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Article

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by Ch. Piette and J. Tielens

National Bank OF BELGIUM
Eurosystem

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Ch. Piette
J. Tielens*

Introduction

Life can only be understood backwards; but it must be lived forwards.
– Søren Kierkegaard, 1843 (Danish philosopher)

Interest rates affect a myriad of decision-makers in the economy. They matter, for example, to borrowers looking to start or expand a business, to lenders balancing the risks and rewards of extending credit, to savers deciding to invest in financial assets, and to policymakers gauging the state of the economy. In recent years, nominal interest rates, both short- and long-term, have dropped to historically low levels in all advanced economies. This was largely due to a series of standard and non-standard measures adopted by central banks in the aftermath of the 2008-09 Global Financial Crisis (GFC). Importantly, however, long before this period of accommodative monetary policy, interest rates had been on a downward trajectory over much of the past thirty years (Borio *et al.*, 2017).

Russia's invasion of Ukraine in 2022 marked a significant turning point. In July 2022, as the inflation rate in the euro area soared well above its 2 % target, the Governing Council of the European Central Bank (ECB) decided to raise its key interest rates for the first time since 2011, and further increases took place in subsequent months. After spiralling downwards for three decades, interest rates bottomed out and were back on the rise. The clear and abrupt ending of the "low-for-long" period invites us to take the advice of Søren Kierkegaard to heart. More precisely, taking a backward-looking perspective, this article reflects on the historical impact of declining interest rates on the investment, indebtedness, profitability, cash position and dividend policy of Belgian non-financial firms over a period spanning 1985 to 2022. In addition, a forward-looking component of the article offers a concise synthesis of lessons that can be learned for the future.

This article covers an unusually large time span. Typically, analyses that shed light on long-run macroeconomic trends are supported by macroeconomic data, as is the case here. However, we also unpack the aggregate data through the lens of microdata. More precisely, our analysis draws on a rich and extensive dataset of individual Belgian non-financial firms that spans almost four decades. This allows us to assess whether long term trends are driven by individual firms or, alternatively, are broad-based in nature. Moreover, it helps us to uncover dimensions of heterogeneity and build a bottom-up view of aggregate trends in the aforementioned variables, including how they have developed in tandem with declining interest rates.

* This article has benefited from comments and suggestions by Jef Boeckx, Cédric Duprez, Marie-Ange Levan, Ivo Maes and Joris Wauters.

The remainder of this article is structured as follows. Section 1 presents a concise history of central bank and commercial bank interest rates in Belgium. It reveals an apparent disconnect between the dynamics in economy-wide corporate investment, cash holdings and indebtedness, on the one hand, and the decline in interest rates, on the other hand. Section 2 introduces our microdata and explains how it serves to shed light on these apparent paradoxes. The third section focuses on the secular (or long-term) decline in corporate investment over recent decades and brings in the concept of the investment demand curve, which posits a negative relationship between the degree of investment and the interest rate. We highlight that downward shifts in this curve have driven down corporate investment rates and, at the same time, have dwarfed the impact of low rates on investment. The absence of significant interest rate effects on investment, however, contrasts with the positive effect on firms' financial health. Section 4 then elaborates on the implications of lower interest rates for corporate profitability, dividend policy and cash management; by and large, we document that firms have used rising profitability to strengthen their equity positions. As discussed in Section 5, stronger equity positions have subsequently supported firms' cash positions and allowed them to scale down their indebtedness. The final section contains our conclusion and presents some policy implications.

1. A three-decade decline in interest rates

Russia's invasion of Ukraine in 2022 marked a significant turning point for the global economy. In response to this aggressive military action, the European Union and its allies imposed a new package of sanctions on Russia which consisted essentially of restrictions on commodity imports, adding to those already introduced in the wake of the 2014 annexation of Crimea. Russia subsequently retaliated through reductions in its pipeline gas exports to Europe. While businesses were still feeling the effects of persistent supply chain disruptions in the aftermath of the COVID-19 pandemic, these dramatic developments in commodity and energy markets inevitably led to a surge in production costs and, ultimately, consumer prices.

In July 2022, as the inflation rate in the euro area soared well above its 2 % target, the Governing Council of the ECB decided to raise its key interest rates for the first time since 2011, with further increases taking place over the following months. At the end of September 2023, the interest rates on the ECB's main refinancing operations, i.e. the weekly transactions whereby euro area banks can borrow funds against collateral, reached 4.50 %. The rates on the marginal lending facility and the deposit facility were set at 4.75 % and 4.00 %, respectively. These successive rises are a radical shift from the "low-for-long" policy adopted in the wake of the GFC of 2007-2008 and the euro area sovereign debt crisis of 2010-2012.

It was indeed the repercussions of the financial turmoil on the real economy and the downward revision of inflation forecasts that prompted the ECB to significantly lower its key policy rates from mid-2008 to mid-2009. Additional cuts were subsequently announced, although a short-lived hike occurred in July 2011. To exert stronger downward pressure on lending rates, a further step was taken in June 2014 when the deposit facility rate entered negative territory, thereby creating a custody fee on banks' deposits with the Eurosystem. The idea was to encourage banks to offload their excess liquidity and stimulate the volume of interbank transactions (Kasongo Kashama, 2014). This measure was accompanied by forward guidance guaranteeing that key rates would remain unchanged for an extended period. Furthermore, the reduction in interest rates on the main refinancing operations was complemented by a series of targeted longer-term refinancing operations (TLTROs). Within that framework, banks could obtain long-term funding at a lower interest rate, determined based on their lending volume to non-financial corporations and households (excluding loans for house purchase).

In addition, when it became clear that interest rates were approaching their lower bound, the ECB introduced a series of asset purchase programmes (APPs). The assets concerned included covered bonds, asset-backed securities, corporate bonds and public sector debt securities (the latter making up the bulk of the purchases). The ECB hereby intended to drive up the prices of these assets and push their yields down as a result. In turn,

the supply of funds would then shift towards bank lending, exerting additional pressure on interest rates. The phasing out of the APPs began in 2022, against the backdrop of soaring inflation, first by a gradual reduction in net purchases, then by a decrease in the reinvestment of redemptions. As of July 2023, redemption amounts were no longer being reinvested.

Overall, except for temporary hikes prompted by short-lived inflationary pressures, the Belgian economy benefited from increasingly lower interest rates between 1999 – the year the single currency was introduced – and 2022. It should be noted, however, that this trend in fact began in the 1990s, before the establishment of the Eurosystem. As the left-hand chart in Figure 1 illustrates, the central rate of the National Bank of Belgium (NBB),[1] which was then its main policy rate, fell from a peak of 9.65 % at the end of September 1993 to 3.00 % four years later. That peak was reached at the height of the European Exchange Rate Mechanism (ERM) crisis.

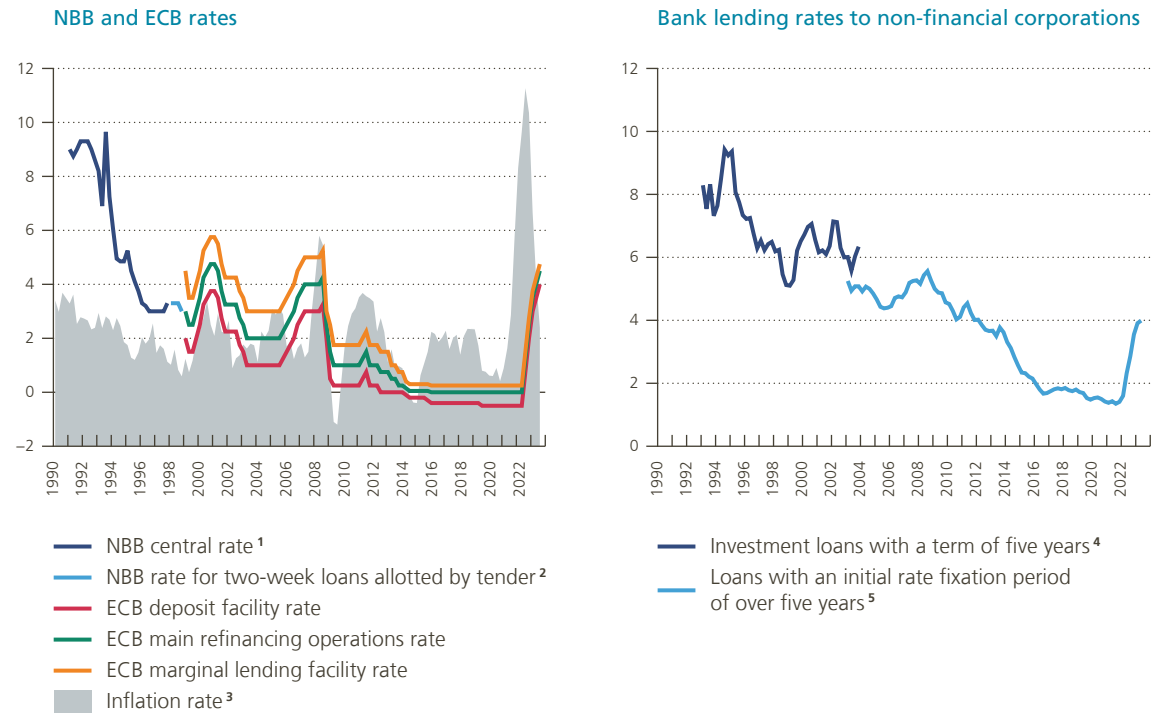
Within the ERM, various European currencies, including the Belgian franc, were pegged to one other, which raised a competitiveness issue for countries with higher inflation rates. Moreover, further macroeconomic imbalances appeared after German reunification, when subsidies were extended to the former East Germany

1 The NBB central rate was the rate applicable from 1991 to 1997 to primary dealers on current account advances received from, and deposits with, the Rediscount and Guarantee Institute. Jeanfils *et al.* (1997) provide a description of the mechanism of daily closing advances and deposits that was implemented on the money market at that time.

