered somewhat important on average, with mean values ranging from 2.89 for tangible investment to 2.13 for long-term equity investment. With the exception of equity and financial investment, respondents also indicate that all other investment types have become more relevant over time. Additionally, there is a strong correlation between responses regarding the current importance of investment types and their perceived changes over time. Large firms, however, find tangible investment significantly more relevant than small firms (p-value: 0.03, delta of means: 0.76). This result is most likely driven by industry, as large firms in our sample are primarily concentrated in manufacturing. Equally, M&A is significantly less relevant for small firms (p-value: 0.04, delta of means: 0.79). While larger firms often resort to acquisitions, smaller firms have a broader array of organic growth opportunities but face constraints in acquisitions due to financing or integration challenges (Capron and Mitchell, 2012; Capron, 2016). Regarding long-term financial investment, family firms consider this category significantly more important than non-family firms (p-value: 0.01, delta of mean values: 0.76). One possible explanation is that family firms are more inclined to accumulate wealth in the form of liquid and financial business assets, facilitating a smoother transfer to the next generation (Giovanazzi and Victor, 2024).

firms (p-value: 0.03). Regarding age, survey firms indicating not to distribute profits are significantly younger on average than those that do. However, with a median age of 25 years, these companies are not exclusively newly founded firms either.

[13] Of those, 17 have indicated that dividend maximization is of no or rather no relevance within corporate goals (see *Figure 7*).

Figure 9. Relevance of investment types.



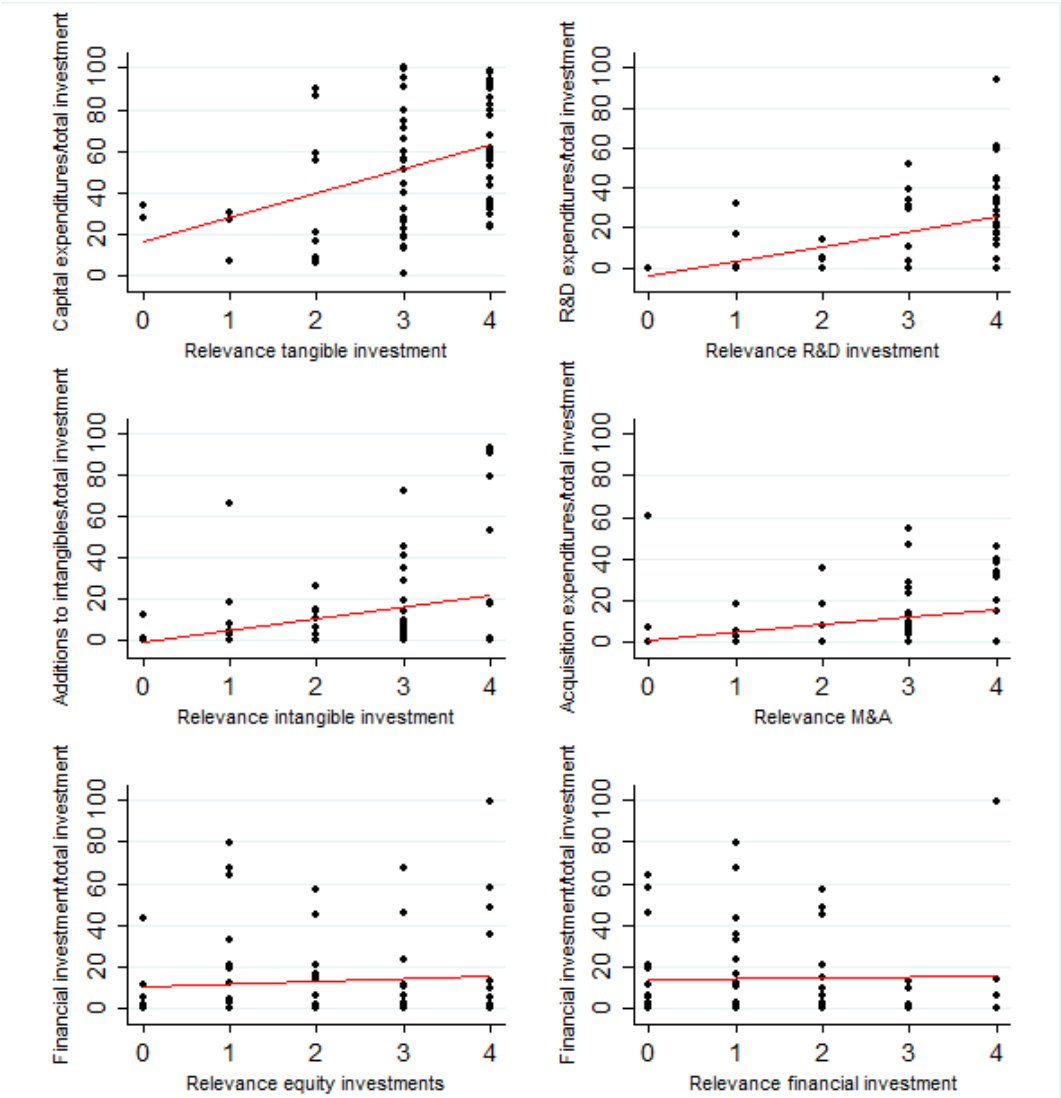
Weighted average response to the question: Which types of investment are important for your company (measured by the volume of invested capital)? [0 not important; 4 very important]

To assess the alignment between survey results and firm-level financial data, we correlate individual ratings on investment types with respective firm's investment spending as a share of total investment spending.[14] *Figure 10* shows significant positive correlations between ratings and financials for tangible investment, spending on R&D, investment in intangibles, and M&A expenditures. However, correlations for equity and financial investment are small and not statistically significant, possibly due to the firm-level data subsuming both under financial investment, or respondents not fully recognizing the relevance of financial investment. Moreover, when analyzing changes in the relevance of investment types, the average survey responses do not correspond with firm-level investment trends. While *Figure 4* reveals a significant decrease in capital expenditures alongside growth in other investment categories, survey responses suggest that not only R&D, investment in intangibles, and M&A have increased in relevance over time, but also tangible investment. Despite the growing share of aggregate investing cash flow allocated to financial investment, respondents indicate no change in importance for equity investment and even suggest a declining importance of financial investment.

The similar evaluations of different investment types and the strong correlations between their current importance and perceived changes over time suggest potential biases in responses. First, the acquiescence bias indicates that respondents may agree with or rate statements similarly when uncertain (Groves *et al.*, 2009; Tourangeau *et al.*, 2000). Second, anchoring bias implies that respondents base their assessments of changes primarily on current relevance. For instance, as tangible investment is considered important today, respondents tend to assume its relevance has increased over time. These biases are common in survey research and present challenges for interpreting the perceived changes in the importance of investment types (Groves *et al.*, 2009; Tourangeau *et al.*, 2000).

