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THE IMPACT OF INTEREST RATE CHANGES BY THE EUROPEAN CENTRAL BANK ON BUSINESS INVESTMENT

L'IMPATTO DELLE VARIAZIONI DEI TASSI DI INTERESSE DELLA BANCA CENTRALE EUROPEA SUGLI INVESTIMENTI DELLE IMPRESE

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ABSTRACT

This thesis examines how changes in the European Central Bank's policy interest rates can affect business investment in the euro area. It follows the path from changing financing conditions to firms' investment decisions, with particular attention to the rapid tightening that began in 2022 after a prolonged period of very low interest rates. The analysis looks beyond a simple inverse relationship between rates and investment and considers the channels through which monetary policy reaches firms: the cost of capital, credit availability, balance-sheet conditions, asset prices, and expectations and uncertainty.

The discussion brings together established economic theory, academic literature, ECB evidence, Eurostat material, and business surveys. The evidence indicates that higher interest rates can make some investment projects less attractive by raising financing costs, while tighter credit can create an additional constraint for firms that depend heavily on bank finance. The response is not the same for every business. SMEs and firms with weaker financial positions may be more exposed to changes in lending conditions, while investment sensitivity also varies across sectors and countries according to capital intensity, financing structures, and market conditions.

The 2022–2024 episode provides a concrete setting in which to see these mechanisms at work. Inflationary pressures led the ECB to move from a prolonged accommodative stance to rapid monetary tightening, changing the financing environment faced by businesses. Lending surveys and investment indicators point to less favourable investment conditions during this period, although demand, financial conditions, and uncertainty also shaped the adjustment. The thesis therefore does not treat the observed changes as the result of interest rates alone.

The evidence points to a multi-channel and uneven relationship between ECB interest-rate changes and business investment. Firms make decisions not only on the basis of

current financing costs but also on what they expect for future rates, demand, inflation, and economic conditions. The findings therefore emphasise how financing conditions and expectations interact with firms' investment decisions.

Keywords: European Central Bank, monetary policy, interest rates, business investment, monetary transmission, credit channel, euro area, SMEs, inflation, uncertainty

ABSTRACT IN ITALIANO

Questa tesi analizza come le variazioni dei tassi di interesse di riferimento della Banca Centrale Europea possano influenzare gli investimenti delle imprese nell'area dell'euro. L'analisi segue il processo di trasmissione dalle condizioni di finanziamento alle decisioni di investimento delle imprese, con particolare attenzione al rapido inasprimento della politica monetaria iniziato nel 2022 dopo un lungo periodo caratterizzato da tassi di interesse molto bassi. Il rapporto tra tassi di interesse e investimenti non viene considerato come un semplice effetto meccanico, ma viene analizzato attraverso i principali canali della trasmissione monetaria: il costo del capitale, la disponibilità del credito, le condizioni patrimoniali delle imprese, i prezzi delle attività e le aspettative e l'incertezza.

La discussione combina la teoria economica consolidata con la letteratura accademica esistente, le evidenze della BCE, i dati Eurostat e le indagini sulle imprese. Le evidenze esaminate indicano che tassi di interesse più elevati possono rendere meno convenienti alcuni progetti di investimento aumentando i costi di finanziamento, mentre condizioni creditizie più restrittive possono limitare ulteriormente gli investimenti delle imprese maggiormente dipendenti dal credito bancario. Questi effetti non sono uniformi. Le piccole e medie imprese e le imprese con condizioni finanziarie più deboli possono essere maggiormente esposte ai cambiamenti nelle condizioni di finanziamento bancario; inoltre, la sensibilità degli investimenti varia tra settori e paesi in funzione dell'intensità di capitale, delle strutture di finanziamento e delle condizioni di mercato.

Il periodo 2022–2024 offre un contesto concreto per analizzare questi meccanismi. Le pressioni inflazionistiche hanno portato la BCE a passare da una fase prolungata di politica monetaria accomodante a un rapido inasprimento, modificando l'ambiente finanziario delle imprese. Le evidenze provenienti dalle indagini sul credito e dagli indicatori degli investimenti mostrano condizioni meno favorevoli per gli investimenti

durante la fase restrittiva, sebbene l'aggiustamento sia stato influenzato anche da altri fattori, tra cui la domanda, le condizioni finanziarie e l'incertezza. La tesi, pertanto, non interpreta i cambiamenti osservati come il risultato dei soli tassi di interesse.