Figure 1

Policy and bank interest rates

(end-of-quarter data, %)



Sources: ECB, NBB.

1 The NBB central rate was the rate applicable from 1991 to 1997 to primary dealers on current account advances received from, and deposits with, the Rediscount and Guarantee Institute.

2 The NBB adopted the monetary policy instruments of the European System of Central Banks during the transition phase to the euro.

3 Calculated based on the national consumer price index.

4 Weighted averages calculated from the results of the Retail Interest Rates (RIR) survey.

5 Weighted averages calculated from the results of the MFI Interest Rates (MIR) survey.

without being financed by additional taxation. This caused strong inflationary pressures that led the Bundesbank to raise its rates and, since the Deutsche Mark was the *de facto* anchor of the ERM, other participating countries had to maintain high interest rates to compensate investors for the risk of devaluation with respect to the German currency. These imbalances made the ERM vulnerable to speculative attacks which effectively began in September 1992. The turmoil eased the following year thanks to a change in the ERM arrangement, whereby the fluctuation bands were broadened.[2]

The end of the ERM crisis thereby initiated a downward trend in interest rates which was to last almost 30 years, notwithstanding some short periods of rate hiking. The declining trend in banks' financing costs was naturally echoed in their lending rates. The survey data depicted in the right-hand chart in Figure 1 indeed suggest that nominal long-term interest rates on loans to non-financial corporations[3] (NFCs) fell almost sixfold between the end of the third quarter of 1993 and the end of 2021.

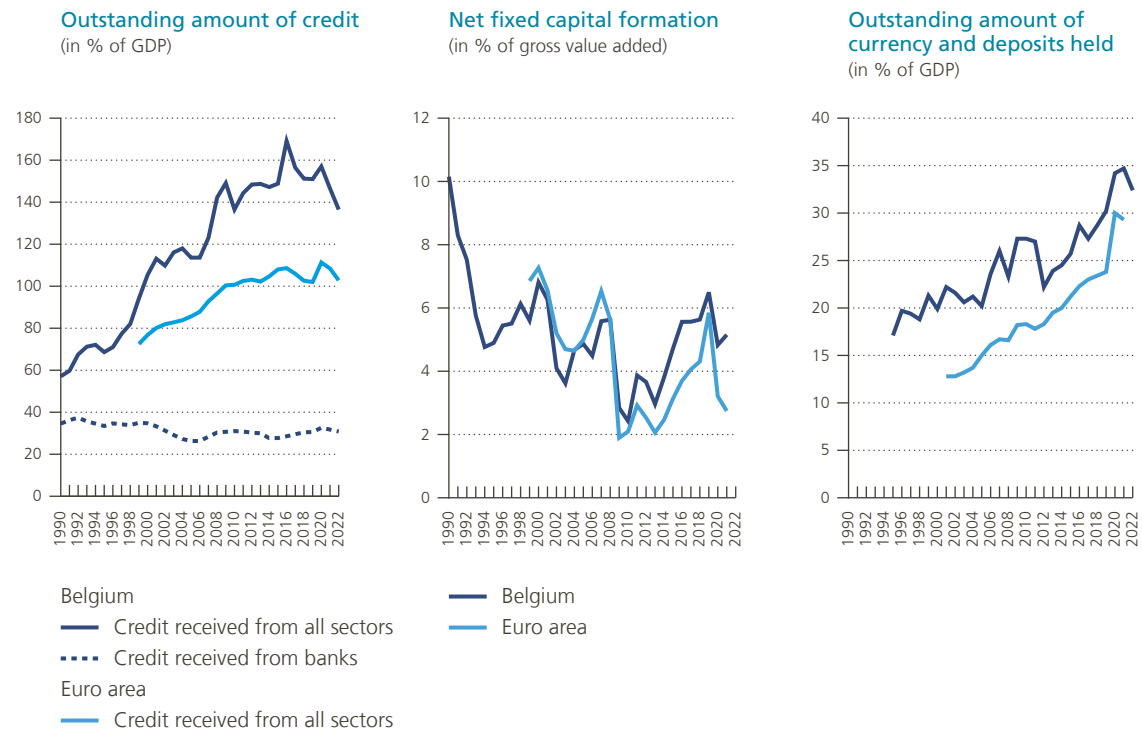
Yet the long decline in NFCs' borrowing costs was not associated with a significant change in their use of bank credit, at least not at the macroeconomic level. While the volume of corporate debt increased significantly from the 1990s onwards, this development was mainly attributable to intragroup lending. Developments in bank lending, by contrast, were not as dynamic. Indeed, when expressed as a percentage of gross domestic product (GDP), corporate loans in fact declined from 37.4 % in 1992 to 30.8 % in 2022 (see the left-hand chart in Figure 2).

2 More extensive accounts of the ERM crisis can be found in Maes (2002) and Corsetti (2023).

3 In the context of this article, the "non-financial corporations" corresponds to the definition given by the European System of Accounts. This category consists of "institutional units which are independent legal entities and market producers, and whose principal activity is the production of goods and non-financial services" (Eurostat, 2013).

Figure 2

Non-financial corporations' borrowing, investment and cash holdings



Sources: BIS, Eurostat, NAI, NBB.

Likewise, NFCs did not appear to intensify their investment efforts: their net fixed capital formation, i.e. the macroeconomic aggregate that measures their real investment beyond the replacement of depreciated capital, was higher overall in the 1990s (see the middle chart in Figure 2). Corporate investment seems more sensitive in fact to the business cycle than to the level of interest rates. In Belgium, as in the euro area at large, corporate investment reached its lowest level in the aftermath of the GFC and remained weak during the sovereign debt crisis of the early 2010s. By contrast, NFCs – both in Belgium and in the euro area – have considerably expanded their cash holdings in the form of currency and deposits over the past thirty years. In the remainder of the article, we show that these *a priori* counterintuitive patterns in interest rates, borrowing, investment and cash holdings are in fact interconnected.

2. Macro phenomena through the lens of microdata

This section presents key details of the micro dataset that underlies our analysis and includes important disclaimers which apply throughout the remainder of the article.

The starting point for our analysis is the extensive collection of annual accounts filed with the Central Balance Sheet Office (CBSO). In Belgium, most companies in which the liability of the shareholders or partners is limited to their contributions are required to file their annual accounts with the CBSO. In this way, the firms included in our analysis represent the bulk of economic activity in the country over the observation period, as well as the entire size distribution of Belgian firms. However, for purposes of this study, we limit our focus to entities active in the "non-financial corporations" institutional sector: this results in the exclusion of self-employed entities and – to a lesser extent – financial corporations and governmental agencies.

By law, firms are required to submit their annual accounts to the CBSO thirty days after their approval by the general meeting and, in any case, no later than seven months from the close of the financial year. This allowed us to include annual accounts for financial year 2022 in our analysis. While annual accounts as from 1978 are available in electronic format, we disregarded filings before 1985 due to the presence of structural breaks in the accounting templates. Modifications to accounting templates post-1985 have typically been incremental, and filings have been manually harmonised to ensure consistency of interpretation over time. Nonetheless, the time span covered by the data, i.e. the period 1985-2022, remains long enough to put the exceptional episode of monetary policy into historical perspective.[4]

As for the variables included in our dataset, Belgian firms were required, until 2015, to submit annual accounts using one of two templates: a full template or an abridged version. Both include extensive information on the assets and liabilities structure of the balance sheet, as well as on the profit and loss statement (P&L). To ease the reporting burden, the abridged version was designed for firms below a particular size threshold and covers a subset (or aggregates) of the information included in the full template. In 2016, a micro template was introduced and made available to a subset of the smallest firms that previously submitted the abridged template.[5] Unless stated otherwise, we focus on variables that are available in all three templates (full, abridged and micro). At times, with an eye towards a richer breakdown of the data, we focus specifically on firms that filed a full template.