[14] Respective items are also used in *Figure 4* to depict the aggregate investing cash flow. Total investment spending is derived from the aggregation of respective investment spending items per firm.

Figure 10. Relevance of investment types and shares of investment spending

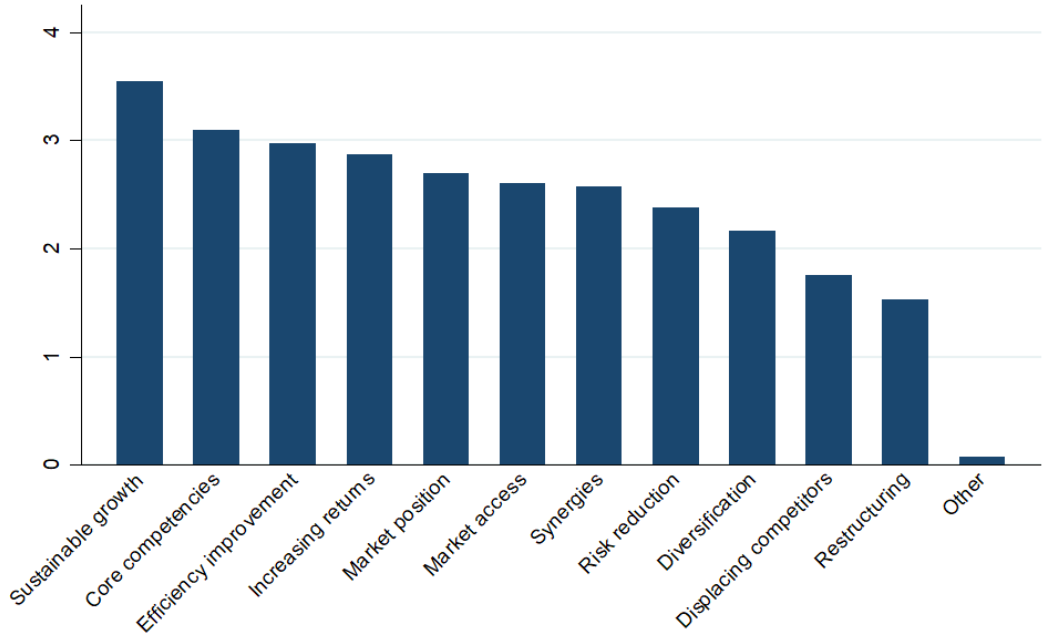


Three year average of expenditures on different investments types as percentage of total investment (firm-level financials) plotted against the relevance of investment types as indicated by survey respondents (-2 unimportant; 2 very important). Data: Worldscope, financial strategy survey, authors' calculations.

We then asked financial executives about their motives when investing, and how these motives have evolved over the long-term. As observable in *Figure 11*, sustainable growth is by far the most important motive on average. Similar to long-term success, however, it lacks specificity (see *Figure 7*). Several items – from strengthening core competencies to efficiency improvement, to risk reduction and diversification of industry, products and/or services – are considered rather important by financial executives (mean values between 3.09 and 2.16). Within this group, the mean value for strengthening core competencies exceeds that for diversification by nearly one scale point, indicating that, on average, firms prefer to streamline operations over venturing into diverse branches. Both displacement of competitors and restructuring are deemed of poor importance, and the latter appears consistent with the goals of continuity and employment security (see *Figure 7*). However, both terms carry negative connotations: while displacing competitors suggests an aggressive business strategy, restructuring is often associated with poor management skills and layoffs. Therefore, survey participants might have responded in a manner they wished to convey, potentially due to social desirability or self-representation biases (Groves *et al.*, 2009; Tourangeau

et al., 2000). Similar to the questions on investment types, we find strong correlations between responses on the importance of investment motives and their long-term development. Investment motives cannot be meaningfully compared with financial data, however, given the likelihood of anchoring bias in previous responses, we assume this bias to extend to the assessment of investment motives.

Figure 11. Investment motives



Weighted average response to the question: Which motives are important for your company when investing? [0 not important; 4 very important]

Lastly, we examine the relationship between the indicated importance of investment types and investment motives. All significant correlations are positive, yet weak to moderate. For instance, tangible investment shows a weak correlation with positioning in sales and procurement markets (p-value: 0.02, coefficient: 0.25), while intangible investment is weakly correlated with displacement of competitors (p-value: 0.04, coefficient: 0.23). The latter may be explained by the strategic value of intangibles such as patents or licensing, which provide firms with a competitive edge through scalability and complementarities (Haskel and Westlake, 2018). Regarding M&A, moderate correlations prevail with motives such as synergies, economies of scale and scope (p-value: 0.0001, correlation: 0.4), expansion into new sales and procurement markets (p-value: 0.0002, coefficient: 0.39), positioning in sales and procurement markets (p-value: 0.01, correlation 0.29), and diversification of industry, products, and/or services (p-value: 0.0002, correlation: 0.4). Lastly, M&A is weakly correlated with displacement of competitors (p-value: 0.02, correlation: 0.25). These motives are known to be relevant for M&A in Germany, and results indicate that M&A are an investment type usually undergone for strategic rather than personal of financial reasons (Witt, 2019). The weak correlations likely arise from the complexity of aligning specific investment types with distinct motives, as firms often integrate multiple investment types within their portfolios to pursue diverse objectives, making it difficult to isolate clear relationships (Capron and Mitchell, 2012). Additionally, profitability is a key driver of investment decisions, with firms using financial assessment techniques – such as net present value, hurdle rates, scenario analysis, and multiples – to prioritize opportunities based on expected returns (Graham, 2022). Thus, even when an investment type aligns with a strategic motive, profitability may take precedence, contributing to the weaker correlations.

6. Discussion

The previous sections provided both macroeconomic and firm-level insights into corporate investment trends in the 2000s. Tangible assets and investments emerge as the most important type of investment in Germany, as reflected in the national accounts, firm-level data, and financial executives' perspectives: Tangible investment constitutes the largest share of GFCF, capital expenditures and PPE represent the dominant investment categories in aggregate financial statements, and executives rank tangible investment as the most relevant investment type. This finding aligns with Germany's strong industrial base, particularly in manufacturing, which significantly shapes the non-financial corporate sector and results in a relatively high aggregate proportion of tangible assets (Giovanazzi and Victor, 2024; Haskel and Westlake, 2018). However, the importance of tangible investment decreases over the observed period, as indicated by the declining share of tangible investment in GFCF, lowering capital expenditures in the aggregate investing cash flow and a decrease in PPE over aggregate assets.