Lo studio conclude che l'effetto delle variazioni dei tassi della BCE sugli investimenti delle imprese è meglio compreso come un processo caratterizzato da più canali e da effetti differenti tra imprese e settori. Le aspettative sui tassi futuri, sulla domanda, sull'inflazione e sulle condizioni economiche possono influenzare le decisioni di investimento insieme ai costi di finanziamento correnti. Le evidenze esaminate mettono quindi in luce come condizioni di finanziamento e aspettative interagiscano nelle decisioni di investimento delle imprese.

Parole chiave: Banca Centrale Europea, politica monetaria, tassi di interesse, investimenti delle imprese, trasmissione monetaria, canale del credito, area dell'euro, PMI, inflazione, incertezza

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION..... 1
CHAPTER 2: WHY INTEREST RATES MATTER FOR BUSINESS INVESTMENT.....4
CHAPTER 3: FROM LOW RATES TO ECB TIGHTENING.....7
CHAPTER 4: WHAT HAPPENED TO BUSINESS INVESTMENT?.....10
CHAPTER 5: WHO WAS AFFECTED MOST?.....13
CHAPTER 6: EXPECTATIONS, UNCERTAINTY AND THE 2022–2024 EPISODE.....16
CHAPTER 7: POLICY IMPLICATIONS.....19
CHAPTER 8: CONCLUSION.....22
REFERENCES.....25

CHAPTER 1: INTRODUCTION

THE PROBLEM AND ITS CONTEXT

An investment decision commits resources today in exchange for uncertain returns in the future. For a firm considering a factory, machinery, software, or an expansion project, the relevant comparison is between the expected return on the project and the full cost of financing it. Interest rates enter that calculation directly through the discount rate and borrowing cost, but they also affect credit supply, asset values, and expectations. The effect of monetary policy on investment therefore begins with a familiar capital-budgeting problem and then extends into the wider financial system.

This became especially visible in the euro area after a long period of exceptionally low interest rates. From 2022, the European Central Bank (ECB) moved rapidly from an accommodative monetary stance towards tighter conditions. The shift was aimed at bringing inflation back under control, but it also changed the environment in which firms planned and financed investment. That makes the episode useful for asking not only whether investment responds to interest rates, but why the response can differ from one firm or sector to another.

The central question of this thesis is therefore: how do changes in ECB interest rates affect business investment in the euro area, and why are some firms and sectors more exposed than others? The answer cannot be reduced to the familiar idea that higher rates simply mean less investment. Firms also face changes in credit availability, balance-sheet conditions, asset prices, and expectations about the future.

RESEARCH OBJECTIVES AND QUESTIONS

The main objective is to examine the relationship between ECB interest-rate changes and business investment in the euro area using existing economic literature and secondary evidence. The analysis focuses on four related questions: how monetary policy reaches firms, how investment has responded during different monetary-policy periods, why the response can differ across firm sizes, sectors, and financial structures, and what the 2022–2024 tightening episode reveals about these mechanisms.

The research is guided by the following questions:

- How do changes in ECB interest rates affect business investment in the euro area?
- Through which channels can monetary policy influence firms' investment decisions?
- Why might SMEs and financially constrained firms respond differently from larger or financially stronger firms?
- What does the available evidence show about investment during the ECB's 2022–2024 tightening cycle?
- What role do expectations and uncertainty play in the investment response?

APPROACH AND SCOPE

The thesis is based on secondary evidence. It draws on established investment theories, academic studies, ECB publications, Eurostat information, and business surveys. Rather than estimating a new causal relationship, the aim is to bring these

sources together into a coherent explanation of how monetary conditions can affect investment. No original econometric model or statistical estimation is conducted.

The main focus is on non-financial business investment in the euro area. The analysis considers the ECB's monetary-policy experience since the introduction of the euro, while giving particular attention to the shift from low rates to tightening after 2022 and the subsequent rate reductions in 2024. Household and public-sector investment are outside the main scope.