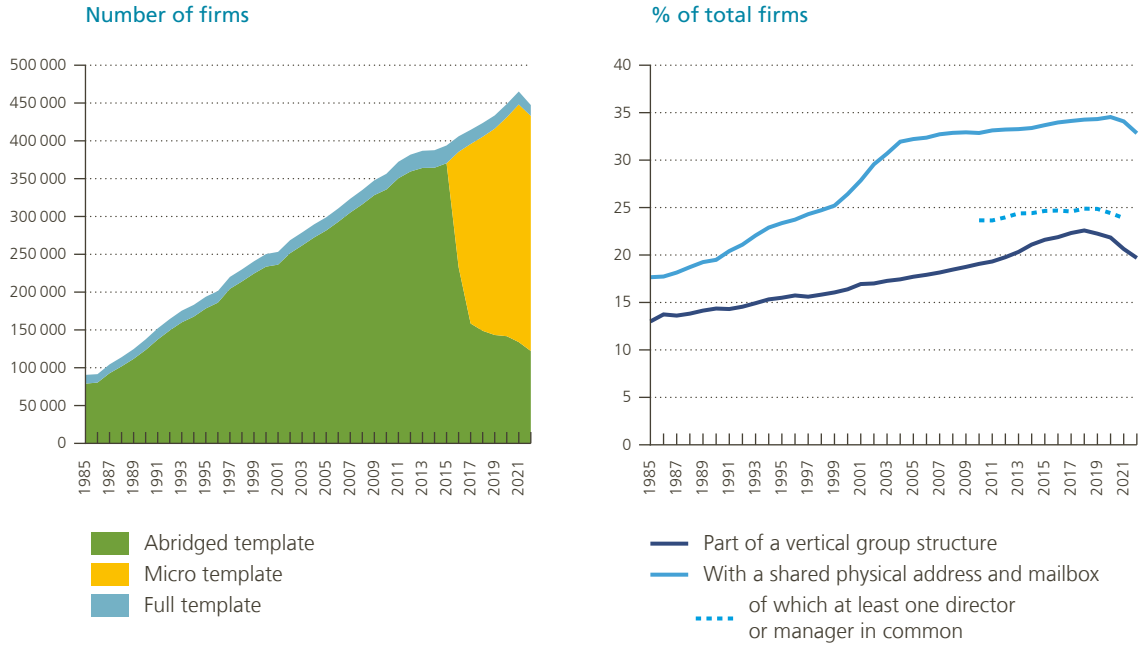
4 Our data effort fits into an emerging literature that constructs long time series of firm-level variables to discuss long-run trends, e.g. in industry concentration (Kwon *et al.*, 2023), market power (De Loecker *et al.*, 2018), labour share (De Loecker *et al.*, 2022), etc.

5 In addition, since 2020, the micro, abridged and full templates have been subdivided further, into those for firms with or without share capital.

The left-hand chart in Figure 3 plots the number of annual accounts available per year and offers a breakdown by type of template. It evidences the wide coverage of the database of Belgian annual accounts: over 450 000 entities filed annual accounts in 2021, compared to only 90 000 in 1985. Moreover, the large number of abridged and micro format accounts illustrates the comprehensive nature of the sample.

Figure 3

Number of firms included in the analysis and group membership



Source: NBB.

An important caveat to bear in mind concerns the unit of observation. In keeping with the literature, our analysis relies on *unconsolidated* annual accounts, as opposed to *consolidated* accounts. The former quantify the assets, liabilities and P&L of individual firms, whereas the latter offer a similar snapshot of a corporate group (i.e. a composite of all individual entities that fall within the consolidation bounds of the group). Unfortunately, intra-group interactions – e.g. intra-group lending, leasing, trade, etc. – make it difficult to interpret unconsolidated accounts (which do not net out such interactions). For example, using unconsolidated statements to distinguish between bank borrowers and non-bank borrowers is imperfect if internal capital markets channel funds from the single bank borrowing entity in the group to its internal group peers. Unfortunately, an analysis based on consolidated annual accounts is not a panacea either. Firstly, the consolidation criteria are met by only a small number of groups.[6] Secondly, the accounting template used for consolidated accounts has not been standardised, which makes it challenging to produce uniform metrics across firms.

To gauge the incidence of group membership, it should be noted that two types of corporate groups exist. In *vertical groups*, shares of one legal entity are held by another, creating a (potentially complex) nexus of mother-daughter relationships (reflected through asset holdings in the corporate balance sheets). Detailed information on (a subset of) these holdings can be partially identified from the addendum to the unconsolidated annual accounts (see Heuse & Vivet (2013) for details).[7] The right-hand chart in Figure 3 reveals that, in recent years, a little over 20 % of Belgian firms were a member of a vertical group. In *horizontal groups*, control over various

6 See CBN/CNC Opinion 2016/3 – Assessment of the size criteria in Arts 15 and 15/1 of the Code of Companies and Associations.
7 We complement this information with the NBB survey on foreign direct investment.

firms is exercised by a (number of overlapping) natural person(s). In the absence of reporting requirements for the latter, joint control by natural persons of legally disparate entities is tedious to quantify.[8] To shed some light on its incidence, Figure 3 plots the proportion of firms that share a physical address and mailbox. Approximately one out of three firms shares a physical address with at least one other firm. It is reasonable to suspect that these firms, while legally separate, do not operate in economic isolation from one another. This conjecture is further corroborated by a text-scraping exercise which reveals that firms with a common physical address typically also share (at least one) director or manager (the names of these natural persons are reported in the addendum to the annual accounts).[9] Taken together, the level of intertwining relationships between firms is significant and has been increasing steadily since 1985.

Finally, we allow ourselves a degree of linguistic licence and use the words "(non-financial) corporation", "company", "firm" and "business" interchangeably when we refer to the entities in our sample. As a further point of note, at the time of writing, the annual accounts data for financial year 2022 were not fully complete: data points for 2022 are therefore tentative and subject to revision.

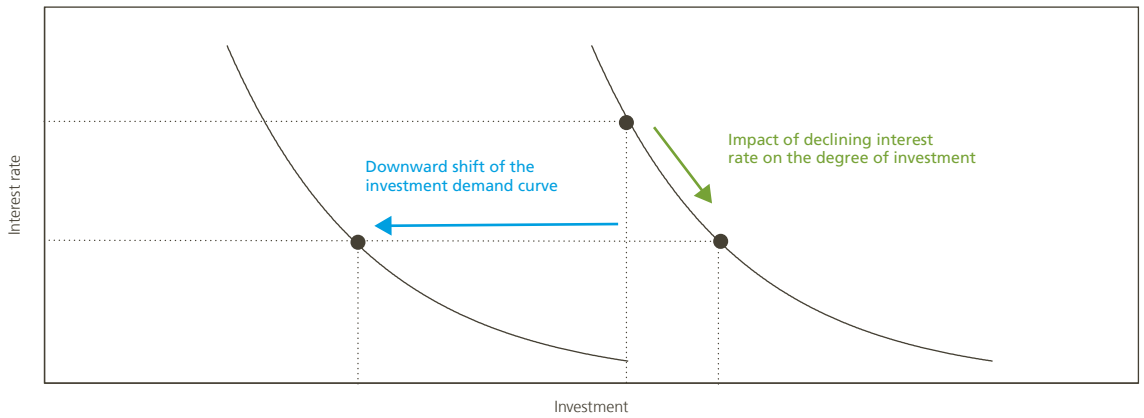
3. A secular decline in corporate investment rates

Interest rates are a critical determinant of corporate investment expenditure. Indeed, a fundamental tenet of investment theory is that lower interest rates lead, *ceteris paribus*, to an increase in business investment by making it cheaper and easier for businesses to borrow funds. This intuition is formalised by the *investment demand curve* – a curve that posits a negative relationship between the degree of investment and the interest rate (Figure 4). Perhaps the most important characteristic of the investment demand curve is not its negative slope, but rather the fact that it often shifts significantly in response to various structural and cyclical macroeconomic developments. In effect, the incidence of large swings in the investment demand curve is one of the reasons why aggregate investment is a notoriously difficult macroeconomic variable to model and forecast (ECB, 2018).

8 Recently, a UBO register was introduced in which all ultimate beneficial owners or beneficial owners of a company or other legal entity are registered.
9 We use a fuzzy string matching algorithm on last names to trace overlapping directors and managers.

Figure 4

The investment demand curve



Source: NBB.

Downward shifts in the investment demand curve imply that investment rates can drop in the face of persistently declining interest rates. Consistent with this intuition and with evidence found elsewhere,[10] this section revisits firm-level/economy-wide investment rates from 1985-2022 and argues that interest rates applicable to NFCs – and, more broadly, bank lending standards – have not been the main driver of the decline in corporate investment. We highlight alternative causes of waning investment rates, all of which point towards (structural and cyclical) downward shifts in the investment demand curve.

3.1 Degree of investment in tangible fixed assets

Tangible fixed assets – e.g. land, buildings, machinery, furniture and fixtures, etc. – are physical in nature; they typically represent a substantial share of the corporate balance sheet and have a long-term presence in firms' day-to-day operations. The left-hand chart in Figure 5 plots the globalised degree of investment[11] in this asset

