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Access to Finance for SMEs in Albania under Monetary Tightening

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BCC | Bilateral Assistance & Capacity Building for Central Banks

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Abstract

Small and medium-sized enterprises (SMEs) are vital to Albania's economy but face significant financing challenges amid monetary tightening. Utilizing firm-level data from 2022–2023, this study documents that the abrupt interest rate increases in 2022 prompted a rise in alternative financing use, particularly among younger and smaller firms, alongside greater reliance on internal funds as an immediate coping mechanism. In contrast, the more gradual tightening in 2023 led to a broad-based decline in both alternative and internal financing, indicative of constrained liquidity and persistent financial pressures across firms. Notably, heterogeneity in internal financing adjustments was limited, with younger firms showing no statistically significant difference from older firms, except for those experiencing tighter bank credit conditions, who further curtailed internal funding. These findings underscore the varied responses of SMEs to phased monetary tightening and emphasize the need for targeted policy measures to support firm resilience over time.

Keywords: SMEs, Access to Finance, Monetary Tightening, Firm Characteristics

JEL: **E52, G21, G32, L25**

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I. Introduction

In the wake of the global pandemic, the world economy has faced multiple challenges including supply chain disruptions, reduced demand, the war in Ukraine, and heightened geopolitical tensions. These factors triggered a resurgence of inflation globally, with rates reaching double digits in many countries. In response, central banks worldwide tightened monetary policy by raising interest rates to curb inflation and restore price stability. For example, the European Central Bank (ECB) increased its marginal lending facility rate from 0.75% in July 2022 to 4.75% by September 2023, while the Bank of England raised its policy rate from 0.25% in February 2022 to 5.25% in the same period.

Similarly, in response to rising inflation, which peaked at 7.8% in October 2022 (Figure 6, Appendix), the Bank of Albania significantly raised its base interest rate from 0.5% in June 2022 to 2.75% by the end of 2022, and further to 3.25% by November 2023. This sharp increase aimed to curb inflation and stabilize prices. Data suggest this monetary tightening translated into restrictive financial conditions particularly for small and medium-sized enterprises (SMEs). On average, lending rates for SMEs increased by approximately one percentage point, with peaks of 2.5 and 2.3 percentage points in 2022 and 2023, respectively (Figure 7, Appendix). Additionally, banks tightened their credit standards in 2022, which disproportionately affected SMEs (Figure 8, Appendix; Bank of Albania Lending Survey, 2025).

While monetary tightening serves to control inflation, it also poses significant challenges to the financial stability of non-financial firms, especially SMEs, which often face greater obstacles in accessing finance. In Albania, SMEs represent nearly 90% of all businesses and are vital for employment, income generation, and innovation (INSTAT, 2025). Given the underdeveloped capital markets in Albania, SMEs rely heavily on bank financing for their operations and growth (World Bank, 2022). Consequently, tighter monetary conditions and rising borrowing costs threaten SME financial resilience, potentially limiting their investment and expansion capacities.

Theoretically, the impact of monetary tightening on SME financing behavior can be understood through frameworks such as the pecking order theory (Myers & Majluf, 1984) and the financial constraints theory (Fazzari et al., 1988). According to the pecking order theory, firms prioritize internal funds, then debt, and finally equity, especially when external financing becomes costly or difficult to access. Financial constraints theory suggests that younger and smaller firms, which often have limited collateral and credit histories, face stronger external financing frictions and thus rely more heavily on internal or alternative funds during monetary shocks.

This paper empirically examines how these theoretical expectations play out in Albania's SME sector under recent monetary policy tightening. Using firm-level data from the Bank of Albania's 2022–2023 Access to Finance Surveys which cover over 1,900 firms the study investigates how

firm characteristics (such as size, age, profitability and perceived credit risk) influenced their use of alternative and internal financing sources amid tightening financial conditions.

The findings reveal a two-phase adjustment in SME financing behavior. In 2022, the abrupt and unanticipated interest rate hikes triggered an increased use of alternative financing, particularly among younger and smaller firms. This behavior aligns with the expectation that financially constrained firms will seek non-bank sources when credit conditions deteriorate. However, in 2023, as monetary tightening continued at a slower but persistent pace, firms broadly reduced their reliance on both alternative and internal financing. This contraction appears to reflect cumulative financial pressures and declining liquidity buffers, rather than a substitution from external to internal funding. While alternative financing showed greater heterogeneity in its decline especially among younger and low-turnover firms the reduction in internal funding was largely broad-based. Notably, only firms perceiving tighter credit conditions were significantly less likely to use internal funds in 2023, suggesting that continued stress had eroded their financial buffers.

Although this analysis is based on a relatively short two-year panel, it offers timely insights into SME financing behavior during periods of monetary tightening. Future research using longer time series spanning at least three to five years could further explore the persistence of these financing shifts and assess their broader impact on firm performance and resilience. Longer datasets would also allow for more rigorous causal inference techniques, helping to deepen our understanding of monetary transmission in financially constrained economies.

The remainder of the paper is structured as follows: Section 2 provides a brief review of the literature on SME access to finance. Section 3 describes the data and empirical methodology. Section 4 presents the results, and Section 5 concludes.

II. Literature review

Small and Medium-sized Enterprises (SMEs) play a pivotal role in driving economic growth, fostering innovation, and generating employment, particularly in developing economies like Albania. SMEs represent the largest segment of businesses in Albania, contributing significantly to employment and economic output (Instat, 2025). Despite their importance, access to finance remains a critical barrier that limits their ability to invest, innovate and expand. This challenge is heightened during periods of economic uncertainty or monetary tightening, as SMEs are highly reliant on bank lending. Tightened credit conditions, particularly during restrictive monetary policies, limit their access to finance, curbing their growth potential (EBI, 2016; World Bank, 2020).

A significant factor contributing to SMEs' financing difficulties is their size and limited access to capital markets. This results in a heavy reliance on bank loans (Bougheas et al., 2006; Kashyap &

Stein, 1994). Empirical research consistently shows that smaller, younger, and less-established firms face more severe financing constraints compared to their larger counterparts (Beck et al., 2006; Coluzzi et al., 2009; Ferrando & Griesshaber, 2011). These constraints are typically linked to factors such as firm size, age, turnover, ownership structure, export status, and collateral availability. Smaller firms are particularly vulnerable due to their limited access to collateral and weaker credit histories, making it harder for them to secure external financing (Holton et al., 2014). These issues intensify during economic stress, when financial markets become more restrictive.