Instead, we observe an increasing importance of both intangible assets and investment at the macroeconomic and firm level, which is also confirmed by executives' perception. Although not all intangible investment is included in GFCF, its increase offsets the decline in tangible investment and hence, leads to an overall stagnating GFCF in terms of corporate GVA. This finding aligns well with the "rise of the intangible economy", meaning the globally changing business environment through the increasing importance of intellectual property, knowledge and software (Haskel and Westlake, 2018). Intangibles are predominantly associated with the emergence of new and successful firms in the tech and pharmaceutical industry, and stand out particularly in the U.S. and U.K., where aggregate intangible investment has exceeded tangible investment on average between 1999 and 2013 (Haskel and Westlake, 2018). Due to their concentration in manufacturing, German firms still "invest more in tangibles than in intangibles" and production is characterized by a low-to-moderate intangible intensity (Haskel and Westlake, 2018, p. 26). However, the manufacturing sector is also marked by the growing significance of intangible assets: automobiles increasingly rely on software and automation, the production and distribution of chemicals is linked to licensing and patenting, and mechanical engineering requires automated production processes. Based on our firm sample composition, we affirm that the growing importance of intangible investment, especially in R&D, extends beyond young and emerging firms. Rather, even established firms in Germany's traditional industries embrace investment strategies increasingly centering around intangible assets. Hence, the increasing importance of intangibles is both, observable across firms and consistent with a manufacturing sector which is about to develop a broader asset portfolio than before the 2000s, spurred by the demands of a digitalized and interconnected business world. However, the rise of the intangible economy, particularly driven by R&D investment in GFCF, is only sufficient to offset the decline in tangible investment and does not keep pace with the rise in corporate saving in the national accounts. Therefore, the corporate net lending position of Germany increases over the observed period, suggestive of rising accumulation of financial assets of the corporate sector.

This development is broadly conceptualized as corporate financialization, according to which non-financial firms increasingly orient their strategies and goals toward financial markets (Klinge *et al.*, 2021). This results in, but is not limited to, the acquisition of financial rather than tangible assets (the asset-based view), increasing revenue streams from financial activities rather than real production (the accumulation-based view), and shareholder-value-oriented business practices. The evidence on financialization mostly encompasses Anglo-Saxon countries, analyzes different indicators and units, and shows mixed results. In the U.S., some research points to asset-based financialization among non-financial firms (Davis, 2016, 2018), while others argue that certain financial assets ultimately reflect activities like tax optimization, internationalization of production, and activities refocusing (Rabinovich, 2019).

Regarding Germany, our findings suggest moderate and partial corporate financialization. At the firm level, we find only a small increase in financial assets on the aggregate balance sheet, which is

insufficient to speak of asset-based financialization. More importantly, with regard to financial assets, we observe a recomposition from trade receivables to other receivables in the aggregate balance sheet. This indicates corporate financialization in the sense that non-financial firms not only sell their products but have increasingly shifted their focus to providing financial services to customers to enhance sales (Reddy, 2023). Furthermore, we observe a substantial increase in financial investment in the aggregate investing cash flow, however, this is offset by monetary inflows from the disposal of financial assets, ultimately not indicating a rise in net financial investment. In addition, the results of our financial strategy survey confirm low to moderate corporate financialization in terms of shareholder value orientation and therewith confirm previous studies (Giovanazzi, 2024). Firms least align strategic financial decisions with payout policy, a third of our survey sample does not distribute payouts to shareholders at all, and share buybacks constitute the exemption rather than the rule. In addition, dividend maximization is only of minor importance as a corporate goal and for instance, less important than securing employment, while financial executives assess financial investment as of low and decreasing relevance. The latter point could indicate that financial executives do not view financial investment as a substitute or alternative to tangible or intangible investment. Rather, and in line with the preference for liquidity preservation in strategic financial decisions, they are understood as a means of securing liquidity.

Taken together, these findings paint the picture of Germany as a coordinated market economy that remains stakeholder-oriented and does not adopt shareholder-oriented practices at large. This is particularly noteworthy given the listed nature of the firms in our sample. While there is some corporate financialization at work, central aspects, such as the accumulation of financial assets, are not evident in firm-level data and accordingly not suitable for explaining the decline in tangible investment at the firm level, a main proposition of corporate financialization research.

What is more, these developments raise questions regarding the net lending position reflecting the corporate accumulation of financial assets. In theory, it should be possible to determine whether there has been an accumulation of financial assets across the entire sector by examining the corporate financial balance sheet in the national accounts. However, although they should correspond to net lending, the acquisitions of financial assets net of incurrence of liabilities depicted in the financial accounts diverge significantly for Germany (Eurostat, 2024). Rather, due to its residual nature, the corporate net lending position not only includes financial assets, but further extends to remaining uses of funds which are not considered investment spending in a macroeconomic sense. These include spending on non-produced assets such as licenses and spending on acquisitions in excess of targets' respective balance sheet items.

Regarding M&A, firm-level data show a considerable rise in acquisition spending in the aggregate investing cash flow, paralleled by a notable increase in the share of goodwill in the aggregate balance sheet. In addition, we observe an increasing number of firms engaging in M&A over time. This finding corresponds to data from the Institute for Mergers, Acquisitions and Alliances (2024), which indicate that M&A activity has increased between 2010 and 2021 in both deal value and number of deals at the country-level. It also aligns with research indicating a rise in deal volumes among DAX and MDAX firms from 2013 to 2022, suggesting a dynamic landscape with "fewer transformational 'mega' deals, but more targeted, complimentary, integratable M&A" (Freshfields, 2023). Institutionally, while the U.S. and U.K. have long had a vital market for corporate control, Germany's regulatory setup only began to enhance corporate transactions in the late 1990s (Mager and Meyer-Fackler, 2017). The increase in M&A activity beginning at the turn of the millennium is likely associated with significant legal changes during that period, which facilitated a market for corporate takeovers in Germany following the model of liberal market economies (Jackson and Sorge, 2012; Mager and Meyer-Fackler, 2017). The surge in goodwill suggests that spending on acquisitions is, at least partly, driven by the excess costs of these transactions, and not by already capitalized assets of acquired companies. Also confirmed by survey respondents, the data suggest that acquisitions increasingly shape firms' investment allocation strategies. In line with a broad array

of strategic, personal and financial motives, "buying" capacities has become more attractive (Capron and Mitchell, 2012; Witt, 2019).