STRUCTURE OF THE THESIS

The argument develops as a continuous story. Chapter 2 establishes the main channels through which interest rates can affect investment. Chapter 3 places those channels in the ECB's monetary-policy environment and follows the shift from prolonged accommodation to tightening. Chapter 4 then asks what happened to investment and credit conditions. Chapter 5 considers why the response was not the same across firms, sectors, and countries. Chapter 6 adds the forward-looking role of expectations and uncertainty before Chapter 7 considers the policy implications. Chapter 8 brings the evidence back to the central question.

CHAPTER 2: WHY INTEREST RATES MATTER FOR BUSINESS INVESTMENT

THE INVESTMENT DECISION AND THE COST OF CAPITAL

The most direct connection between interest rates and investment comes through the cost of capital. In the neoclassical approach associated with Jorgenson (1963), firms compare the expected benefits of additional capital with the cost of using or financing it. When interest rates rise, financing an investment project generally becomes more expensive. A project that looked worthwhile when financing was cheap may no longer offer a sufficient return once its cost of capital increases.

That does not mean that every firm cuts investment whenever the policy rate rises. The decision also depends on the expected profitability of the project, the firm's financial position, its financing structure, and its view of future demand. The cost of capital is therefore an important starting point, but it cannot by itself explain the full investment response.

CREDIT AVAILABILITY AND THE BALANCE SHEET

Interest rates affect investment through more than the price of borrowing. They can also influence whether external finance is available in the first place. Bernanke and Gertler (1989, 1995) emphasise this credit channel of monetary transmission: changes in monetary conditions can affect both the supply and the price of external

finance. For a firm that cannot easily replace a bank loan with bond or equity finance, that difference can be decisive.

The bank-lending channel becomes particularly relevant when tighter financial conditions lead banks to apply stricter lending standards or reduce the supply of credit. A firm may then postpone an investment even when the project itself still appears profitable, simply because the required finance is harder or more expensive to obtain. This is one reason why the same ECB decision can produce different outcomes for different businesses.

There is another link through the firm's balance sheet. Higher interest rates can increase debt-servicing costs and leave less cash available for new investment. Changes in asset values can also affect the collateral that firms can offer to lenders. Kiyotaki and Moore (1997) show how changes in collateral and borrowing capacity can reinforce fluctuations in economic activity. For an individual firm, the practical implication is straightforward: a highly leveraged or financially weaker business may have less room to absorb a rise in financing costs.

ASSET PRICES AND FINANCIAL CONDITIONS

Monetary policy can also reach investment through asset prices. Tobin's Q theory (Tobin, 1969) links investment to the relationship between the market value of a firm's assets and the cost of replacing them. If higher interest rates reduce asset valuations, the incentive to expand capital may weaken. This channel is more direct for firms that

rely on capital markets, although changes in financial conditions can also affect smaller firms indirectly.

The financial environment surrounding the policy rate matters as well. An ECB decision does not translate one-for-one into the rate paid by every firm. Banks, financial markets, and different borrowing structures all influence the final financing conditions. Research on monetary transmission in the euro area has found differences in pass-through across countries and financial systems (Mojon and Peersman, 2001; Angeloni, Kashyap, and Mojon, 2003).

EXPECTATIONS AND UNCERTAINTY

Investment is inherently forward-looking. A project requires expenditure today but produces returns over a future period, so managers must form expectations about financing costs, demand, inflation and the wider economy. Dixit and Pindyck (1994) show why irreversibility gives waiting an option value. Recent ECB evidence adds a financing-expectations dimension: Ferrando and Forti Grazzini (2023) find that contractionary monetary-policy shocks lead firms to revise their expectations about future bank-loan availability downward, with the response particularly pronounced for large contractionary shocks.

The timing of investment can therefore respond to expected financing conditions before current borrowing costs fully adjust. The ECB's 2024 SAFE analysis finds that tighter monetary policy lowers firms' expectations about the future availability of bank loans and can affect real decisions before an actual change in credit conditions

occurs. In the same survey evidence, firms' median one-year inflation expectations fell from 5% in June 2023 to 3% in June 2024, illustrating how rapidly the expectations environment changed during the easing phase.