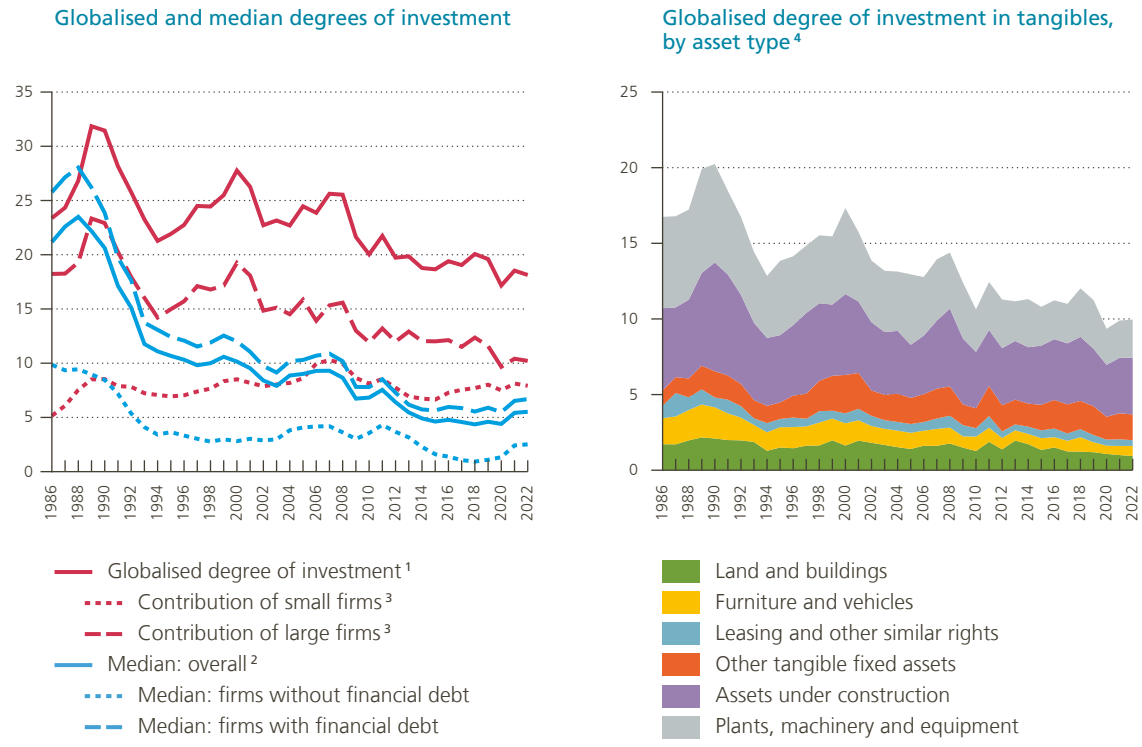
10 See, e.g. Banerjee *et al.* (2015) and Durante *et al.* (2022).

11 Following Vivet (2014), the globalised degree of investment is quantified by aggregate net purchases of tangible assets at time *t* divided by the aggregate net stock of tangibles at *t*-1. Both flows and stocks are expressed in net terms, i.e. after depreciation and revaluations. Calculations are limited to firms whose financial year spans twelve months.

Figure 5

Degree of investment: tangible fixed assets

(%)



Source: NBB.

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2 Following Vivet (2014), the firm-level degree of investment is quantified by firm-level net purchases of tangible assets at time *t* divided by the firm-level net stock of tangibles at *t*-1. Both flows and stocks are expressed in net terms, i.e. after depreciation and revaluations. Calculations are limited to firms whose financial year spans twelve months.

3 Large firms are those that file a full template for their annual accounts. Small firms are those that file an abridged or micro template.

4 Only for large firms.

class (solid red line). Although this is conceptually different from the net fixed capital formation as discussed in Section 1, both relate to the rate at which the economy expands the productive capital stock. Importantly, the two series share a broadly similar pattern: firstly, elevated levels up to the early 1990s followed by lower levels thereafter (especially following the GFC) and, secondly, sizeable fluctuations associated with the business cycle. The degree of investment by the median firm [12] (solid blue line) also exhibits this pattern, implying that the long-term trend is broad-based and not driven by a small number of large multinationals.

The right-hand chart in Figure 5 plots a decomposition of the economy-wide degree of investment, broken down according to the contribution of each specific type of tangible asset. A declining trend is seen across all types of tangible assets. Historically, including during the low interest rate period, investment has been driven mainly by "Plants, machinery and equipment" as well as "Assets under construction". Conversely, "Land and buildings", while typically a sizeable entry on the corporate balance sheet, contributed only marginally to the economy-wide investment rate.

Declining interest rates were not netted out by simultaneously tighter lending standards

Firms investing in tangible assets often rely on financial debt (see also Section 4), in particular loans from credit institutions. [13] As such, declining interest rates could have been offset by other coinciding trends in credit conditions (e.g. tighter collateral requirements, restrictive debt covenants, etc.). This explanation, however, is not borne out by the microdata: the median firm without financial debt saw a downward trend similar to that for firms with financial debt. Moreover, the investment rate differential between these two categories of firms narrowed over time, emphasising that tighter lending standards, if any, did not play a first-order role in driving investment trends (especially during the recent period of accommodative monetary policy). In addition, the left-hand chart in Figure 5 illustrates the contribution of large and small firms to the economy-wide degree of investment. It shows that the downward trend in the economy-wide investment rate was driven mainly by a decline in the contribution of large firms, a group typically less impacted by tight lending standards. Overall, Figure 5 argues against the narrative that other credit supply restrictions netted out the impact of declining interest rates. This suggests a role for downward shifts in the investment demand curve.

Temporary and persistent downward shifts in the investment demand curve

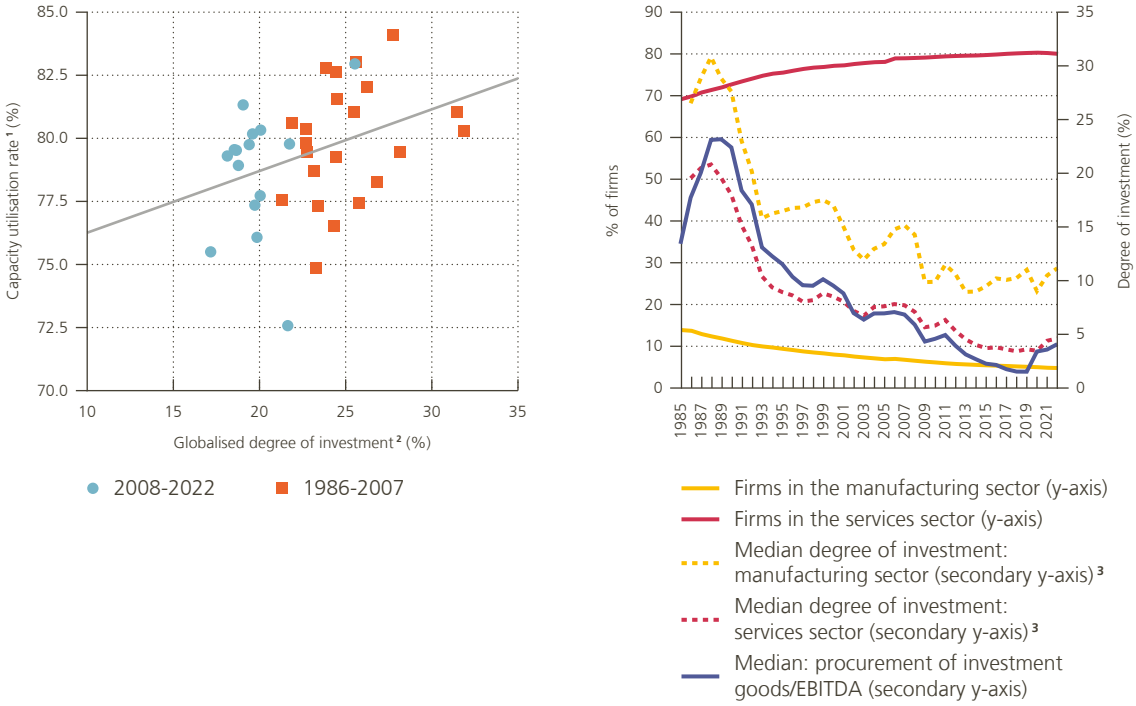
Various narratives are put forward in the literature supporting both temporary and persistent downward shifts in the investment demand function. When looking specifically at the recent period of accommodative monetary policy, both lower growth expectations and elevated levels of uncertainty about the future state of the economy are often cited as key drivers of lower investment rates in Europe in the aftermath of the GFC (Banerjee *et al.*, 2015), despite lenient financial conditions. In addition, temporary slack in the capacity utilisation rate dampened investment incentives (Durante *et al.*, 2022). The left-hand chart in Figure 6 corroborates this negative relationship and reveals that since the GFC, historically low investment rates have also been associated with (historically) low capacity utilisation rates.

12 Following Vivet (2014), the firm-level degree of investment is quantified by firm-level net purchases of tangible assets at time *t* divided by the firm-level net stock of tangibles at *t*-1. Both flows and stocks are expressed in net terms, i.e. after depreciation and revaluations. Calculations are limited to firms whose financial year spans twelve months.

13 In addition to loans received from credit institutions, the term "financial debt" also covers other types of (subordinated or unsubordinated) loans and corporate bonds as well as lease agreements.

Figure 6

Capacity utilisation rate [1] and degree of investment by sector



Source: NBB.

1 The capacity utilisation rate quantifies the average share of capacity used, as reported by firms in a quarterly survey on production capacity.

2 Following Vivet (2014), the globalised degree of investment is quantified by aggregate net purchases of tangible assets at time *t* divided by the aggregate net stock of tangibles at *t*-1. Both flows and stocks are expressed in net terms, i.e. after depreciation and revaluations. Calculations are limited to firms whose financial year spans twelve months.

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Aside from the low interest rate environment, other secular trends help to explain the historical decline in corporate investment rates. [14] For example, a downward investment trend has often been associated with a decline in the manufacturing sector and a contemporaneous rise in the – less capital intensive – services sector. The right-hand chart in Figure 6 reveals this narrative to be partly borne out by the data: a growing services sector which is effectively associated with a lower overall investment rate. Nonetheless, the declining investment rate is also apparent in the services sector itself. Moreover, domestic investment activities in advanced economies are often assumed to have partly shifted to other parts of the world as global value chains have developed and production has moved offshore. However, empirical research has not been able to establish whether foreign investment is replacing domestic investment activity (substitution) or supplementing it (complementarity). An additional factor is that demographic trends also affect investment demand, as lower population growth implies that less investment is required to maintain a given capital-to-labour ratio (Ferrero *et al.*, 2017). Lastly, the secular decline in corporate investment rates also fits in a broader macroeconomic narrative involving the decline in r^* (see Box 1).