The rising importance of M&A as an investment type raises the question whether goodwill as an asset is representative of real economic value. And, more importantly, whether spending on acquisitions should be classified as investment spending at the macroeconomic level. A perspective that can be taken posits that goodwill encompasses assets that possess inherent value to the firm but are not routinely captured and distinguished in corporate accounting. Only once a transaction takes place, due diligence processes uncover the worth of intangible assets such as organizational capital, established supplier relationships, clients list, and other non-routine items, which are then accounted for as goodwill. Due to this uncovering of value, additions to goodwill represent an expansion of the economy's capital stock and should therefore be considered an investment in a macroeconomic sense. However, another viewpoint suggests that the premium is paid for reasons aligned with the strategic interests of the acquiring firm, without reflecting additions to productive assets. For instance, in so-called "killer acquisitions" firms acquire innovative competitors to end their innovation processes and eliminate them from the market (Cunningham *et al.*, 2021). While such acquisitions can be considered investment at the firm level as they potentially increase future returns, they do not qualify as investment in a macroeconomic sense, since they do not expand the economy's production capacity by increasing the capital stock, but merely present a change of ownership of business assets. Lastly, it remains a contentious issue to what extent acquisitions represent a valuable investment type even for individual firms. Up to 70% of business combinations fail to deliver the anticipated value for one reason or another, despite promises of value creation (Capron, 2016).

Whichever viewpoint one takes, the national accounts should at least in theory include additions to goodwill in the change of non-financial assets, and it seems problematic that related flows are not included in the time series for Germany. First, even if goodwill only partially represents real economic value, the national accounts increasingly misrepresent expenditures made by the corporate sector. Second, the time series artificially inflate the net lending position of the German corporate sector due to the inclusion of goodwill, and consequently overestimate the accumulation of financial assets. Third, regardless of their evaluation, if these flows are included for other countries, it becomes increasingly difficult to meaningfully compare investment trends across nations. As unclear as the extent of goodwill at the macroeconomic level may be, it would be beneficial to consistently and comprehensively capture respective flows to enable comprehensive analysis.

7. Conclusion

Our analysis shed light on the complexities surrounding corporate investment trends in Germany from the late 1990s to 2022. By employing a mixed-methods approach, which combined macroeconomic data, firm-level analysis, and insights from financial executives, we identified nuanced patterns and discrepancies across various investment categories.

Several key findings emerged from our study. First, while tangible investment has remained the most relevant investment category across all data sources, both macroeconomic data and firm-level analyses indicated a relative decline. However, this decline was offset by increased investment in intangible assets, particularly in R&D, resulting in stagnant GFCF relative to GVA. This shift mirrors the emergence of the intangible economy, where intellectual property, software, and other knowledge-based assets are increasingly important investment categories. As highlighted, this trend is not industry-specific but extends across our entire sample, including traditional sectors of production such as manufacturing.

Second, however, the rise of intangibles has not kept pace with the growth of corporate saving over the observed period, leading to an increased net lending position. This is usually taken as

evidence for a greater allocation of funds toward financial assets and suggestive of corporate financialization. Yet, we find corporate financialization in Germany to be moderate and nuanced, as the accumulation of financial assets is only partially reflected in firm-level data and firms continue to emphasize stakeholder orientation. This aligns with the view of Germany as a coordinated market economy, where strategic decisions prioritize long-term sustainability and liquidity preservation over short-term financial gains.

Third, the finding of an increasing orientation toward M&A in investment allocation, as identified in firm-level data and confirmed by financial executives, is not sufficiently reflected in macroeconomic data. In the national accounts, spending on M&A beyond the book value of assets is not accounted for as goodwill but rather as net lending, since the item goodwill is missing from the German times series. Therefore, potentially misleading conclusions arise, such as overstating corporate financialization.

These results underscore the necessity of employing diverse data sources and analytical levels to achieve a comprehensive understanding of corporate investment dynamics. While macroeconomic perspectives provide valuable insights drawing on the national accounts, the aggregation of data can obscure how firms allocate resources and adapt their strategies over time.

Importantly, discrepancies between macro- and micro-level analyses highlight the necessity of cross-referencing national accounts with firm-level data and qualitative assessments. This approach not only enhances our understanding of emerging trends but also serves as a continuous plausibility check for categorizing different flows and stocks. Future research and policy analyses should continue to consider these multifaceted dynamics, ensuring that evolving investment patterns are comprehensively understood and effectively addressed. This iterative methodology is essential for fully grasping the drivers of investment behavior, the changing landscape of corporate asset allocation, and the broader implications of the structural shift toward an increasingly intangible and acquisitive economy.

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Appendix

Figure A1. Aggregate liabilities and shareholders' equity.

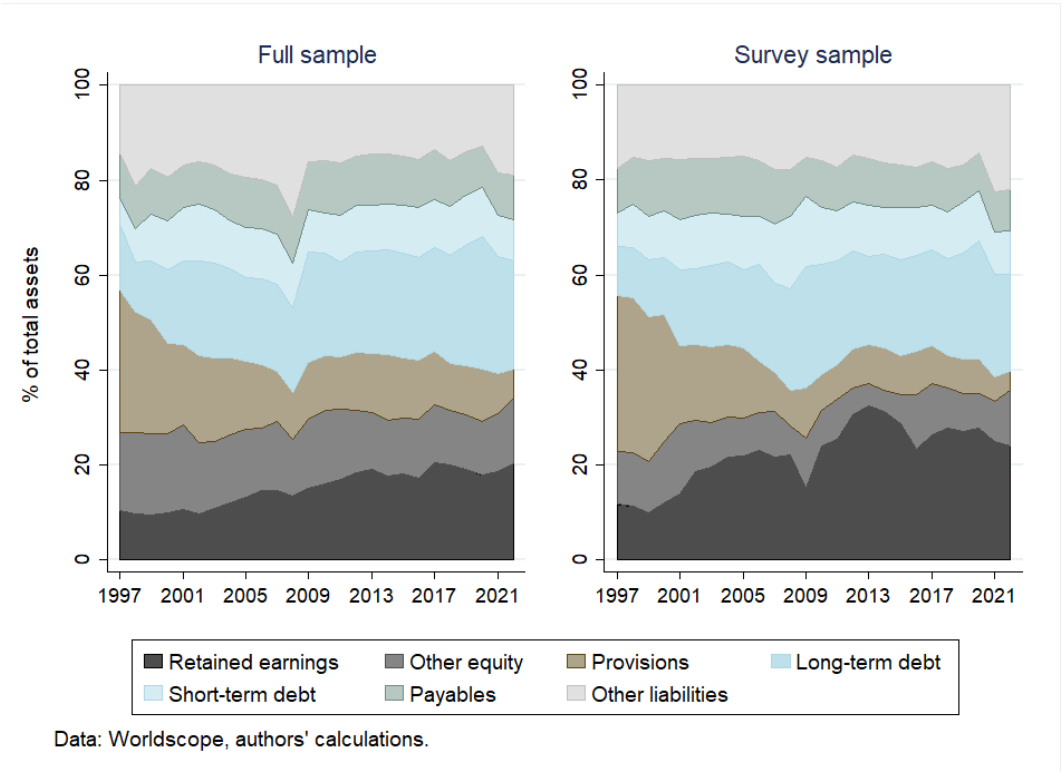


Figure A2. Aggregate intangible relative to tangible assets.