INTERACTIVE TRANSMISSION MECHANISMS

The five channels considered here—cost of capital, credit availability, balance-sheet conditions, asset prices, and expectations and uncertainty—are closely connected. A rate increase can raise the cost of a loan, encourage tighter lending standards, reduce the cash flow of a highly leveraged firm, affect asset valuations, and alter expectations about future demand at the same time. These changes can reinforce one another.

This is why the investment response cannot be read from the policy rate alone. The next step is to see how these channels fit into the ECB's actual monetary-policy experience, and then to examine what happened to investment and why the response differed across firms and sectors.

CHAPTER 3: FROM LOW RATES TO ECB TIGHTENING

THE ECB'S ROLE IN THE EURO AREA

The ECB was established in 1998 and became responsible for monetary policy in the euro area in 1999. Its primary objective is price stability. Through its policy instruments, the Governing Council influences financial conditions across the euro area, with policy rates providing the most direct conventional instrument.

The main policy rates are the deposit facility rate, the main refinancing operations rate, and the marginal lending facility rate. The ECB has also used longer-term refinancing operations and asset-purchase programmes, particularly when conventional policy rates were already very low. These instruments matter for the investment story because they shaped the financing environment in which firms made their decisions.

THE LONG PERIOD OF ACCOMMODATIVE CONDITIONS

The years before the 2022 tightening cycle were marked by unusually accommodative monetary and financial conditions. After the sovereign debt crisis and a prolonged period of low inflation, the ECB kept policy rates very low and used additional measures to support financing conditions. Those conditions continued through the pandemic, when monetary policy was combined with other forms of economic support.

For businesses, this meant that many projects could be financed in a very different environment from the one that followed. The important point is not that all firms invested more or reacted in the same way. Rather, the 2022 shift began from a starting point in which financing was relatively inexpensive.

THE INFLATION SHOCK AND THE POLICY RESPONSE

The monetary environment changed as inflation rose sharply after the pandemic. Supply disruptions, higher energy prices, the reopening of economies, and geopolitical

developments all contributed to stronger inflationary pressure. As inflation moved well above the ECB's medium-term objective, the policy focus shifted from supporting demand towards restoring price stability.

The ECB began raising its key policy rates in July 2022. The deposit facility rate rose from 0.00% on 27 July 2022 to 0.75% in September, 2.00% in December, 3.50% in June 2023 and 4.00% in September 2023. The sequence amounted to a rapid 400-basis-point increase in the deposit facility rate in just over a year. The change was transmitted to firms' financing conditions: by February 2023, firms were paying on average about 250 basis points more on new bank loans than at the end of 2021 (Lane, 2023).

THE 2022–2024 EPISODE AND THE INVESTMENT CHANNEL

The importance of the 2022–2024 episode lies in the sequence. A long period of low rates was followed by an inflation shock and then by rapid monetary tightening. Higher financing costs were only one part of the change. Banks also tightened lending conditions, firms faced uncertainty about future demand and inflation, and the economic outlook weakened in parts of the euro area.

The ECB began easing in June 2024, cutting the three key rates by 25 basis points after keeping them unchanged for nine months; the deposit facility rate then fell to 3.75%. It was reduced again to 3.50% in September 2024. The change in direction did not immediately restore pre-tightening financial conditions. ECB survey evidence shows that financing conditions improved somewhat from late 2023 into 2024 while remaining tight, and business investment was still subdued.

SELECTED POLICY PHASES

Period	Policy direction	Selected rate level	
1999–2001	Tightening	MRO reached 4.75%	
2001–2005	Easing	MRO reached 2.00%	
2005–2008	Tightening	MRO reached 4.25%	
2008–2009	Rapid easing	MRO reached 1.00%	
2011	Brief tightening	MRO reached 1.50%	
2011–2022	Extended easing	Deposit facility reached −0.50%	
2022–2023	Rapid tightening	Deposit facility reached 4.00%	
2024	Easing resumed	Deposit facility reduced to 3.25% by year-end	

Table 3.1. Selected ECB monetary-policy phases discussed in the thesis.

Note: The table summarises the rate-cycle information already used in the original thesis; it is included as a concise timeline rather than as an econometric comparison.