14 See Butzen *et al.* (2016) for a detailed overview.

BOX 1

*r** and the secular decline in demand for loanable funds

The neutral rate of interest (also called the long-run equilibrium interest rate, the natural rate, or *r** (pronounced as *r-star*)) is the interest rate that would prevail if the economy was at potential output and inflation at the central bank's target (NBB, 2019). In other words, it is the rate at which monetary policy is neither contractionary nor expansionary.

The neutral rate is a guidepost for monetary policy. The art of monetary policy consists in stabilising inflation around its target via the real interest rate and the latter's influence on spending and economic activity. Thus, if inflation is persistently expected to fall short of the central bank's target, this is often a sign that the economy is operating below potential. The central bank then tries to stimulate activity by cutting the real interest rate below *r**. Conversely, when inflation is persistently expected to exceed its target, the central bank restrains activity by raising the real interest rate above *r**. It should be noted that central banks can only exert direct influence on nominal interest rates. However, real interest rates follow the movements of nominal rates if the inflation expectations of economic agents are sufficiently stable ("firmly anchored" in the jargon of central bankers).

While central banks may claim to be able to exert some influence on nominal and real interest rates, the same cannot be said for *r**, which reflects aspects of the economic situation over which monetary policy has no control. More precisely, the neutral rate of interest is determined by the supply of and demand for savings (i.e. the point at which the savings supply and investment demand curves intersect). For example, in order for firms to be able to make new investments, they need households and other savers to supply the required capital. Therefore, total investment in the economy must be equal to the pool of available capital or savings. For that to happen, interest rates need to be high enough to convince savers to save and low enough to incentivise firms to borrow. The interest rate that does this in the long run is the neutral rate of interest.

A large body of empirical work has documented a secular decline in *r** in recent decades. This downward trend is often associated with downward shifts in the investment demand curve and resulting declines in actual investment rates.

Measurement concerns exert bias on the median and globalised investment rates

The downward trend in median and/or globalised investment rates also has mechanical origins. For example, a rise in horizontal and vertical corporate groups, as highlighted in Section 2, has a downward bias on the median investment rate. More specifically, the median investment rate is biased if multiple, legally distinct but economically entwined firms share tangible assets (e.g. one vehicle for the common chief executive offer, a shared building, etc.) that feature in the annual accounts of only a single entity in the group. In addition, the increasing popularity of operational leasing drives down median firm-level investments. Operational leasing – an agreement between a lessor (the legal owner of a tangible asset) and a lessee (the firm with operating control over the asset) – causes investment in tangible fixed assets to shift from (many) lessees to (a few) lessors. Such outsourcing of investment not only drives down the median investment rate, but it also dampens the globalised investment rate of NFCs

to the extent the lessors are not part of the same institutional sector. Furthermore, increasing depreciation rates – which stem from a changing composition of capital (e.g. a shift towards more short-lived capital such as IT infrastructure) – affects the investment rate (OECD, 2015). Alternative definitions of the investment rate that neutralise the impact of depreciation rates – e.g. procurement of new tangible assets over earnings before interest, taxes, depreciation, and amortisation (EBITDA) or value added[15] – feature a similar downward trend, ruling out depreciation as a major driver of declining investment rates.

3.2 Investment in financial fixed assets

Aside from tangibles, firms may also invest in "financial fixed assets". Importantly, such assets are not "held for trading", i.e. acquired principally for the purpose of selling or as part of a portfolio designed for short-term profit-taking. In fact, a defining feature of financial fixed assets is the long-term nature of the investment. In practice, this asset class typically encompasses stakes in other existing/new firms. Such stakes come in three forms, depending upon the level of economic integration between the two entities: (a) affiliated companies, (b) other companies linked by participating interests, and (c) other financial fixed assets. The economic rationale for holding long-term financial investments is manifold: to hold a strategic stake in a competitor or important supplier/buyer; to ringfence risky activity; to segregate for tax/accounting purposes, etc. Often, these financial investments embody a type of extensive margin growth (e.g. joint ventures, spin-offs, etc.) and are therefore potentially affected by the interest rate environment.

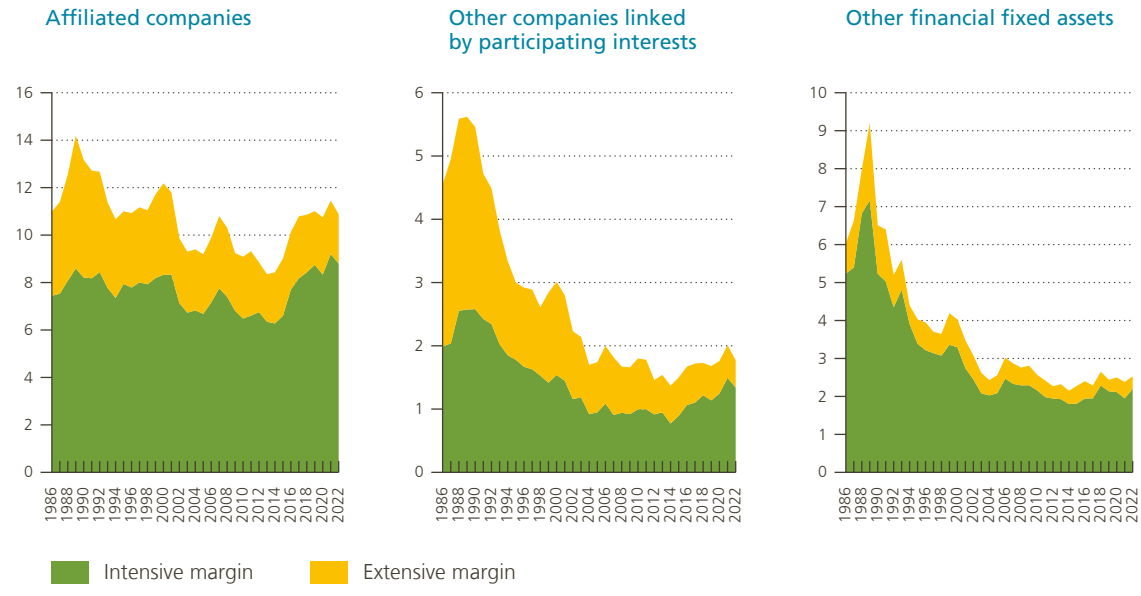
We assess here the share of firms that invest in additional financial assets in a particular year. A focus on incremental purchases sidesteps issues related to year-on-year revaluations of incumbent financial fixed assets (which are potentially driven by the interest rate environment). Figure 7 decomposes financial investments into

15 Both the numerator and the denominator are neutral with respect to the depreciation rate which thus rules out any impact of changing depreciation rates on the long-run trend.

Figure 7

Share of firms investing in financial fixed assets [1]

(per type of financial fixed asset, % of firms)



Source: NBB.

1 Full annual account templates only.

an extensive margin (the firm held no financial assets in the previous year) and an intensive margin (the firm expands its existing financial asset base). The pattern reveals a declining incidence of investment in other companies linked by participating interests and other financial fixed assets, mainly driven by the intensive margin. Consistent with the conclusion for tangibles, other determinants of financial investment have dwarfed the impact of declining interest rates on these asset classes.

4. A strengthening of firms' balance sheets enabled by a reduction in their financing costs

While the decline in interest rates does not appear to have given a significant boost to corporate investment, its effect on firms' financial health was, nonetheless, not trivial. This is clear from the evolution in the financial charges to which firms are subject, as recorded in profit and loss statements. Unsurprisingly, these charges generally fell from the first half of the 1990s onwards, along with the general level of bank lending rates. As illustrated in the top-left chart in Figure 8, their median value – calculated for firms with financial debt – decreased from 3.7 % of total assets in 1993 to 1.0 % in 2021.