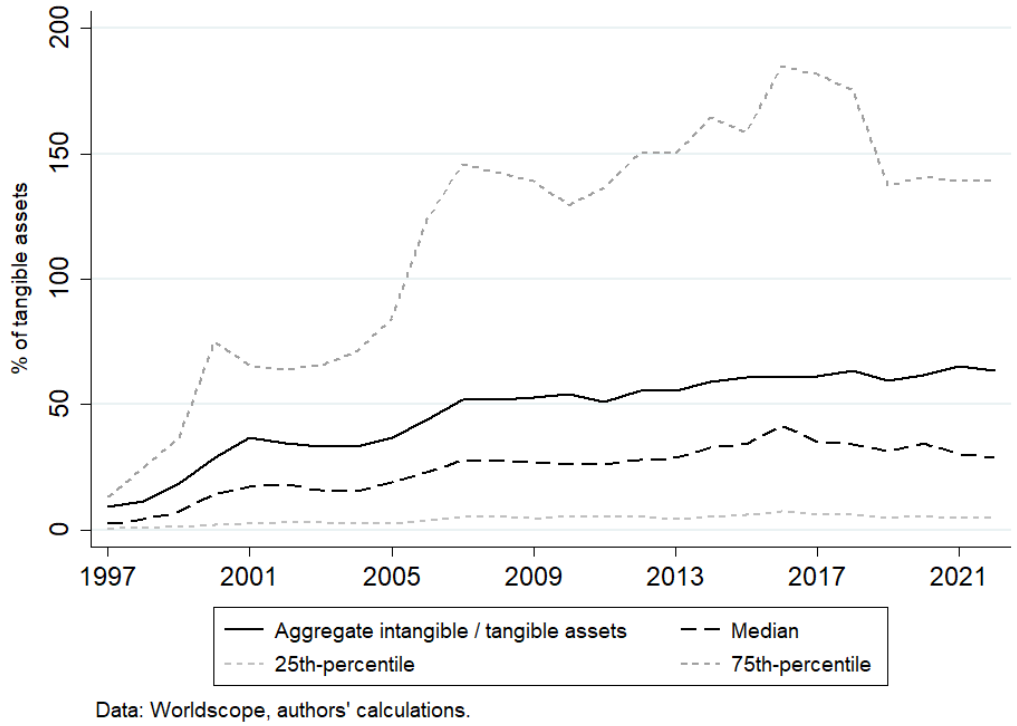
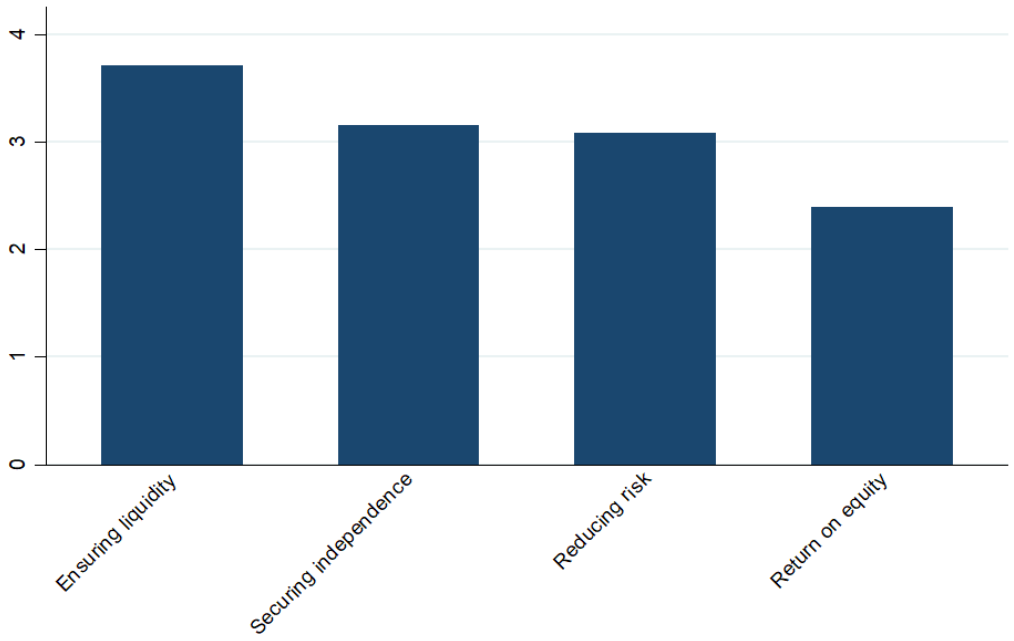
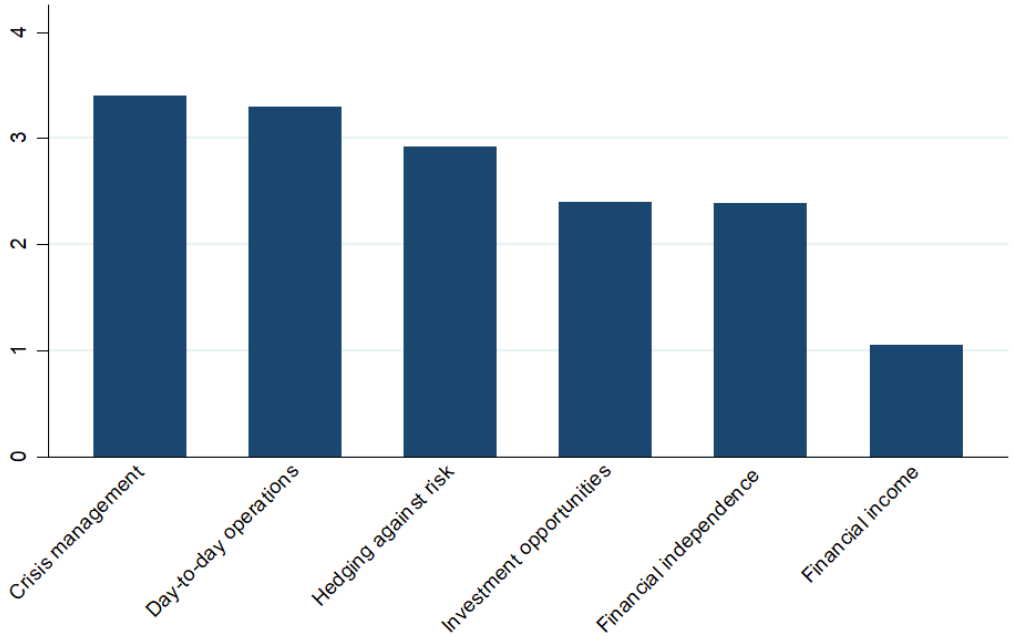


Figure A3. Goals in corporate financing.