SMEs are particularly susceptible to credit constraints during economic instability or monetary tightening. According to the broad credit view (Gertler & Gilchrist, 1993), monetary policy affects SMEs' access to finance not only through the interest rate channel but also through the credit supply channel. When monetary policy tightens, banks especially those with weaker balance sheets reduce their lending, disproportionately affecting smaller, bank-dependent firms (Kashyap et al., 1993; Gertler & Gilchrist, 1994). As a result, SMEs face higher borrowing costs, stricter lending standards, and reduced access to credit, all of which hinder their ability to expand and grow.

Credit channel theory suggests that monetary policy affects borrowing costs and credit availability through the interest rate channel and the bank lending and balance sheet channels (Bernanke & Gertler, 1995; Kashyap & Stein, 2000). During periods of monetary tightening, smaller, younger, and more bank-dependent SMEs are more vulnerable to reduced access to credit (De Haan and Sterken (2006). These firms rely heavily on bank loans as their primary means of financing and face more stringent credit conditions when monetary policy tightens. In contrast, larger firms may have access to alternative financing options, such as commercial paper, making them less sensitive to monetary contractions. Results of De Haan and Sterken (2006) highlight the importance of relationship lending in mitigating credit constraints.

Market frictions, particularly information asymmetries, exacerbate SMEs' financing challenges. SMEs often lack the strong reputations and resources necessary to access efficient financing mechanisms, such as public debt issuance. Although banks help mitigate these issues through relationship lending, during periods of monetary tightening, banks tend to reduce their credit supply, deepening financial distress for SMEs. As a result, SMEs, particularly those heavily dependent on bank loans, must increasingly rely on alternative financing sources such as internal funds, trade credit, informal lending, private equity, and peer-to-peer lending (Petersen & Rajan, 1997; Meltzer, 1960).

The financial accelerator mechanism (Bernanke et al., 1996) reinforces this process. Under tighter monetary policy, worsening SME balance sheets reduce their creditworthiness, which in turn increases financing constraints and magnifies the adverse effects of monetary tightening.

In this context, two channels of the credit view become especially relevant: The balance sheet channel illustrates how monetary tightening impairs firm balance sheets, reducing creditworthiness and amplifying interest rate effects. The bank-lending channel emphasizes how

restrictive monetary policy constrains banks' liquidity and loan supply, disproportionately affecting bank-dependent SMEs.

In bank-based economies, long-term relationships between banks and firms can partially protect SMEs from monetary shocks by reducing information asymmetries. However, during periods of monetary tightening, these relationships are often insufficient to protect SMEs from reduced credit availability.

During periods of monetary tightening, SMEs often shift towards alternative financing mechanisms as traditional bank credit becomes more expensive or less accessible. Early studies by Meltzer (1960), Petersen and Rajan (1997), and Nilsen (1994) found that SMEs tend to substitute conventional bank loans with internal funds, trade credit, and informal lending. The Pecking Order Theory (Myers & Majluf, 1984) supports this substitution pattern, suggesting that firms prefer using internal finance first, followed by debt, and only seek external equity when absolutely necessary.

The dynamics of alternative financing vary across firms. For example, larger firms can access capital markets by issuing bonds or commercial paper. In contrast, SMEs lack direct access to these markets and must rely on internal funds or informal credit sources. Those with strong internal cash flows or diversified financing relationships are better positioned to navigate tighter monetary conditions. In contrast, those with weak liquidity face greater risks, such as investment cutbacks or market exit (Kashyap et al., 1993; Becker & Ivashina, 2014).

Trade credit, a crucial alternative financing source, becomes particularly important during periods of monetary tightening. Studies by Meltzer (1960) and Schwartz (1974) found that trade credit often serves as a substitute for bank credit, especially for smaller firms that are more financially constrained. In bank-based financial systems, larger firms extend trade credit to smaller, constrained firms, effectively acting as a financial intermediary (Petersen & Rajan, 1997; Nilsen, 2002).

In response to credit tightening, SMEs often turn to alternative sources of finance, such as trade credit, leasing, equity injections, and government support, which act as partial substitutes for bank loans, especially when financial constraints intensify (Casey & O'Toole, 2014; Kapoor et al., 2025). For instance, constrained SMEs increase reliance on trade credit and internal funds during restricted bank lending periods (Casey & O'Toole, 2014), while firms more vulnerable to monetary shocks often turn to informal financing channels (Kapoor et al., 2025). The effectiveness of these alternatives is influenced by firm-specific characteristics. Smaller, financially weaker firms, particularly family-owned ones, are more inclined to substitute bank and trade credit with non-traditional financing (Jin et al., 2021). The ability of SMEs to turn to alternative financing is also influenced by the institutional environment. In countries with underdeveloped financial systems or weak legal frameworks, SMEs tend to rely more heavily on informal financing mechanisms. These firms, particularly family-owned businesses, are more likely to substitute bank and trade

credit with non-traditional sources, such as informal lending or equity injections (Allen et al., 2012; Jin et al., 2021).

Despite the extensive literature on financing constraints faced by small and medium-sized enterprises (SMEs), there is limited research on the impact of monetary policy on SMEs in Western Balkan countries, particularly in Albania. Regional studies have mostly examined the factors associated with financial constraints among SMEs (e.g., Moder and Bonifai, 2017), often using survey data from the World Bank, and focusing on how limited access to finance hinders overall growth.

Existing studies have largely focused on the transmission channels of monetary policy through the banking sector, concentrating almost exclusively on the supply side. In the case of Albania, research has primarily analyzed how monetary policy influences banks' lending behavior (Vika & Suljoti, 2008; Shijaku, 2018) without adequately addressing the demand side. Specifically, little attention has examined how SMEs adjust their financing strategies in response to tighter credit conditions.

This study aims to address this gap by investigating the effects of the sharp monetary policy tightening in Albania, where the policy rate increased from 0.5% to 3.25% between 2022 and 2023on SMEs' reliance on alternative financing sources. It further explores how these effects vary according to firm-specific characteristics, such as size, age, ownership structure, financial constraints, and credit risk.