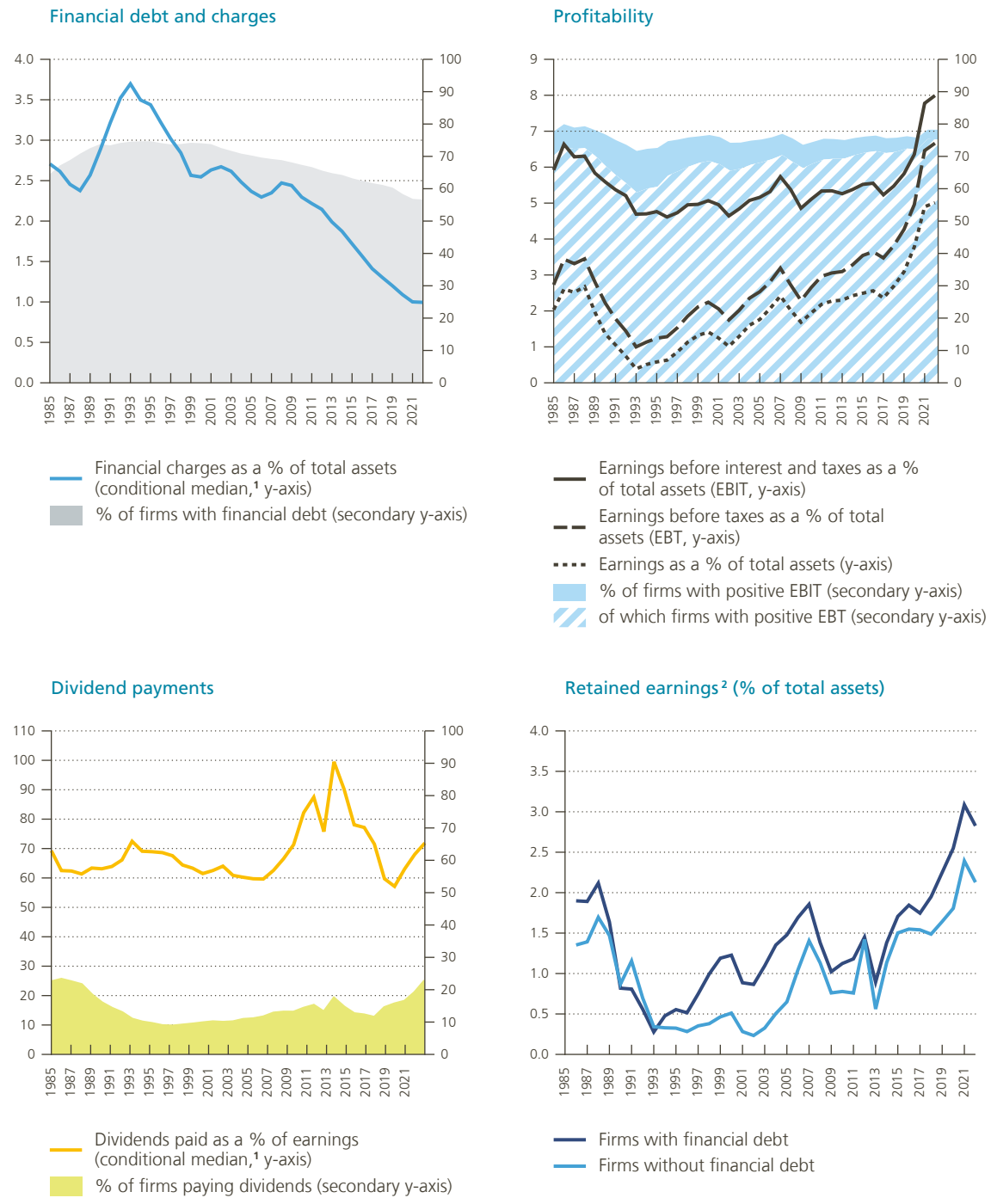
The reduction in their debt service burden has naturally improved firms' profitability. This is illustrated in the top-right chart in Figure 8 by the narrowing spread between the median value of earnings before interest and taxes (EBIT) and earnings before taxes (EBT). The difference between these two metrics corresponds to a firm's financial charges. The median EBIT has remained remarkably stable since the end of the ERM crisis in 1993, hovering around 5 % of total assets until 2019. It then rose significantly during the COVID-19 pandemic in 2020 and 2021, on the back of the support offered to Belgian businesses by the federal and regional governments, [16] and remained elevated in 2022 as most firms raised their output prices to compensate, at least in part, for the increase in their production costs (Bijnens and Duprez, 2023). This resulted in an expansion of their profit margins in nominal terms. However, owing to a general reduction in their financial charges, firms' median EBT increased more than fourfold, from 1.0 % of total assets in 1993 to 4.3 % in 2019. The impact of this development was more sizeable for some firms than for others, to such an extent that it could sometimes change the result for a financial year from a loss to a profit. While around 12 % of businesses incurred losses due to their debt burdens in the first half of the 1990s, only 2.9 % were affected by such a situation in 2021, at the end of the long decline in interest rates.

Looking at how firms made use of these additional earnings, it does not seem that they took advantage of lower financial charges to pay higher dividends to shareholders. As a rule of thumb, less than one fifth of Belgian businesses distribute dividends at the end of their accounting period, although this percentage has increased over the last twenty years. Dividends rose significantly in the first half of the 2010s which was, in all likelihood, due to a change in the tax treatment of the amounts paid to a company's shareholders upon liquidation. Before October 2014, liquidation proceeds were subject to tax at a rate of 10 %. Since then, this tax rate has been aligned with the standard withholding tax rate, which was 25 % at the time. This measure was announced in an Omnibus Act promulgated in June 2013, which led some companies to transfer a portion of their reserves to their shareholders from that time until the date on which the tax increase came into force, i.e. 1 October 2014. Hence, there was a peak in dividend payments in 2013 and 2014 which can be seen in the bottom-left chart in Figure 8. It can be assumed that the prolonged high dividend payments seen in the following two years were at least partly due to firms' anticipation of further rises in the withholding tax rate, which subsequently took place in January 2016 (to 27 %) and in January 2017 (to 30 %).

16 That support included lump-sum allowances and the facilitation of furlough arrangements, as well as some tax exemptions (Piette and Tielens, 2022).

Figure 8

Non-financial corporations' profit and losses, dividends and retained earnings



Source: NBB.

1 The median is calculated only for firms with financial debt (top-left chart) or paying dividends (bottom-left chart).

2 Calculated as the change in the reserves and accumulated profits recorded on the liabilities side of the balance sheet.

Since the reduction in firms' debt burdens did not occur hand in hand with a major change in their dividend policies, the additional earnings consequently strengthened their equity. This is evident from the changes in the reserves and accumulated profits recorded on the liabilities side of their balance sheets, which have followed

an upward trend since the 1990s despite a certain volatility and a slump due to adverse economic conditions in 2008 and 2009 (see the bottom-right chart in Figure 8). Of course, there was a sharp fall in retained earnings in 2013 related to the substantial dividend payments mentioned above. Moreover, as they are obviously more likely to take advantage of a decline in interest rates, firms reporting financial debt on the liabilities side of their balance sheet generally accumulated larger savings than non-borrowing firms.

How did firms use this additional equity? As discussed in Section 3, the period during which firms accumulated additional retained earnings as a result of a lighter debt service burden was not associated with a significant expansion in their production capacity. Consequently, the additional equity was used instead to expand their cash reserves. This may indicate a liquidity trap: a situation wherein economic agents prefer to hoard cash rather than spend it on new assets, despite low interest rates, as they assume that investment yields will increase in the future. Such a situation renders monetary policy ineffective since further decreases in interest rates will not affect firms' investment policies.

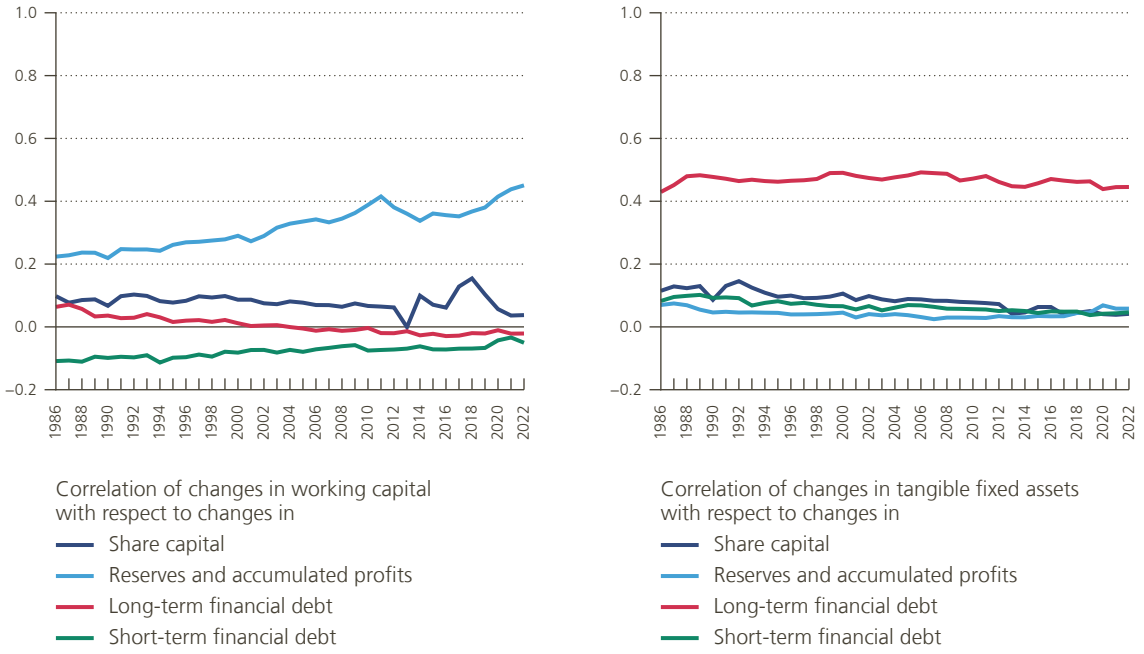
Another way to look at this is that larger cash reserves also mean a reinforcement of firms' working capital. The latter can be defined as the long-term liabilities (i.e. equity and debt with a maturity of more than one year) allocated to the financing of current assets. This basically corresponds to the level of cash firms have at their disposal to meet their short-term payments, such as supplier invoices and employee wages, while waiting for the cash inflows generated by sales.

This relationship between internal financing through retained earnings and firms' working capital is illustrated in Figure 9. The balance sheet data do not allow identification of the sources of financing used to finance a specific type of asset at firm level. Nonetheless, calculating correlations between changes in various balance

Figure 9

Relationship between changes in firms' working capital, tangible fixed assets and main financing sources

(correlation coefficients calculated by year) [1]



Source: NBB.