Weighted average response to the question: Which goals are important for your company in corporate finance? [0 not important; 4 very important]

Figure A4. Liquidity motives.



Weighted average response to the question: Which motives are important for your company when holding liquid assets? [0 not important; 4 very important]

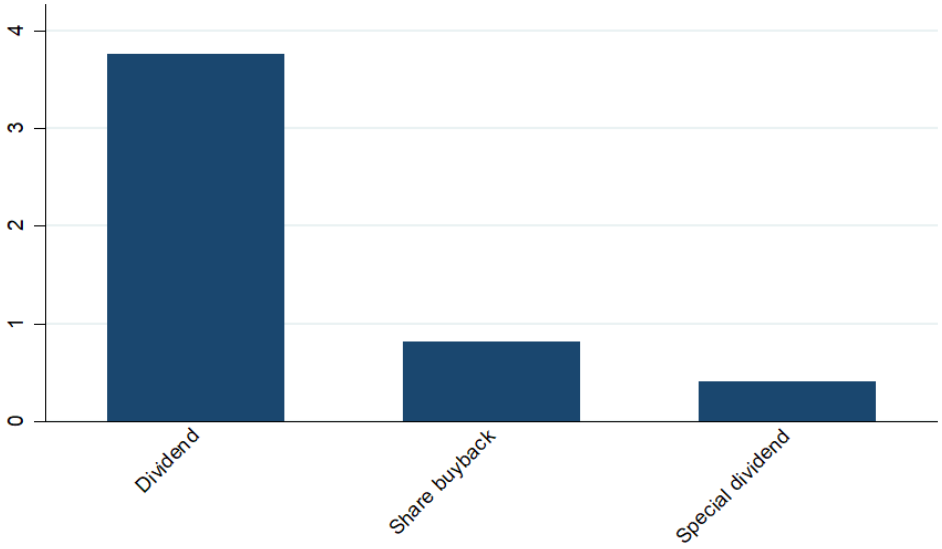
Table A1. Correlation between investment types and motives.

	Tangible investment	Intangible investment	M&A	Investment in R&D	Equity investment	Financial investment	Other
Synergies	0.011 (0.923)	-0.021 (0.848)	0.395*** (0.000)	-0.044 (0.692)	0.055 (0.615)	0.172 (0.115)	-0.078 (0.479)
Market access	0.209 (0.055)	0.077 (0.483)	0.390*** (0.000)	0.083 (0.452)	0.138 (0.207)	0.176 (0.106)	-0.163 (0.135)
Market position	0.251* (0.020)	0.187 (0.086)	0.292*** (0.007)	0.179 (0.101)	0.101 (0.357)	0.025 (0.822)	-0.052 (0.636)
Core competencies	0.018 (0.873)	0.205 (0.060)	0.035 (0.751)	0.032 (0.768)	0.070 (0.522)	0.215* (0.048)	0.130 (0.236)
Restructuring	0.095 (0.386)	0.087 (0.428)	0.061 (0.580)	-0.060 (0.587)	0.046 (0.673)	0.210 (0.054)	-0.024 (0.828)
Efficiency improvement	0.106 (0.336)	0.159 (0.146)	-0.005 (0.966)	0.323** (0.003)	-0.143 (0.191)	0.079 (0.472)	0.053 (0.631)
Diversification	-0.036 (0.742)	-0.011 (0.923)	0.399*** (0.000)	-0.146 (0.183)	0.098 (0.371)	0.238* (0.028)	-0.020 (0.856)
Risk reduction	-0.157 (0.152)	-0.029 (0.790)	-0.103 (0.346)	-0.106 (0.336)	-0.048 (0.663)	0.178 (0.103)	0.145 (0.185)
Sustainable growth	0.170 (0.121)	0.120 (0.272)	-0.109 (0.320)	0.067 (0.541)	0.102 (0.352)	-0.043 (0.696)	0.108 (0.325)
Increasing returns	0.066 (0.551)	0.031 (0.779)	(0.202 (0.063)	-0.045 (0.683)	0.227* (0.037)	0.371*** (0.000)	-0.126 (0.250)
Displacing competitors	0.101 (0.358)	0.226* (0.037)	0.252* (0.020)	0.206 (0.058)	-0.058 (0.598)	0.020 (0.858)	-0.141 (0.199)
Other	0.013 (0.907)	0.076 (0.487)	-0.062 (0.574)	-0.013 (0.903)	-0.128 (0.244)	-0.107 (0.331)	0.796*** (0.000)

Note: Correlation coefficients for investment types and investment motives; P-values in parentheses.

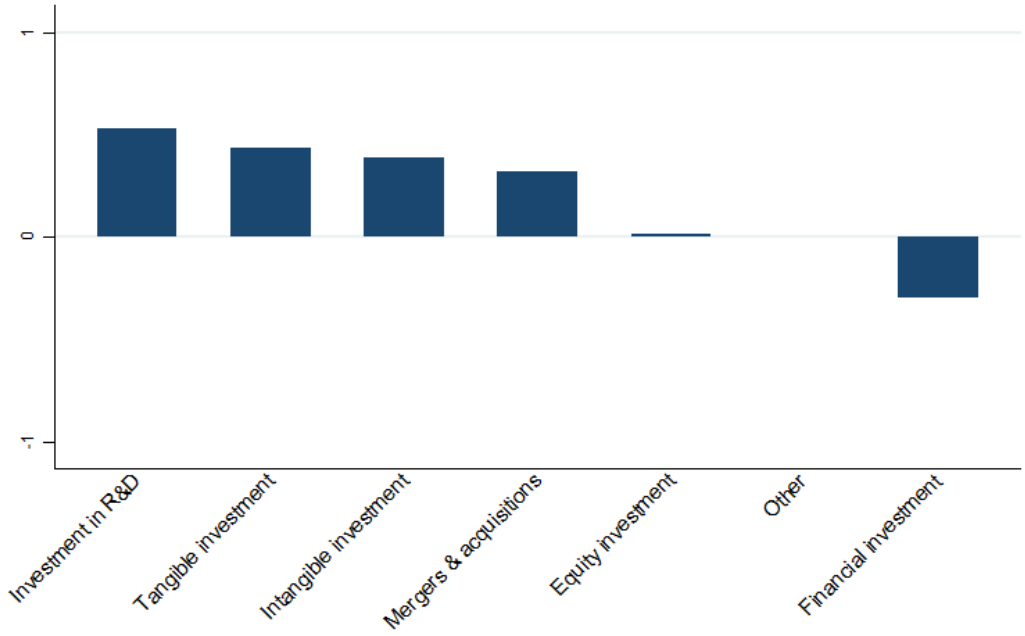
Supplementary Appendix

Figure SA1. Payouts.