CHAPTER 4: WHAT HAPPENED TO BUSINESS INVESTMENT?

AGGREGATE INVESTMENT AND TRANSMISSION LAGS

The available evidence shows a sequence in which tighter monetary conditions coincided with weaker financing and subdued business investment, with lags between the policy decision and firms' expenditure. The ECB's 2024 assessment reports that euro-area business investment decelerated considerably in 2023 and contracted sharply in the final quarter of the year before ticking up modestly in the first quarter of 2024. Eurostat's national-accounts data similarly show that gross fixed capital formation in the euro area fell by 2.3% quarter-on-quarter in the first quarter of 2024 and by a further 2.4% in the second quarter in the June 2024 release. These movements cannot be assigned to interest rates alone, but their timing is consistent

with a tightening episode in which financing conditions became progressively more restrictive.

Recent euro-area evidence gives the transmission more concrete dimensions. In its October 2023 Bank Lending Survey, the ECB reported a 12% net tightening of credit standards for enterprise loans in the third quarter of 2023, following 14% in the second quarter and a cumulative tightening that had remained above its historical average for six consecutive quarters. Banks also reported that the decline in firms' loan demand in the third quarter was mainly driven by higher interest rates and lower financing needs for fixed investment. The evidence therefore connects the financing channel to an observable change in firms' demand for credit rather than relying only on the policy-rate series.

CREDIT CONDITIONS AS EVIDENCE OF TRANSMISSION

The ECB Bank Lending Survey gives a direct view of the credit side of transmission. In the fourth quarter of 2022, 26% of banks reported a net tightening of credit standards for loans or credit lines to enterprises, compared with 19% in the previous quarter. The figure reached 27% in the first quarter of 2023. In the third quarter of 2023, the net tightening remained 12%, still above the survey's historical average of 9%. At the same time, firms' net demand for loans fell sharply, with banks identifying higher interest rates and lower fixed-investment needs as major drivers.

In the 2023 SAFE, firms reported a net decline of 10% in the availability of bank loans and 6% in the availability of credit lines, while the external financing gap

widened to a net 8%. These figures show how the tightening of credit conditions became an important part of the financing environment faced by firms, particularly SMEs that rely heavily on bank finance.

INTEREST-RATE PASS-THROUGH

For the policy-rate channel to reach businesses, changes in ECB rates have to pass through to lending rates. Previous research shows that this happens across the euro area, but the speed and size of the pass-through differ between countries and financial systems (Mojon and Peersman, 2001; Sørensen and Werner, 2006). Shorter-term lending rates generally adjust more quickly, while longer-term financing conditions can move more gradually.

The recent tightening cycle was unusual because the policy rate moved rapidly over a relatively short period. For firms taking out new loans or refinancing existing debt, the change could become relevant quickly. A firm with fixed-rate or long-term financing, by contrast, could be less exposed in the short term. The difference helps explain why the same policy-rate movement does not produce the same investment response everywhere.

EVIDENCE FROM THE 2022–2023 TIGHTENING PERIOD

Business surveys, lending evidence, and investment indicators point to a clear deterioration in financing conditions during the tightening period. The ECB's July 2024 SAFE analysis reports that, immediately after the energy-price shock, a record 58% of

large firms and 40% of SMEs reported increases in interest expenses. The same analysis shows that the financing gap reached its highest net percentage since the sovereign debt crisis during the tightening phase. The ECB's 2024 investment survey assessment also reports that business investment decelerated considerably in 2023 and contracted sharply in the final quarter. These observations fit the investment story, while the simultaneous energy shock and weakness in demand prevent a simple attribution to interest rates alone.

The evidence needs to be read alongside the other forces affecting investment. Demand, energy costs, supply conditions, fiscal measures, and confidence also changed during the period. The 2022–2024 episode therefore cannot be used to attribute every movement in investment to ECB rates. Its value is that several transmission channels were operating at the same time.

FROM RATES TO INVESTMENT: WHAT THE EVIDENCE CAN SUPPORT

Overall, the evidence points to a broad relationship rather than a single numerical effect: tighter monetary conditions were associated with less favourable conditions for business investment, and the transmission worked through both the price and availability of finance. The evidence also shows that the response varied with firms' financing structures and economic circumstances.