By shifting the focus to the demand side of SME financing, this research provides new insights into the adaptive strategies of Albanian SMEs under restrictive monetary conditions. The findings will offer valuable implications for policymakers seeking to enhance SME resilience and promote financial inclusion in a tightening economic environment.

III. Data and methodological approach

This section presents an overview of the survey on firms' access to finance in Albania, developed by the Bank of Albania. It describes the firm-level data derived from the survey, which serve as the basis for constructing both endogenous and exogenous indicators used in the analysis. The section then outlines the methodological approach employed to test the study's hypotheses.

Data

In 2023, the Bank of Albania launched the first wave of the Access to Finance Survey, targeting firms operating in Albania, with a primary focus on small and medium-sized enterprises (SMEs). The objective of this survey is to gather detailed information on firms' financing needs, the

conditions under which they access finance, their perceptions of key operational challenges, the financial instruments they have used or applied for, and their expectations regarding the future availability of financing and other related aspects. Additionally, the survey collects a wide range of firm-level characteristics, including size, age, sector of activity, ownership, annual turnover, assessment of overall business performance, labor costs, investment activities, and expectations concerning future turnover and employment.

This study uses data from two rounds of the Access to Finance Survey conducted in 2023 and 2024. It should be noted that the collected information refers to the firms' overall financial situations, financing conditions, financing sources, main challenges, and financing costs during the previous year (i.e., 2022 and 2023), while the questions regarding expectations reflect a medium-term perspective. In each wave, INSTAT randomly selected 1,200 enterprises to ensure national representativeness with respect to firm size and sectoral distribution. Firms are categorized by size as follows: micro (1–9 employees), small (10–49 employees), medium (50–249 employees), and large (250+ employees). While the survey primarily focuses on SMEs, which comprise approximately 90% of the sample, it also includes large enterprises (10%) to enable comparisons and enrich the analysis. The survey covers firms from major economic sectors, including industry, construction, trade, and services. Firms in agriculture, financial services, and public administration were excluded due to their limited representation in the business registry. The final dataset consists of 1,925 firms from an initial sample of 2,400, reflecting a 20% non-response rate due to refusals or unreachable contacts. The 2023 wave includes 944 firms, and the 2024 wave includes 981. The dataset is structured as a two-year cross-section, with some firms appearing only once and others appearing in both waves.

Table 9 in the Appendix presents key firm characteristics, including age, size, ownership, turnover, and sector of activity, for the total sample and for each survey round. Regarding firm age, approximately 53% of firms have been operational for over 10 years, 21% for 5–10 years, 15% for 2–5 years, and 8% are newly established (less than 2 years). This distribution remains relatively stable across both waves, with only minor changes in the proportion of younger firms. In terms of size, the sample remains consistent: micro firms account for 33%-40%, small firms for 31%, medium firms for 26%, and large firms for 10%. Ownership data show that 65% of firms are individually owned, 16% are family-owned, and 19% fall into other categories. Regarding annual turnover, 52% of firms report revenues below €500,000; 15%, between €500,000 and €1 million; 9%, between €1 million and €2 million; and 24%, exceeding €2 million. Comparing both waves, the share of low-turnover firms declined in 2024, while the share of firms in the higher turnover brackets increased.

For this study, the Access to Finance Survey provides valuable firm-level data on the use and perceived importance of various financial instruments, which are necessary for developing our key indicators. The survey distinguishes between several financing methods, such as retained earnings, grants, subsidized bank loans, bank overdrafts, credit lines, credit card overdrafts, bank loans, trade

credit, informal business loans (from informal sources, family, related businesses, or shareholders), leasing, hire purchase, factoring, debt securities, subordinated loans, and equity financing.

To analyze how firms adjust their financing strategies in response to monetary policy tightening, we use these data to construct our primary dependent variable, which captures the extent to which firms rely on alternative financing instead of traditional bank credit. We define a binary indicator, AFin, following Kapoor et al. (2025) and Casey and Toole (2014). A firm uses AFin when it did not use or apply for a bank loan in the past year, using at least one alternative source of finance instead. Examples include internal funds, overdrafts, trade credit, informal loans, market-based financing, grants, or subordinated loans.

In addition to this primary indicator, we constructed an alternative measure called InFin, which captures exclusive reliance on internal financing. This binary variable is equal to one if the firm relied solely on internal funds during the previous year without accessing or applying for any external financing. This allows us to explore whether firms moved away from bank credit and, specifically, whether they turned to internal resources as a coping strategy in response to tighter credit conditions.

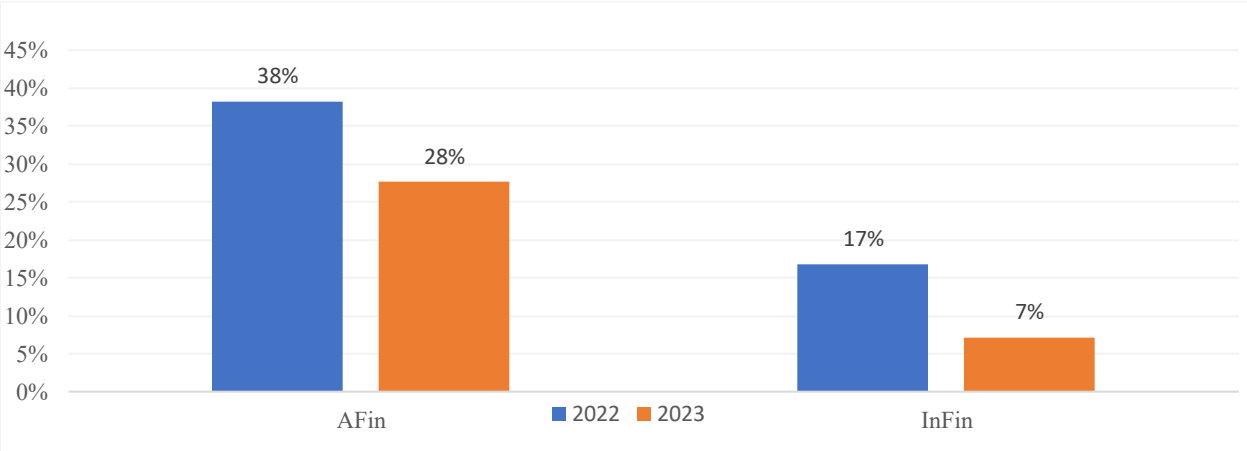
To examine whether firms relied exclusively on alternative financing in response to monetary tightening, we analyzed responses to two key survey questions. The first asks firms to evaluate the importance of different financing sources, such as retained earnings, grants, overdrafts, bank loans, trade credit, informal loans, leasing, subordinated loans, and equity, for both past and future use. Firms that consider a financing source to be important are then asked if they used it in the previous year.