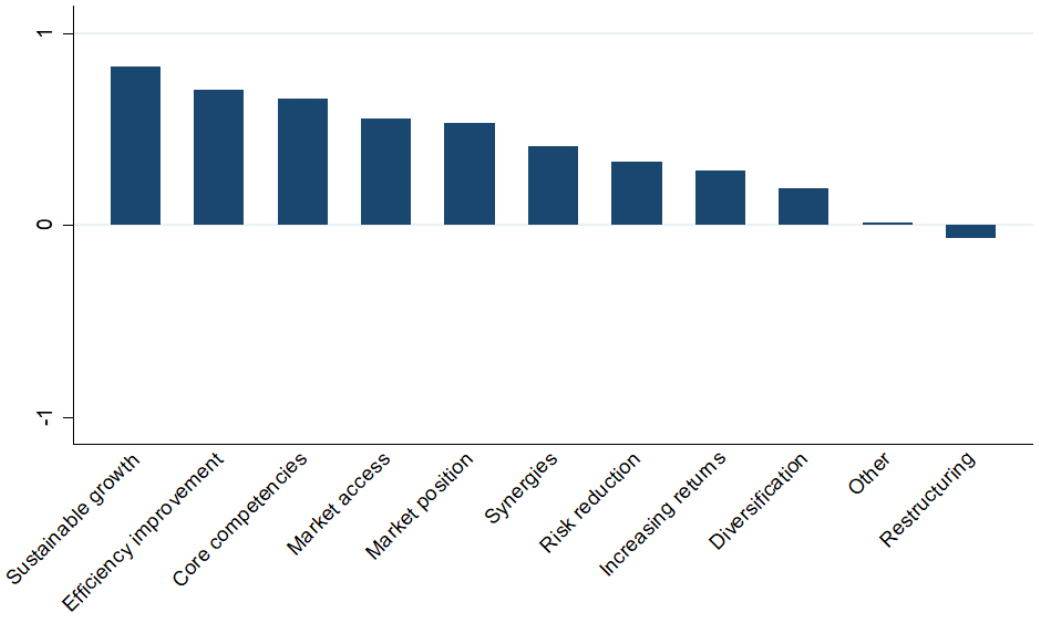
If respondents answered "yes" to the question: Does your company usually distribute profits to shareholders? Weighted average response to the question: In what form are profits distributed in your company? [0 never; 4 always]

Figure SA2. Development of investment types.



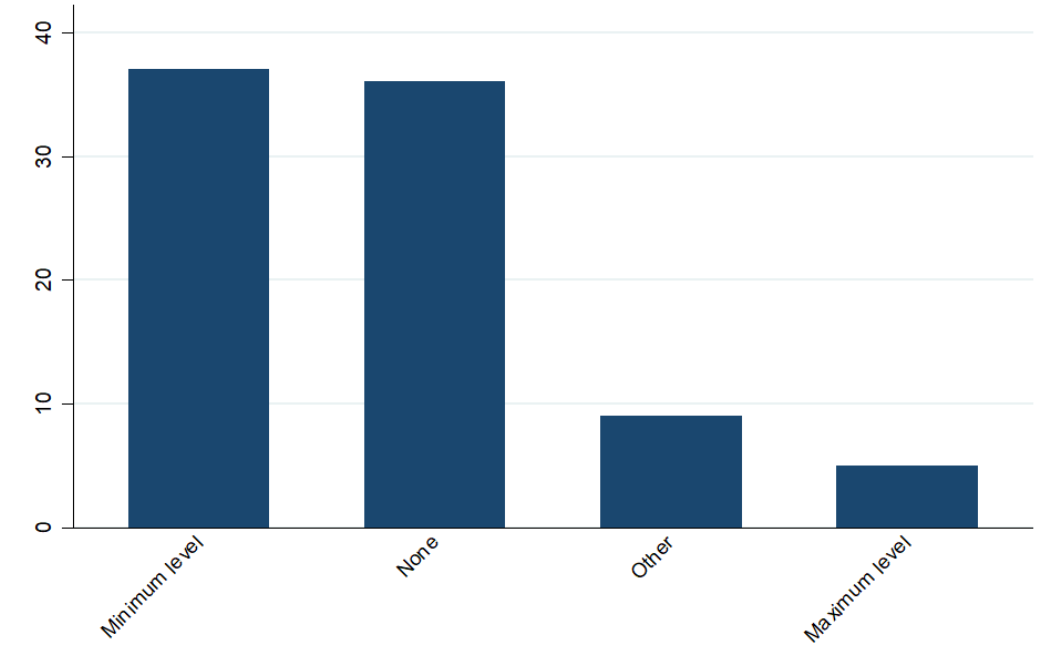
Weighted average response to the question: How has the relevance of the following types of investment evolved for your company in the long-term? [-2 significantly decreased; 2 significantly increased]

Figure SA3. Development of investment motives.



Weighted average response to the question: How has the relevance of the following investment motives evolved for your company in the long-term? [-2 significantly decreased; 2 significantly increased]

Figure SA4. Liquidity requirements.



Number of responses to the question: Does your company have any of the following requirements for holding liquid assets?

Table SA1. Investment financing.

Rank (total score)	Item	Rated 1. (score)	Rated 2. (score)	Rated 3. (score)	Rated 4. (score)	Rated 5. (score)	Rated 6. (score)	Rated 7. (score)	not rated
1. (433)	Retained earnings	34 (238)	18 (108)	9 (45)	6 (24)	3 (9)	4 (8)	1 (1)	10 (0)
2. (351)	Credit line	13 (91)	22 (132)	10 (50)	13 (52)	8 (24)	1 (2)	0 (0)	18 (0)
3. (350)	Bank loan	19 (133)	14 (84)	16 (80)	7 (28)	7 (21)	2 (4)	0 (0)	20 (0)
4. (211)	Promissory notes	5 (35)	7 (42)	15 (75)	8 (32)	7 (21)	3 (6)	0 (0)	40 (0)
5. (204)	Bonds	5 (35)	13 (78)	4 (20)	8 (32)	9 (27)	6 (12)	0 (0)	40 (0)
6. (198)	Shares	7 (49)	6 (36)	8 (40)	6 (24)	4 (12)	18 (36)	1 (1)	35 (0)
7. (40)	Other	2 (14)	2 (12)	2 (10)	0 (0)	0 (0)	1 (2)	2 (2)	76 (0)

Note: Ranking results from weighted responses to the question: How would your company typically finance investment projects? [By clicking on the individual responses, you can put the options relevant to you in a preferred order. Clicking again allows you to adjust the ranking of each answer at any time.]