If the response to monetary tightening were the same for every business, the policy-rate story would be relatively simple. The evidence points instead to differences

in financing structures and economic circumstances. The next question, therefore, is why some firms and sectors are more exposed than others.

CHAPTER 5: WHO WAS AFFECTED MOST?

FIRM SIZE AND ACCESS TO FINANCE

Monetary tightening does not reach all firms in the same way because businesses enter a tightening cycle with different financial resources and financing options. SMEs are particularly relevant in the euro area because many smaller businesses rely heavily on bank loans for external finance. Large corporations are more likely to have access to a wider range of funding sources, including capital markets.

When bank lending becomes more expensive or restrictive, that difference can become important. A firm with retained earnings or several external funding options may be able to continue with an investment project, while a bank-dependent firm may have to postpone it. Evidence from the ECB's Survey on the Access to Finance of Enterprises is consistent with greater sensitivity among smaller firms to financing conditions (Altavilla et al., 2019).

FINANCIAL STRENGTH AND LEVERAGE

Firm size is only one part of the picture. Balance-sheet strength and the maturity structure of debt determine how quickly a policy-rate increase reaches a firm's cash flow. ECB analysis in 2023 identified higher corporate vulnerabilities as interest rates rose, with highly indebted firms particularly exposed to higher interest expenses. The

mechanism is straightforward: when more operating cash flow is committed to servicing debt, fewer internal resources remain available for discretionary investment.

The timing of refinancing matters too. A company that locked in long-term financing before the tightening cycle may see its effective financing cost rise more slowly than a company that relies on short-term or variable-rate borrowing. The same policy-rate movement can therefore have very different consequences even for firms operating in the same sector.

SECTORAL DIFFERENCES

Manufacturing

Manufacturing is relatively interest-sensitive because investment in machinery, equipment and production capacity often involves large upfront commitments. ECB analysis in May 2024 estimated that the peak impact of the monetary-policy tightening on activity was larger for manufacturing than for services and that the peak occurred in the fourth quarter of 2023. The same analysis found a larger estimated effect on business and housing investment than on private consumption, with the transmission to business investment strengthening further in the first quarter of 2024.

Construction and Real Estate

Construction and real estate are particularly exposed to financing conditions because projects often require substantial external borrowing and depend on long-

term expectations about property demand. Higher interest rates can raise project financing costs while also reducing demand for property. When both sides of the equation move against a project, investment can become harder to justify.

Technology and Knowledge-Based Activities

Technology and knowledge-based firms do not all finance investment in the same way. Software, research and development, and skills investment can sometimes be funded from retained earnings, reducing direct dependence on bank loans. At the same time, tighter financial conditions can affect equity valuations and external funding. Recent ECB research on innovation investment finds that the 2022–2023 tightening was associated with a significant decline in firms' innovation investment, with stronger responses among firms with higher shares of bank loans and variable-rate debt.

DIFFERENCES ACROSS EURO-AREA COUNTRIES

The common monetary policy of the ECB operates through national financial systems that are not identical. Countries differ in banking structures, capital-market development, corporate indebtedness, and the extent to which firms use fixed or variable-rate finance. The same ECB decision can therefore reach businesses through different financial conditions.

This country dimension also appears in the literature on monetary transmission. Angeloni, Kashyap, and Mojon (2003) and Mojon and Peersman (2001) document differences in transmission across euro-area economies. These differences do not

change the fact that monetary policy is common; they help explain why its effects on firms can vary from one country to another.

CROSS-FIRM AND CROSS-SECTOR DIFFERENCES

The differences in firm size, financial strength, sector, and country change how the interest-rate effect should be understood. A policy-rate increase does not mechanically reduce every firm's investment by the same amount. It changes a set of financial conditions, and firms that depend more heavily on external finance or have weaker balance sheets can be more exposed to the change.

CHAPTER 6: EXPECTATIONS, UNCERTAINTY AND THE 2022–2024 EPISODE

INVESTMENT IS FORWARD-LOOKING

A firm deciding whether to invest today is making a decision about future cash flows. It has to ask whether demand will be strong enough to justify additional capacity, whether financing costs will remain manageable, and whether the wider economic environment will support the project. Expectations are therefore part of the investment decision itself, not an issue that comes after it.