The data (figure 9, in Appendix) show that, on average, 43% of firms consider internal funds to be an important source of financing, followed by bank loans (34%), credit lines (30%), and equity (26%). Usage patterns generally mirror these perceptions, with internal funds, bank credit, overdrafts, and equity being the most utilized, while other instruments are used less frequently. Comparing both survey waves, firms in 2023 appear to have placed greater emphasis on internal funds, while the usage of other financing types remained relatively stable, with only minor variations (figure 10, in Appendix).

As noted earlier, we constructed an indicator of alternative financing based on firms' reported use of specific financial instruments. Data presented in Figure 1 show that in 2022, 38% of firms relied exclusively on alternative financing, while in 2023, this share declined to 28%. This pattern suggests that during 2022, when the interest rate increase was both sharp and unexpected many firms shifted toward alternative financing sources in response to tighter credit conditions. However, in 2023, although monetary conditions remained restrictive, the pace of interest rate increases slowed. The decline in the use of alternative financing to 28% may indicate that firms began to adjust their financing strategies over time, possibly due to depleted internal resources or increased reliance on traditional bank credit as financial conditions stabilized, albeit at tighter levels.

With regard to internal financing, 17% of firms relied solely on internal sources in 2022, but this share dropped significantly to 7% in 2023. These findings suggest that although firms initially shifted toward alternative financing in response to monetary tightening, the intensity of this shift particularly diminished in the second wave. The importance of retained earnings as a financing source declined, while other alternative sources gained only limited traction.

Figure 1: The use of Alternative financing



Source: Bank of Albania, Access to Finance Survey, authors calculations

Table 1 presents a summary of the key indicators used in the study, based on survey data from 2022 and 2023. The data show no significant changes in the composition of firms between the two rounds in terms of age, size, ownership structure, or sector of activity. The majority of surveyed firms are well-established, with more than 10 years of operational experience. In terms of size, micro and small enterprises dominate the sample, followed by medium-sized and large firms. The share of large firms remained stable across both years. Sectoral composition also remained consistent, with most firms operating in the trade and services sectors.

In terms of annual turnover, the share of firms reporting revenues below €500,000 declined in 2023, while the proportion of firms with higher revenues increased slightly. Financing conditions showed modest improvement in 2023 compared to 2022. This was reflected in smaller average loan sizes and more optimistic expectations regarding future credit availability. Operational costs, including labor expenses, also decreased in 2023 relative to the previous year.

To assess firm-level credit quality, we apply the methodology of Calabrese et al. (2021) and Kapoor et al. (2025), constructing a binary indicator, Safe firm based on self-reported profit trends and debt-to-asset ratios. A firm is classified as "safe" if it reports stable or increasing profits along with stable or declining debt to asset ratios. Firms with decreasing profits and/or increasing debt ratios are categorized as moderate to high risk. The findings indicate a general improvement in credit quality at the firm level in 2023 compared to 2022.

Table 1: Summary Statistics

Variable	Mean (2022)	Mean (2023)	N (2022)	N (2023)	P-value
AFin	.382	.276	944	981	0
IFin	.168	.071	944	981	0
AGE	1.787	1.79	907	920	.9479
Size	1.766	2.038	883	878	0
Firm Sector	2.98	2.908	916	926	.2463
Increased fix investment	.206	.274	806	763	.0016
Increased profit	.64	.587	905	904	.0221
Increased labor, other cost	.809	.748	913	923	.0014
Loan size decreased	.06	.039	517	517	.1144
Interest rate increased	.583	.414	575	565	0
Safe	.337	.454	914	923	0

Source: Bank of Albania, Access to Finance Survey, authors calculations

Methodology

As outlined at the outset, the objective of this analysis is to examine whether firms increased their reliance on alternative sources of financing during the monetary policy-tightening period in 2022. To address this, we estimate a pooled probit model to assess the likelihood that firms turned to alternative financing sources, such as internal funds, trade credit, and grants during this period of constrained credit conditions. Our baseline model is specified as follows:

$$Pr(\text{AFin}_i = 1) = \Phi(\alpha + \beta * D_{2023} + \gamma FirmC_i + \delta Q_i)$$

- AFin_i is a binary outcome equal to 1 if firm i reported using or applying for alternative financing sources and did not use or apply for a bank loan.
- D_{2023} is a dummy variable equal to 1 for observations from the year 2023, capturing the impact of monetary policy tightening relative to 2022.
- $FirmC_i$ is a vector of firm-level characteristics, including size, age, profitability, sector affiliation, turnover and investment activity. These characteristics are derived from retrospective survey questions referring to the previous fiscal year.
- Qi, is a vector of indicators related to firms' financial health and risk exposure, including turnover performance cost pressures, and credit quality.
- $\Phi(.)$, denotes the cumulative distribution function of the standard normal distribution.

To better account for firm-level heterogeneity and isolate the effects of monetary policy shocks on financing decisions, we incorporate a comprehensive set of control variables that reflect firm characteristics, financial needs, and creditworthiness.

Consistent with the work of Petersen and Rajan (1994, 1995), we control for firm size and firm age, which serve as proxies for a firm's access to external finance and its growth trajectory. While

these attributes may not directly dictate financing structure, they are important indicators of a firm's ability to navigate constrained financial environments.

Profitability is included as a binary variable equal to 1 if the firm reported an increase in profits in the previous year, serving as a proxy for operational performance and potential internal financing capacity. Annual turnover is used to measure business scale, while industry sector fixed effects control for sector-specific dynamics.

To capture investment behavior, we include a dummy variable equal to 1 if the firm reported increased fixed investment. We also account for cost pressures via a binary indicator equal to 1 if the firm experienced rising labor or non-labor operational costs during the survey period.