Table SA2. Interest groups.

Rank (total score)	Item	Rated 1. (score)	Rated 2. (score)	Rated 3. (score)	Not rated
1. (179)	Customers	46 (138)	15 (30)	11 (11)	13 (0)
2. (138)	Shareholders	23 (69)	22 (44)	25 (25)	15 (0)
3. (128)	Employees	9 (27)	35 (70)	31 (31)	0 (0)
4. (23)	Creditors	3 (9)	5 (10)	4 (4)	73 (0)
5. (19)	Suppliers	0 (0)	5 (10)	9 (9)	71 (0)
6. (9)	General public	1 (3)	1 (2)	4 (4)	79 (0)
7. (9)	State	2 (6)	1 (2)	1 (1)	81 (0)
8. (5)	Other	1 (3)	1 (2)	0 (0)	83 (0)

Note: Ranking results from weighted responses to the question: Which interest groups are particularly important for your company? [Please indicate your three most important interest groups by clicking on the respective response options.]

Financial Strategy Survey Codebook

1. Corporate goals

Which goals are important for your company?

v1	Profit maximization
v2	Share price maximization
v3	Dividend maximization
v4	Price leadership
v5	Market expansion
v6	Sales growth
v7	Long-term success
v8	Continuity
v9	Employment security
v10	Quality leadership
v11	Other:
v12	[...]

Response options

0	not important
1	rather not important
2	neutral
3	rather important
4	very important

2. Corporate finance

Which goals are important for your company in corporate finance?

v13	Increasing return on equity
v14	Ensuring liquidity
v15	Securing independence
v16	Reducing risk

Response options

0	not important
1	rather not important
2	neutral
3	rather important
4	very important

3. Strategic financial decisions

In which area do you primarily align your strategic financial decisions?
[By clicking on the individual responses, you can put the options relevant to you in a preferred order. Clicking again allows you to adjust the ranking of each answer at any time.]

v17	Payout policy
v18	Investment policy
v19	Liquidity preservation

v20 Capital structure policy
v21 Other

4. Payouts

Does your company usually distribute profits to shareholders?

v22

Response options

0	no
1	yes

5. Payouts - yes/no

5.1 In what form are profits distributed in your company?

v23 Dividend
v24 Special dividend
v25 Share buyback

Response options

0	never
1	rarely
2	sometimes
3	frequently
4	always

5.2 Why not?

v26 We use profits to make investments.
v27 We use profits to reduce debt.
v28 We use profits to maintain liquidity.
v29 We usually generate no/too little profits.
v30 We use profits to strengthen our equity.
v31 Other

Response options

0	no
1	yes

6. Investment types

Which types of investment are important for your company (measured by the volume of invested capital)?

v32 Tangible investment
v33 Intangible investment
v34 Mergers and acquisitions
v35 Investments in research and development
v36 Long-term equity investment
v37 Long-term financial investment
v38 Other:

v39 […]

Response options

0	not important
1	rather not important
2	neutral
3	rather important
4	very important

7. Development of investment types

How has the relevance of the following types of investment evolved for your company in the long-term?

v40	Tangible investment
v41	Intangible investment
v42	Mergers and acquisitions
v43	Investments in research and development
v44	Long-term equity investment
v45	Long-term financial investment
v46	Other

Response options

0	significantly decreased
1	decreased
2	unchanged
3	increased
4	significantly increased

8. Investment motives

Which motives are important for your company when investing?

v47	Synergies, economies of scale and scope
v48	Access to new sales and procurement markets
v49	Positioning in sales and procurement markets
v50	Strengthening core competencies
v51	Restructuring
v52	Efficiency improvement
v53	Diversification of industry, products, and/or services
v54	Risk reduction
v55	Sustainable growth
v56	Increasing returns
v57	Displacement of competitors
v58	Other:
v59	[…]

Response options

0	not important
1	rather not important

2 neutral
3 rather important
4 very important

9. Development of investment motives

How has the relevance of the following investment motives evolved for your company in the long-term?

v60 Synergies, economies of scale and scope
v61 Access to new sales and procurement markets
v62 Positioning in sales and procurement markets
v63 Risk reduction
v64 Sustainable growth
v65 Increasing returns
v66 Strengthening core competencies
v67 Restructuring
v68 Efficiency improvement
v69 Diversification of industry, products, and/or services
v70 Others

Response options

0 significantly decreased
1 decreased
2 unchanged
3 increased
4 significantly increased

10. Liquidity motives

Which motives are important for your company when holding liquid assets?

v71 Hedging against risks
v72 Independence from external financing
v73 Operational capability in crisis situations
v74 Liquidity for day-to-day operations
v75 Income from short-term financial investments
v76 Short-term seizing of investment opportunities
v77 Other:
v78 […]

Response options

0 not important
1 rather not important
2 neutral
3 rather important
4 very important

11. Liquidity requirements

Does your company have any of the following requirements for holding liquid assets?

v79	Maximum level
v80	Minimum level
v81	None
v82	Other:
v83	[…]

Response options

0	no, not selected
1	yes, selected

12. Investment financing

How would your company typically finance investment projects?
[By clicking on the individual responses, you can put the options relevant to you in a preferred order. Clicking again allows you to adjust the ranking of each answer at any time.]

v84	Credit line
v85	Retained earnings
v86	Shares
v87	Promissory notes
v88	Bonds
v89	Bank loan
v90	Other

13. Interest groups

Which interest groups are particularly important for your company?
[Please indicate your three most important interest groups by clicking on the respective response options.]

v91	Employees
v92	Customers
v93	Shareholders
v94	Suppliers
v95	Creditors
v96	General public
v97	State
v98	Other

14. Family firms

Would you describe your company as a family firm?

v99

Response options

0	no
1	yes

15. Ownership structure
Does your company have a controlling shareholder?

v100

Response options

0	no
1	yes

16. Interviewee position
What is your role in your company?

v101

Response options

1	Chief Financial Officer
2	Chief Executive Officer
3	Senior role in the finance department
4	Employee in the finance department

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