That forward-looking nature means firms do not necessarily wait for every policy change to appear in their current borrowing rate. If managers expect rates to remain high or demand to weaken because of tighter financial conditions, they may revise investment plans before the full effect is visible in realised expenditure.

UNCERTAINTY AND THE VALUE OF WAITING

Dixit and Pindyck (1994) provide a framework for understanding why uncertainty can lead firms to delay irreversible investment. A factory, large piece of machinery, or other long-lived project cannot always be resold at its original value. When the future is uncertain, waiting can have value because it gives the firm more information before it commits capital.

In monetary policy, uncertainty can concern the future path of interest rates, inflation, demand, or the duration of restrictive conditions. This does not mean that uncertainty always causes investment to fall by a measurable amount. It means that uncertainty can affect the timing of investment and may reinforce the caution created by higher financing costs.

FORWARD GUIDANCE AND COMMUNICATION

Central-bank communication matters because expectations about future policy form part of the monetary transmission process. Forward guidance is intended to provide information about the likely direction of policy and influence expectations. Its effectiveness depends on how economic conditions evolve and on whether later developments require the central bank to change course.

The 2021–2022 period illustrates the difficulty of communicating policy when inflation changes rapidly. The ECB adjusted its stance as the inflation outlook deteriorated. The evidence available for this thesis supports the more limited

conclusion that expectations changed during this period; it does not allow us to quantify how much any communication error affected business investment.

THE 2022–2024 EPISODE AS A COMBINED SHOCK TO FINANCING CONDITIONS

The tightening cycle brought several channels into operation at the same time. The ECB moved the deposit facility rate from 0.00% in July 2022 to 4.00% in September 2023, while bank lending standards tightened and firms reported rising interest expenses. By the end of 2022, 26% of banks reported a net tightening of enterprise credit standards; by the first quarter of 2023 the figure was 27%. The financing shock was therefore not limited to the price of credit: its quantity and expected future availability changed as well.

These channels help make sense of the uneven investment response. A highly leveraged, bank-dependent firm with large upfront investment needs faced a different financing environment from a financially stronger firm with long-term fixed-rate funding. A construction project could likewise be more sensitive to financing costs than an investment in intangible assets funded internally.

THE MOVE TOWARDS EASING IN 2024

As inflation pressures eased, the ECB began reducing policy rates in 2024. The direction of policy changed again, but investment did not automatically return to its earlier path. Financing conditions remained tighter than during the low-rate period, and firms continued to face uncertainty about demand and the economic outlook.

The episode reinforces the central point of the thesis: investment depends on current financial conditions as well as expectations about where those conditions are heading. A rate cut can improve financing conditions, but the strength and timing of any investment response depend on the wider environment in which firms make their decisions.

CHAPTER 7: POLICY IMPLICATIONS

IMPLICATIONS FOR MONETARY-POLICY COMMUNICATION

Monetary policy affects investment through more than the current policy rate. Communication can matter because firms make decisions using expectations about future financing and economic conditions. Clear communication about the objectives and factors guiding policy can help firms understand changes in the policy environment.

This does not mean that the ECB should place business investment ahead of its primary mandate of price stability. It means that the investment effects of monetary tightening form part of the wider transmission process that policymakers have to consider when assessing economic conditions.

FINANCING RESILIENCE FOR FIRMS

The greater exposure of bank-dependent and financially constrained firms points to the value of diversified financing structures. Broader access to capital markets,

equity finance, venture capital, and other external funding sources can reduce dependence on a single channel of finance.

Public financial institutions and guarantee schemes can also affect firms' access to finance when financial conditions are tight. These measures belong to the wider policy environment rather than monetary policy itself, and their design has to be considered alongside fiscal and financial-stability considerations.

IMPLICATIONS FOR BUSINESS FINANCIAL PLANNING

For firms, the recent tightening cycle shows why financing conditions need to be considered over the full life of an investment project. Scenario analysis can help businesses examine how changes in borrowing costs, demand, and refinancing conditions could alter the expected return on a project.