For assessing credit risk, we construct a binary indicator of firm-level credit quality based on the methodology proposed by Calabrese et al. (2021) and Kapoor et al. (2025). Firms are categorized either as "safe" if they report stable or rising profits and a stable or declining debt-to-asset ratio. All other firms are classified as having moderate to high credit risk.

To evaluate firms' perceptions of credit conditions, we include reported changes in interest rates and loan sizes. These variables reflect firms' experiences with the cost and availability of external credit and are particularly relevant for understanding the shift toward alternative financing under restrictive monetary conditions.

Furthermore, we explore firm heterogeneity in the use of alternative financing during the monetary policy tightening by estimating the following extended model:

$$Pr(\text{AFin}_i = 1) = \Phi(\alpha + \beta_1 * D_{2023} + \lambda D_{2023} xFirm\_C_i + \gamma X_i + \delta Q_i) \quad (2)$$

Our main variable of interest is the coefficient $\boldsymbol{\lambda}$ on the interaction term between the monetary policy indicator and firm-level characteristics. This interaction allows us to investigate how the effects of monetary tightening vary across different types of firms in terms of their likelihood to use alternative financing sources.

IV. Results

Table 2 presents the results from probit regression models, where the dependent variable is the firms' use of alternative sources of financing. The analysis focuses on how this behaviour evolved across the two survey waves (2022 and 2023). The five model specifications include different combinations of firm characteristics and financial indicators, such as firm performance, credit risk, and perceptions of financing conditions. Columns (1) to (3), Table 2 incorporate firm-level attributes such as size, age, sector, and annual turnover, while the last two columns also include indicators related to credit risk and perceived lending conditions.

Our analysis begins by assessing whether there was a significant change in the use of alternative financing in 2023 relative to 2022, a year marked by the sharpest and most abrupt monetary policy

tightening (from 0.5% to 2.75%). Despite monetary conditions remaining restrictive in 2023, the pace of tightening was more moderate (from 2.75% to 3.25%). Across all five model specifications, the coefficient on the 2023 dummy variable (D2023) is negative and statistically significant, indicating a decline in the likelihood of firms using alternative financing sources in 2023 compared to 2022. This might suggests that firms may have used alternative finance more intensively in 2022 as an initial buffer in response to abrupt tightening, as noted by Beck et al. (2008) and Carbo-Valverde et al. (2016). By 2023, these buffers may have been depleted, or firms may have adjusted structurally, reducing reliance on external funding sources. This behaviour could reflect a cumulative adaptation to ongoing but evolving financial pressures.

The average marginal effects (Table 10, Appendix) support this finding, showing a lower probability of relying on alternative financing in 2023. Faced with a rapid and considerable monetary contraction in 2022, firms likely turned to alternative financing as an immediate buffer to meet their funding needs. However, as the tightening continued, albeit at a slower pace firms appear to have reduced their reliance on alternative funding sources. This shift may reflect either the exhaustion of accessible alternative instruments or a cumulative adaptation to persistent but evolving financial pressures.

We also examine how firms with different characteristics respond to changes in monetary conditions. The results indicate that younger firms (2–5 years old), as well as small (€500,000–1 million turnover) and medium-sized (€1–2 million turnover) enterprises, are significantly more likely to rely on alternative financing sources compared to larger firms, with marginal effects ranging from 7% to 12% (see Table 10, Appendix). This finding highlights their greater sensitivity to credit constraints and their tendency to seek non-bank funding when traditional lending becomes less accessible. These patterns support the literature suggesting that limited financial histories and weaker institutional relationships reduce younger and smaller firms' ability to absorb credit shocks or substitute between financing sources, particularly under tighter monetary conditions.

Sectoral analysis further reveals that firms in the trade and services sectors are less likely to use alternative financing compared to those in other industries. This may reflect the historically stronger dependence of these sectors on bank financing, suggesting that even in the face of tightening monetary conditions, these firms continue to rely predominantly on formal bank credit and adjust less toward alternative funding channels.

Additionally, the results presented in Column 4, Table 2 indicate that firms classified as Safe or financially sound have a higher probability of using alternative financing compared to potentially more vulnerable firms (see Table 10, Appendix, for average marginal effects). This finding suggests that financially stronger firms, during a period of tighter financial conditions and heightened uncertainty, were more likely to rely on alternative sources of funding to mitigate the impact of higher interest rates, despite their relatively better financial positions.

In the final column, Table 2 we include firms' perceptions of financial conditions, specifically their expectations regarding rising interest rates and reduced availability of bank credit. The results show that firms perceiving a reduction in the supply of bank loans are significantly more likely to turn to alternative financing to meet their funding needs. In contrast, firms expecting an increase in interest rates are 7% less likely to use alternative finance (see Table 10, Appendix, for average marginal effects). This may reflect that such firms have more established relationships with banks and continue to rely on conventional lending possibly benefiting from preferential conditions or it could indicate limited access to non-bank financing options or institutional stickiness in lender relationships (Petersen & Rajan, 1994).