1 To avoid the influence of outliers, these correlations are calculated using a trimmed dataset, in which data points situated below the first percentile or above the ninety-ninth percentile are excluded.

sheet items for the whole population of NFCs makes it possible to put forward a global pattern regarding the way firms build up assets. The left-hand chart in Figure 9 shows that changes in firms' working capital are indeed associated with changes in their accumulated profits or in their reserves, to a much larger extent than any other source of financing. Furthermore, this relationship appears to become stronger over time. In other words, Belgian firms tend to rely more intensively on retained earnings to strengthen their working capital.

Incidentally, the right-hand chart in Figure 9 features a similar analysis to identify the main sources of financing of tangible fixed assets. It suggests that the main financing instrument used by firms to increase holdings of this type of asset is long-term financial debt. This also implies that the lowering of investment rates put forward in Section 3 should somehow exert downward pressure on the demand for this source of financing.

5. Net cash position, working capital and short-term debt

The previous section highlighted that firms have tended to strengthen their working capital (i.e. the share of their equity used to finance current assets) over time. This section expands on that finding and provides further insight into two closely related concepts, *net cash position* and *working capital requirements*. Moreover, we show that long-term trends in these two financial metrics have implications for the role of short-term financial debt.

In accounting models, a firm's *cash position* corresponds to the sum of its "cash at bank and in hand" and its "current investments". The former lumps together cash balances, securities due for payment and sight/savings accounts with credit institutions. The latter comprises shares and other equity, fixed-income securities held for investment purposes, term accounts with credit institutions, own shares, and other investments (typically relating to cash pooling activities). The left-hand chart in Figure 10 shows that the share of cash at bank and in hand has risen considerably, from 37 % in 2008 to 66 % in 2021. The decline in interest rates seems to have led firms to shift the composition of their current investment portfolios away from lower-yield financial assets. One source of this rebalancing is term accounts (see the central chart in Figure 10), whose share in total current investments came down to 24 % over the same period. The sharp decline in the interest rate differential with savings/sight accounts has mainly drained term accounts with a short maturity (right-hand chart).

Aside from the change in the composition of the cash position, it is important to take on board offsetting effects between assets and liabilities on the balance sheet. More precisely, the cash position can be analysed in *net* terms, i.e. after the deduction of short-term financial debt. Formally, the *net cash position* is defined as follows:

Net cash position = cash position – financial debt payable within one year

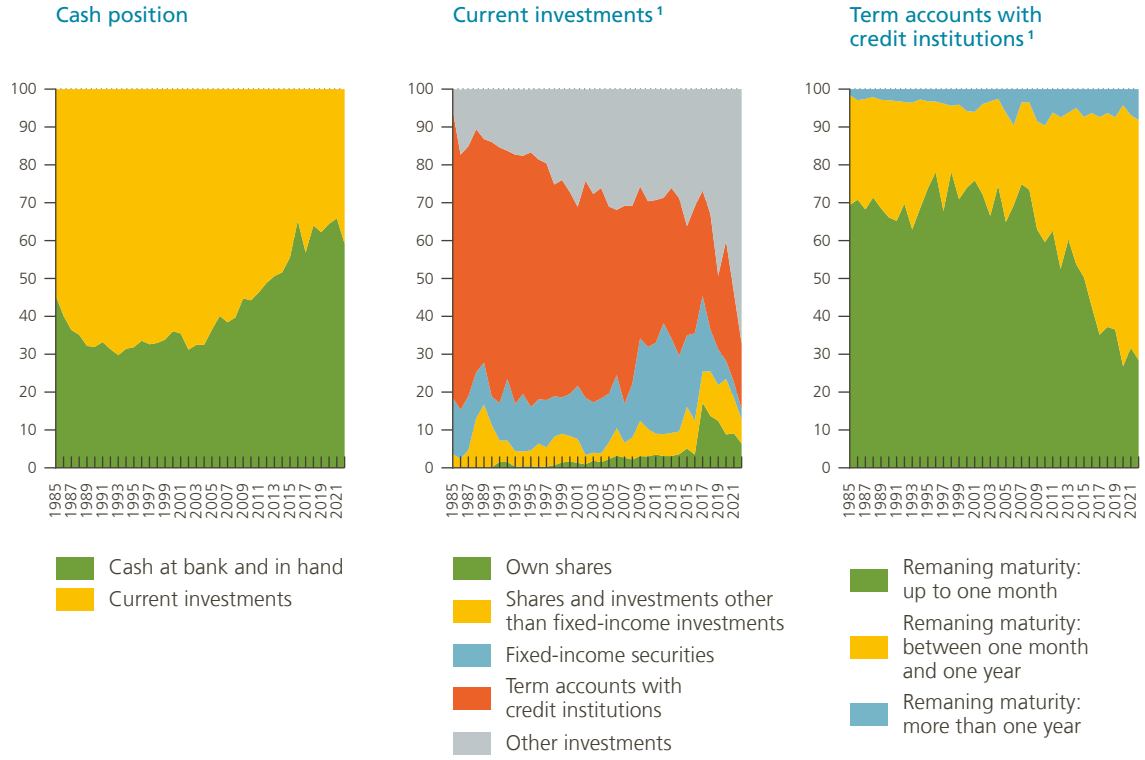
The net cash position is tightly linked to the notion of *working capital*. To develop this more formally, the following complementary definition of working capital is instructive:

Working capital = cash position
+ stocks and contracts in progress
+ amounts receivable within one year
– financial debt payable within one year
– non-financial debt payable within one year

Figure 10

Composition of firms' cash position, current investments and term accounts

(end of year, %)



Source: NBB.

1 Information available only for firms filing a full template for their annual accounts.

Working capital is equal to the difference between liquid assets (assets that are constantly renewed during business operations) and short-term financial and non-financial debt.[17] A positive working capital position therefore ensures that a firm has enough cash or cash equivalents to meet short-term obligations, such as short-term bank loans, unpaid taxes or invoices. High working capital is not always desirable. It may indicate that a business has too much inventory, is not investing its excess cash, or is not capitalising on low-expense debt opportunities. In addition, the level of working capital required by a firm depends directly on the needs created by its operating cycle. The concept of *working capital requirement* is directly related to this latter issue. It corresponds to the portion of inventory and short-term receivables that is not compensated by short-term operating liabilities:

Working capital requirement = stocks and contracts in progress
+ amounts receivable within one year
– non-financial debt payable within one year

A working capital requirement arises due to the time lag between incoming and outgoing payments associated with the operating cycle: for example, a firm must pay its suppliers and staff first, while it is only later that it receives payment from its customers or its stock is liquidated. This time lag varies greatly from one sector to

17 For the sake of conciseness, accrued income and liabilities (i.e. revenue/obligations that have already been earned/incurred but not yet cashed in/paid out) are not included in the above definition. They are however accounted for in our calculations.

another and from firm to firm, depending upon payment periods (customers, suppliers, social security and tax authorities, etc.) and storage times. As a rule of thumb, the longer the operating cycle, the larger the working capital requirement.

To come full circle, the net cash position corresponds to the difference between the two previously defined concepts:

Net cash position = working capital – working capital requirement

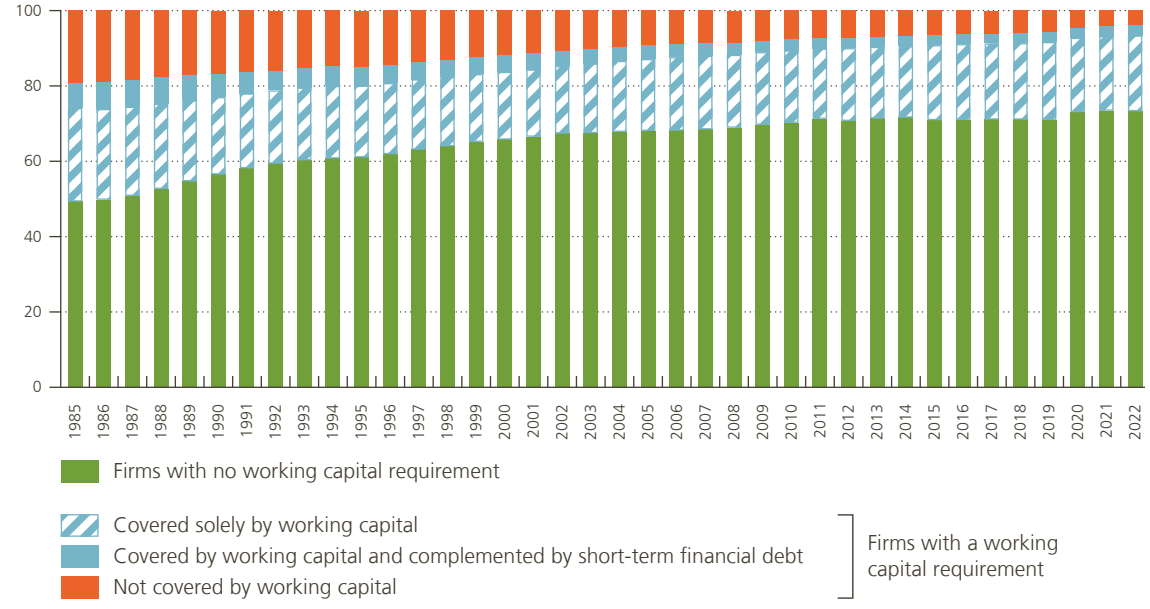
If working capital exceeds the working capital requirement, operating needs are fully met and the net cash position is positive. Conversely, if working capital is insufficient to cover the deficit associated with the operating cycle, the net cash position is negative and the firm will need to resort to short-term financial debt (in the form of an overdraft, a straight loan, etc.).