This is particularly relevant for highly leveraged firms and projects with large irreversible costs. Adequate liquidity and less reliance on short-term borrowing can give firms more flexibility when monetary conditions change.

LONG-TERM INVESTMENT PRIORITIES

The euro area also faces substantial investment needs in areas such as digitalisation, energy infrastructure, and the transition towards a more sustainable economy. These projects can require large amounts of capital and long planning horizons, which makes their financing conditions relevant to the wider investment outlook.

The evidence indicates that investment conditions reflect monetary policy alongside demand, energy costs, fiscal measures and structural investment needs. The ECB's 2024 survey work, for example, described business investment as subdued while also pointing to the 2022–23 energy crisis and weak demand as important forces. The policy implication is therefore about interaction: financing conditions can amplify or dampen firms' investment incentives, while investment policy and fiscal support operate through additional channels.

CHAPTER 8: CONCLUSION

ANSWER TO THE RESEARCH QUESTION

This thesis set out to examine how changes in ECB interest rates affect business investment in the euro area and why the effects differ across firms and sectors. The evidence points to several connected channels. Higher interest rates can raise the cost of capital, while tighter credit conditions can reduce the availability of external finance. Changes in debt-servicing costs, asset values, and expectations can also affect a firm's ability and willingness to invest.

The 2022–2024 episode brings the channels together. The ECB's deposit facility rate moved from 0.00% in July 2022 to 4.00% in September 2023, while the Bank Lending Survey recorded substantial tightening in enterprise credit standards and SAFE reported sharp increases in firms' interest expenses. At the same time, ECB analysis found that business investment decelerated considerably in 2023 and contracted sharply in the final quarter before a modest rebound in early 2024. These

developments are consistent with monetary tightening contributing to weaker investment, but the same period also contained the energy shock, weak demand and other financial disturbances.

The second part of the research question concerns why firms respond differently. SMEs and businesses that depend strongly on bank finance can be more exposed to changes in lending conditions. Highly leveraged firms can face greater debt-servicing pressure, while sectors such as construction and real estate can be particularly sensitive because of their reliance on external finance and long project horizons. Differences in national financial systems also mean that the same ECB decision can be transmitted differently across countries.

EXPECTATIONS AND UNCERTAINTY

Investment remained forward-looking throughout the episode. Firms had to assess not only the higher cost of current finance but also how long restrictive conditions would last and whether demand would justify new capacity. SAFE evidence shows that monetary-policy tightening reduced expected future bank-loan availability, while the ECB's 2024 investment assessment found business investment subdued even as the policy cycle began to turn. This combination is consistent with an adjustment process in which firms can delay projects while waiting for greater clarity about financing and demand.

LIMITATIONS

The main limitation is methodological. The thesis relies on existing literature, ECB publications, Eurostat information, and business surveys and does not conduct an original econometric estimation. It therefore cannot provide a new numerical estimate of the causal effect of an ECB rate change on investment. Investment is also affected by demand, inflation, fiscal policy, energy prices, geopolitical developments, and firm-specific conditions, which moved at the same time as monetary policy during 2022–2024.

The conclusions should therefore be read as an evidence-based synthesis of established mechanisms and observed patterns. The 2022–2024 period is particularly useful for tracing transmission because several channels moved in the same direction, but that same feature makes it difficult to isolate the contribution of the policy rate from the effects of energy prices, demand and uncertainty.

FINAL PERSPECTIVE

The relationship between monetary policy and business investment is best understood as a process rather than a single effect. A long period of low rates created one financing environment; an inflation shock changed the policy setting; rapid tightening then altered the cost and availability of finance; and firms responded according to their financial structures, sectors, expectations, and exposure to uncertainty. The move towards lower rates in 2024 began another adjustment, but did not immediately recreate the conditions of the earlier period.

The investment effects of ECB policy are therefore better understood through the full transmission process than through the policy rate alone. The 2022–2024 episode shows how a rate increase can become a wider change in the cost, availability and expected future availability of finance. Firms then respond according to their debt structure, size, sector, balance-sheet strength and expectations. That is the central relationship between the monetary-policy decision and the investment decision examined throughout this thesis.

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