Table 2: Probit Model Results for Alternative Financing

	(1)	(2)	(3)	(4)	(5)
D2023	-0.283***	-0.294***	-0.295***	-0.413***	-0.504***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Age (ref: More than 10 years)					
5 to 10 years	0.044	0.058	0.045	0.109	0.149
	(0.583)	(0.468)	(0.579)	(0.343)	(0.271)
2 to 5 years	0.194**	0.199**	0.205**	0.202	0.136
	(0.036)	(0.031)	(0.029)	(0.111)	(0.380)
Less than 2 years	-0.026	0.019	0.001	-0.043	-0.022
	(0.835)	(0.881)	(0.996)	(0.813)	(0.928)
Firm Turnover (ref. More than 2M euro)					
Less than 500k euro	0.107		0.131	0.115	-0.003
	(0.223)		(0.205)	(0.376)	(0.982)
500k to 1M euro	0.196*		0.178	0.209	0.134
	(0.075)		(0.125)	(0.132)	(0.390)
1 to 2M euro	0.323**		0.310**	0.356**	0.281
	(0.014)		(0.021)	(0.033)	(0.140)
Firm Sector (Ref: Construction)					
Industry	-0.115	-0.129	-0.101	-0.135	-0.110
	(0.240)	(0.195)	(0.317)	(0.301)	(0.468)
Trade	-0.119	-0.115	-0.099	-0.299**	-0.264*
	(0.215)	(0.230)	(0.311)	(0.022)	(0.082)
Services	-0.162*	-0.121	-0.117	-0.145	-0.246
	(0.099)	(0.220)	(0.244)	(0.291)	(0.147)
Others	-0.097	-0.057	-0.043	-0.129	-0.108
	(0.363)	(0.591)	(0.693)	(0.363)	(0.533)
Firm Size (ref: Large)					
Micro		-0.033	-0.077	0.071	0.215
		(0.793)	(0.595)	(0.704)	(0.325)
Small		0.149	0.083	0.065	0.182
		(0.219)	(0.540)	(0.705)	(0.348)
Medium		-0.004	-0.068	-0.152	-0.135
		(0.974)	(0.611)	(0.354)	(0.463)
Increased profit		0.101*	0.091	-0.053	-0.112
		(0.098)	(0.143)	(0.575)	(0.332)
Safe				0.190**	0.177
				(0.045)	(0.125)
Increased fix investment				-0.079	-0.105
				(0.461)	(0.417)
Increased lb cost				0.230*	0.299*
				(0.094)	(0.077)
Increased Interest Expenditure				0.047	0.080
				(0.615)	(0.472)
Decreased loan size					0.452*
					(0.067)
Increased interest rate					-0.207**
					(0.045)
Cons	-0.297***	-0.290**	-0.354**	-0.463**	-0.435
	(0.003)	(0.033)	(0.014)	(0.037)	(0.108)
Pseudo R^2	0.016	0.018	0.020	0.041	0.059
Observations	1754	1761	1700	995	727

*Note: Clustered SE on firms level, p-values in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$*

Table 3 analyzes the interaction between monetary policy tightening captured by the variable D2023 and key firm characteristics, offering insight into how firms' financing behavior evolved across the two distinct phases of policy adjustment. In 2022, when interest rate hikes were both sharp and largely unexpected, younger firms (aged 2 to 10 years) were significantly more likely to turn to alternative financing compared to older firms (over 10 years), as shown in Table 3, Columns 2 and 3. This shift likely reflects a reactive strategy to cope with the sudden rise in borrowing costs.

A similar pattern was observed among SMEs with annual turnover between €500,000 and €2 million (Table 3, Column 4), which relied more heavily on non-traditional sources during the abrupt monetary shock. However, by 2023, when the pace of tightening slowed from 2.75% to 3.25% these same firms reduced their use of alternative finance, indicating a behavioral adjustment. This may reflect an adaptation to persistently tight but more predictable financial conditions, a reassessment of external funding needs, or a reversion to bank credit despite higher costs.

Firms categorized as financially sound either due to increased profits or low credit risk (Table 3, Column 5) also adjusted their financing strategies. In 2022, they were more likely to use alternative finance, but in 2023, their use declined, possibly due to a preference for traditional banking channels and greater resilience to restrictive financial conditions.

Perceptions of the financial environment further influenced firm behavior. Notably, firms anticipating an increase in interest rates exhibited a statistically significant decrease in alternative financing use in 2023 (Table 3, Column 6), suggesting continued reliance on traditional credit channels. Conversely, firms expecting reduced credit availability showed a tendency to use more alternative financing, although this effect was not statistically robust.

Finally, while firm size (measured by employee count) did not significantly affect behavior in response to monetary policy (Table 3, Column 1), other dimensions such as age, turnover, credit quality, and perception emerged as critical factors. Overall, the findings highlight that firms' financing responses were shaped not only by the direction of monetary policy, but also by its speed, timing, and perceived persistence, with 2022 marked by reactive adjustments and 2023 by more deliberate recalibration. The average marginal effect for the interaction results are shown in Table 11 in appendix.

Table 3: Monetary tightening and the use of alternative financing (interaction results)

	(1)		(2)		(3)		(4)		(5)		(6)		(7)
	Size		Age		Profit		Turnover		Credit quality		Decrease loan size		Increase interest rate
D2023	-0.785**	D2023	-0.318**	D2023	-0.272*	D2023	-0.082	D2023	-0.174	D2023	-0.534***	D2023	-0.248*
	(0.014)		(0.010)		(0.074)		(0.662)		(0.318)		(0.000)		(0.070)
Firm Size (Ref: Large)		Firm Age (Ref: More than 10 years):		Increased profit	0.120	Firm Turnover (Less than 500k euro	0.285	Safe firm	0.452***	Decreased loan size	0.199	Increased interest rate	0.069
Micro	0.030	Firm Age (5 to 10 years)	0.374**		(0.461)		(0.144)		(0.007)		(0.539)		(0.634)
	(0.918)		(0.046)			500k to 1M euro	0.444**						
Small	0.155	2 to 5 years	0.440**				(0.046)						
	(0.542)		(0.048)			1 to 2M euro	0.624**						
Medium	-0.369	Less than 2 years	0.211				(0.038)						
	(0.145)		(0.528)										
D2023x Firm Size (Micro)	0.393	D2023x Firm Age (5 to 10 years)	-0.427*	D2023x Firm Increased profit	-0.424**	D2023x Firm Turnover (Less than 500k euro)	-0.585**	D2023x Safe	-0.496**	D2023x Decreased loan size	0.580	D2023x Increased interest rate	-0.557***
	(0.304)		(0.086)		(0.040)		(0.016)		(0.021)		(0.232)		(0.006)
D2023x Firm Size (Small)	0.100	D2023x Firm Age (2 to 5 years)	-0.575**			D2023x Firm Turnover (500k to 1M euro)	-0.561*						
	(0.782)		(0.045)				(0.053)						
D2023x Firm Size (Medium)	0.507	D2023x Firm Age (Less than 2 years)	-0.493			D2023x Firm Turnover (1 to 2M euro)	-0.609						
	(0.177)		(0.313)				(0.114)						
Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes
Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes
Constant	-0.296	Constant	-0.519*	Constant	-0.549**	Constant	-0.668**	Constant	-0.601**	Constant	-0.420	Constant	-0.571**
	(0.326)		(0.056)		(0.047)		(0.021)		(0.034)		(0.120)		(0.039)
Pseudo R^2	0.063	Pseudo R^2	0.065	Pseudo R^2	0.063	Pseudo R^2	0.066	Pseudo R^2	0.064	Pseudo R^2	0.060	Pseudo R^2	0.066
Observations	727	Observations	727	Observations	727	Observations	727	Observations	727	Observations	727	Observations	727

*Note: Clustered SE on firms level, p-values in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01*

Average marginal effects (Figure 2) reveal a significant shift in firms' financing behavior between 2022 and 2023. The probability of using alternative financing declined by 18 percentage points from 43% in 2022, when the monetary policy shock was sharp and unexpected, to 25% in 2023, amid a more gradual but persistent tightening cycle. This decline reflects not only firms' immediate reactions to the abrupt policy shift in 2022, but also a broader behavioral adjustment in response to sustained restrictive financial conditions. Despite the drop, one in four firms continued to rely on alternative financing, underscoring the resilience and ongoing relevance of these channels as buffers when access to traditional credit is limited.