A declining imbalance between operational cash in- and outflows has led to an increasing percentage of firms without a working capital requirement (see Figure 11). In 1985, 49 % of firms had no working capital requirement, compared to 73 % in 2022. Moreover, over the decades, firms in need of working capital have typically been able to gather enough cash or other liquid financial assets to meet their short-term payment obligations, possibly with the help of short-term financial debt when necessary. By contrast, other firms are characterised by a negative net cash position. This means that, due to insufficient liquid assets to cover their working capital needs, they must borrow to meet their short-term payment obligations, a debt which they cannot immediately pay off. This is obviously symptomatic of a precarious financial situation. However, the share of the total population of firms in such a situation fell from 19 % in 1985 to 4 % in 2022. Another important takeaway from Figure 11 is that Belgian firms have become somewhat less reliant on short-term financial debt to cover their working capital requirements, yet another clear indication that their balance sheets have improved considerably over time.

Figure 11

Incidence and decomposition of working capital requirements

(% of firms)



Source: NBB.

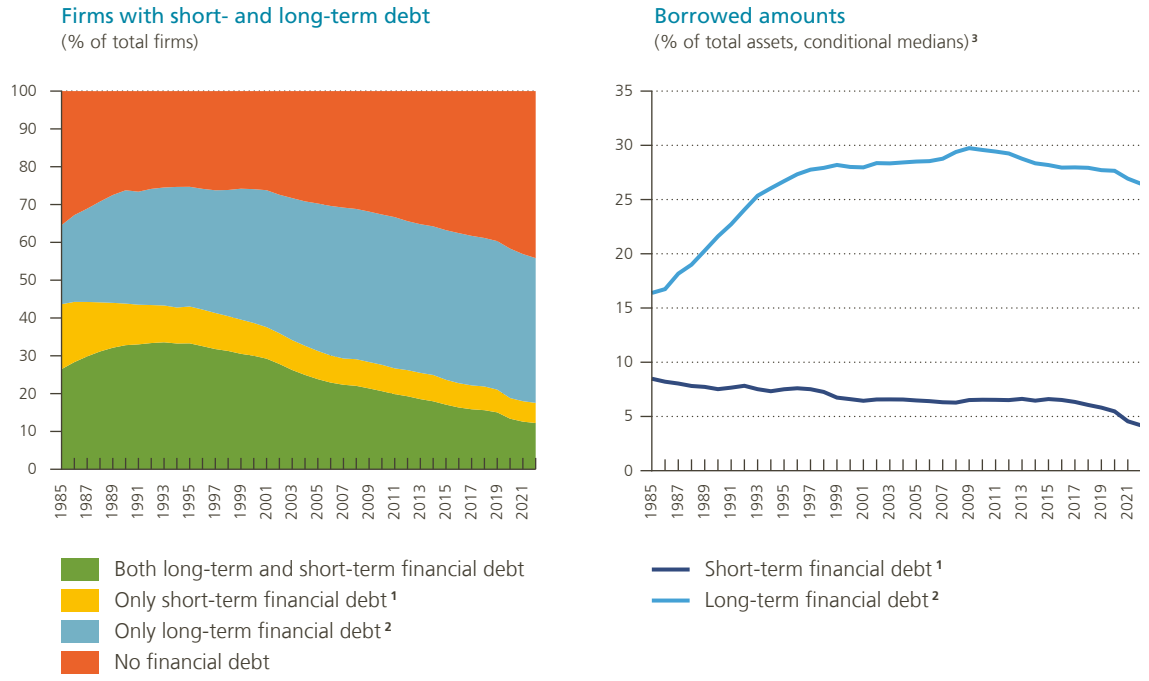
Why did firms with a working capital requirement resort less frequently to short-term financial debt? In this regard, it should be noted that short-term financial debt encompasses financing instruments used to meet day-to-day liquidity needs, such as short-term loans, revolving credit facilities, and overdrafts. Lenders generally charge higher interest rates on these forms of credit than on regular long-term loans as the former may not be secured by collateral and are therefore considered riskier. As such, this discourages businesses from building up a cash buffer based on short-term financial debt. In effect, as highlighted in Section 4, cash positions have historically been reinforced, at least in part, by the additional retained earnings accumulated by firms as a result of a decline in financial charges.

The lower percentage of firms with a capital requirement, coupled with an expansion in working capital amongst some of them, led to an overall reduction in the use of short-term loans by non-financial corporations. While 44 % of Belgian NFCs reported a debt payable within one year on the liabilities side of their balance sheets in 1990, either alone or in combination with longer-term debt, this figure had fallen to 18 % in 2022 (see the left-hand chart in Figure 12). In addition, the percentage of firms without any financial debt expanded from 26 % to 44 % over the same period. The intensity at which short-term debt is used by those firms that have taken it on has also fallen in general. In median terms, short-term debt shrank from 8 % in 1990 to 4 % in 2022 as a share of firms' total assets. In contrast, the median amount of debt with a longer maturity significantly increased during the 1990s but remained relatively stable after 2000. [18]

18 The declining importance of short-term loans in Belgian firms' liabilities is also apparent from other data sources. According to the Balance Sheet Items (BSI) statistics released by the NBB, loans with a maturity of up to one year accounted for 43 % of the total outstanding loans granted by Belgian banks to resident non-financial corporations at the end of 2000. This share had fallen to 23 % by the end of 2022.

Figure 12

Use of financial debt by Belgian non-financial corporations: extensive and intensive margins



Source: NBB.
1 Debt payable within one year.
2 Debt payable after more than one year.
3 Medians calculated only for firms with non-zero financial debt.

It is reasonable, moreover, to think that firms' lower reliance on working capital loans has further contributed to a reduction in their financial charges, thus reinforcing a virtuous circle whereby additional retained earnings can be used to expand working capital even further. However, the level of detail in the P&L data does not allow us to verify this hypothesis as the interest paid on short-term loans is not singled out.

Conclusion

Over most of the last thirty years, Belgian firms have benefited from a long decline in their financing costs. At first, this was thanks to the correction of macroeconomic imbalances that had forced central banks to maintain their interest rates at an excessively high level. The further easing of monetary conditions that took place after the establishment of the Eurosystem at the end of the 1990s was decided in accordance with the latter's main mission, i.e. to maintain price stability in the euro area. The ECB pursues this objective using a set of instruments intended to determine economic agents' borrowing costs, thereby influencing upwards or downwards the various components of aggregate demand and, ultimately, inflation.

The positive impact on bank loans, economic growth and inflation of the various non-conventional policy measures taken by the ECB in the aftermath of the GFC and the sovereign debt crisis is significant and well documented.[19] Nonetheless, as these measures essentially influenced agents' financing conditions, they alone did not counter the slowdown in corporate investment in the euro area. That trend appears to have been driven mainly by both cyclical (e.g. lower growth prospects and uncertainty) and secular (e.g. sectoral changes, the relocation of certain production activities outside Europe, and demography) factors.

Belgian firms were no exception in this regard. Despite the long decline in interest rates, they have also lowered their investment efforts, particularly after the GFC. Decreasing financing costs have nonetheless been beneficial in the sense that they have enabled firms to increase their profit margins and, by means of the additional retained earnings generated in this way, reinforce their balance sheets, as well as their liquidity position. Combined with a structural decline in working capital requirements, this development has exerted downward pressure on the demand for short-term loans, which are typically used by firms to meet their payment obligations when they do not have sufficient cash on hand.

The observations made in this article have potential implications from a monetary policy standpoint. In particular, we highlight the complexity of the transmission of policy measures to the real economy. Over the last three decades, Belgian firms have taken advantage of lower financing costs to build up cash reserves rather than invest in fixed assets. This obviously reduces the impact of monetary policy on aggregate demand and inflation. Nonetheless, the strengthening of firms' balance sheets and cash position has generated a positive side effect in terms of financial stability, which in itself promotes economic growth : the growing ability of firms to meet short-term payment obligations without borrowing is likely to reduce credit risk, for both banks and in the context of customer-supplier relations. Naturally, it can be assumed that rising interest rates could have the opposite effect, by lowering corporate profit margins and reducing the potential for internal financing. This implies greater reliance on debt to meet working capital requirements and greater expense, particularly for younger firms that were unable to take advantage of the long period of low interest rates to build up a solid cash position. This should be a point for attention in the normalisation of monetary policy.

19 See Altavila *et al.* (2021) for a meta-analysis.

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Conventional signs

%	per cent
€	euro
e.g.	for example
et al.	and others
etc.	*et cetera*
i.e.	id est (that is)

List of abbreviations

APP	Asset purchase programme
BSI	Balance sheet items
CBN	Commissie voor Boekhoudkundige Normen/Commission des normes comptables
CBSO	Central Balance Sheet Office
COVID-19	Coronavirus disease
EBIT	Earnings before interest and taxes
EBT	Earnings before taxes
EBITDA	Earnings before interest, taxes, depreciation and amortisation
ECB	European Central Bank
ERM	European Exchange Rate Mechanism
GDP	Gross domestic product
MFI	Monetary financial institution
NBB	National Bank of Belgium
NFC	Non-financial corporation
P&L	Profit and loss
RIR	Retail interest rates
TLTROs	Targeted Longer-term Refinancing Operations
UBO	Ultimate beneficial ownership

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