Figure 2: Predicted probability of using alternative financing.

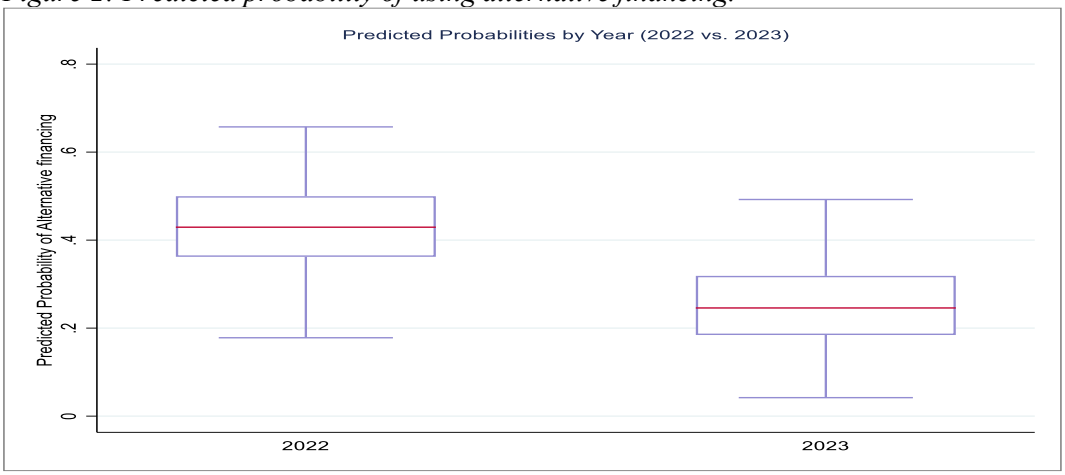


Figure 3 further disaggregates this behavior by firm characteristics. Younger firms (aged 2–10 years) and SMEs (annual turnover between €500,000 and €2 million) initially increased their use of alternative financing during the sharp rate hikes in 2022, likely as a coping mechanism to offset tighter bank credit. This pattern aligns with financial constraints theory, which predicts that smaller and younger firms, typically with limited access to bank credit are more vulnerable to monetary tightening and thus turn to non-traditional financing channels. However, by 2023, these firms showed the strongest behavioral adjustment, substantially reducing their reliance on alternative sources. This suggests an adaptive learning process, where firms optimize their financing mix as uncertainty diminishes and they regain partial access to traditional funding or reduce their financing needs.

Financially sound firms, including those expecting rising profits or considered "safe," also exhibited elevated use of alternative financing in 2022, likely employing these channels as a shock absorption strategy (Figure 4). Their reduced reliance in 2023 implies a strategic reversion to conventional bank credit once monetary conditions stabilized, despite elevated rates. This reflects the heterogeneous impact of monetary policy, where firm-specific characteristics like credit quality and profitability influence financing responses and vulnerability.

The results underscore the role of firms' expectations in shaping financing decisions. Firms anticipating further interest rate increases in 2023 were less likely to use alternative financing, indicating a sustained preference for traditional bank lending despite rising costs. This highlights the importance of clear monetary policy communication and forward guidance in influencing firm behavior and managing financial market reactions.

Overall, the findings demonstrate how monetary policy tightening affects firms heterogeneously, influencing their financing choices in complex ways. The initial surge in alternative financing by younger and smaller firms reflects financial constraints and precautionary motives, while subsequent moderation suggests behavioral adaptation and strategic financing optimization. Policymakers should consider these heterogeneous responses when designing monetary interventions to mitigate unintended credit access disruptions, particularly for vulnerable firm segments.

Figure 3: Firm heterogeneity analysis (age, turnover)

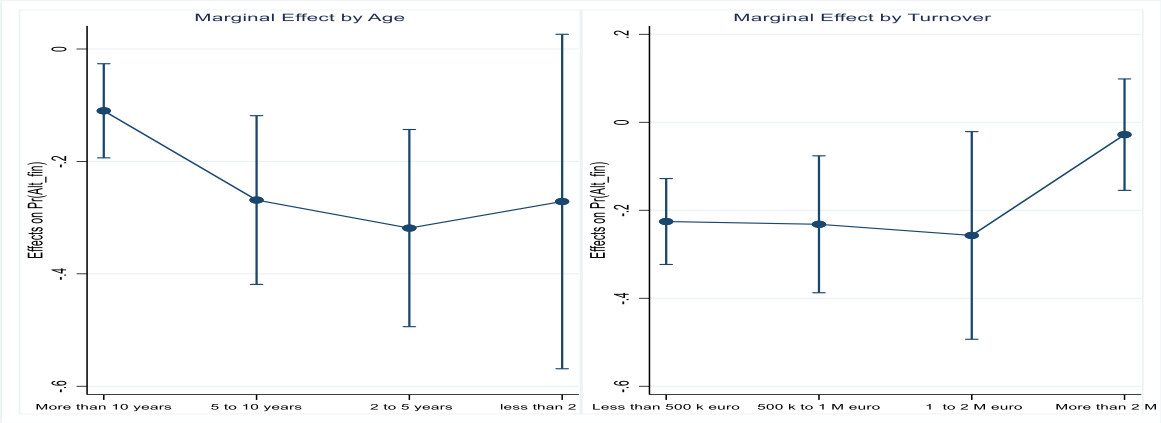
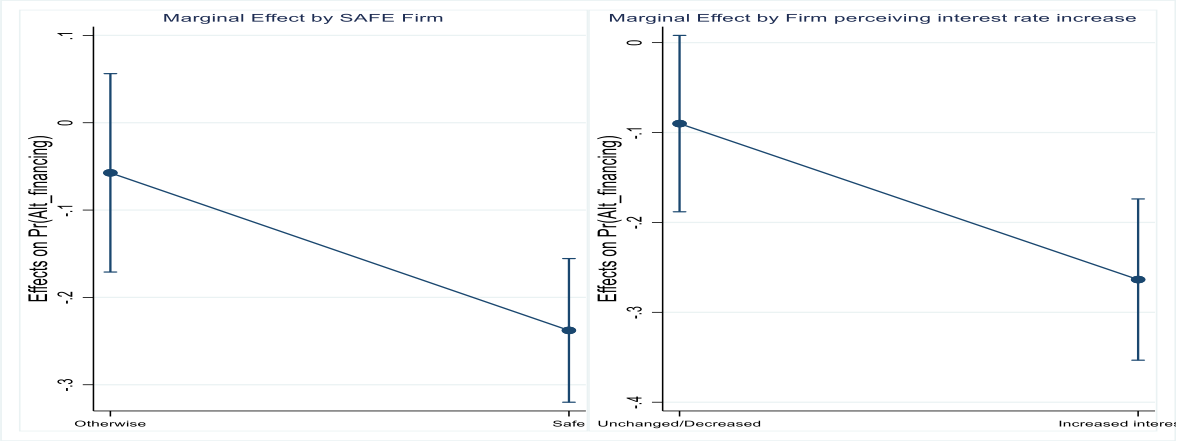


Figure 4: Firm heterogeneity analysis (safe and increased interest rate)



In addition, we examine how monetary policy tightening affected firms' use of internal funds, particularly retained earnings, which remain the most important financing source for many firms.

The probit regression results (Table 4) reveal a significant decline in firms' reliance on internal funds in 2023, with the average marginal effect indicating a 9-percentage point decrease compared to 2022 (Table 11, in appendix). This reduction aligns with theoretical expectations under tighter monetary conditions, where higher interest rates and rising financial uncertainty are likely to constrain firms' liquidity and erode their internal financial buffers.

This shift should be understood within the broader context of monetary policy dynamics: while 2022 featured abrupt and substantial rate hikes, 2023 saw a continued but more gradual tightening cycle (from 2.75% to 3.25%). The observed decline in internal funding in 2023 thus suggests a cumulative impact of sustained monetary contraction, rather than a response to a single policy shock.

Firm-level heterogeneity in these adjustments was limited. Younger firms, particularly those under two years old, exhibited a higher baseline reliance on internal funds, consistent with credit constraint literature; however, the interaction between firm age and the 2023 tightening indicator (D2023) was not statistically significant. This indicates that younger firms did not adjust their internal financing behavior differently from older firms in response to sustained tightening.

Similarly, medium-sized firms tended to rely less on internal financing likely due to greater dependence on external bank credit but did not show a differential behavioral change between 2022 and 2023. Firms anticipating rising interest rates demonstrated a greater inclination to use internal funds, reflecting precautionary motives amid expectations of costlier external borrowing. Nonetheless, this behavior did not intensify in 2023 relative to 2022, as evidenced by a statistically insignificant interaction effect.

Across other dimensions such as turnover size, profitability, and credit quality, no strong or consistent patterns of adjustment were detected. This suggests that the decline in internal financing use was broadly distributed across firms, reflecting an overall tightening of financial flexibility rather than selective shifts among specific subgroups.

Table 4: Monetary tightening and use of Internal financing (interaction results)

	(1)		(2)		(3)		(4)		(5)		(6)		(7)
	Size		Age		Profit		Turnover		Credit quality		Decrease loan size		Increase interest rate
D2023	-0.647	D2023	-0.715***	D2023	-0.828***	D2023	-1.066**	D2023	-0.787**	D2023	-0.828***	D2023	-0.621**
	(0.148)		(0.004)		(0.002)		(0.016)		(0.013)		(0.000)		(0.017)
Firm Size (Ref: Large)		Firm Age (Ref: More than 10 years):		Increased profit	-0.063	Firm Turnover (Ref: More than 2 M euro)		Safe firm	0.136	Decreased loan size	0.355	Increased interest rate	0.566***
Micro	-0.301	Firm Age (5 to 10 years)	0.400*		(0.853)	Less than 500k euro	0.190		(0.561)		(0.367)		(0.008)
	(0.406)		(0.083)				(0.702)						
Small	-0.451	2 to 5 years	0.407			500k to 1M euro	0.446						
	(0.172)		(0.127)				(0.453)						
Medium	-0.928***	Less than 2 years	0.744**			1 to 2M euro	0.235						
	(0.008)		(0.044)				(0.743)						
D2023x Firm Size (Micro)	-0.238	D2023x Firm Age (5 to 10 years)	-0.140	D2023x Firm Increased profit	-0.063	D2023x Firm Turnover (Less than 500k euro)	0.190	D2023x Safe	-0.108	D2023x Decreased loan size	0.000	D2023x Increased interest rate	-0.457
	(0.651)		(0.728)		(0.853)		(0.702)		(0.778)		(.)		(0.203)
D2023x Firm Size (Small)	-0.128	D2023x Firm Age (2 to 5 years)	-0.495			D2023x Firm Turnover (500k to 1M euro)	0.446						
	(0.804)		(0.362)				(0.453)						
D2023x Firm Size (Medium)	0.000	D2023x Firm Age (Less than 2 years)	-0.317			D2023x Firm Turnover (1 to 2M euro)	0.235						
	(.)		(0.611)				(0.743)						
Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes
Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes
Constant	-1.152**	Constant	-1.301***	Constant	-1.292***	Constant	-1.220***	Constant	-1.300***	Constant	-1.286***	Constant	-1.358***
	(0.012)		(0.005)		(0.005)		(0.008)		(0.006)		(0.006)		(0.004)
Pseudo R^2	0.206	Pseudo R^2	0.215	Pseudo R^2	0.212	Pseudo R^2	0.214	Pseudo R^2	0.212	Pseudo R^2	0.210	Pseudo R^2	0.216
Observations	690	Observations	727	Observations	727	Observations	727	Observations	727	Observations	713	Observations	727

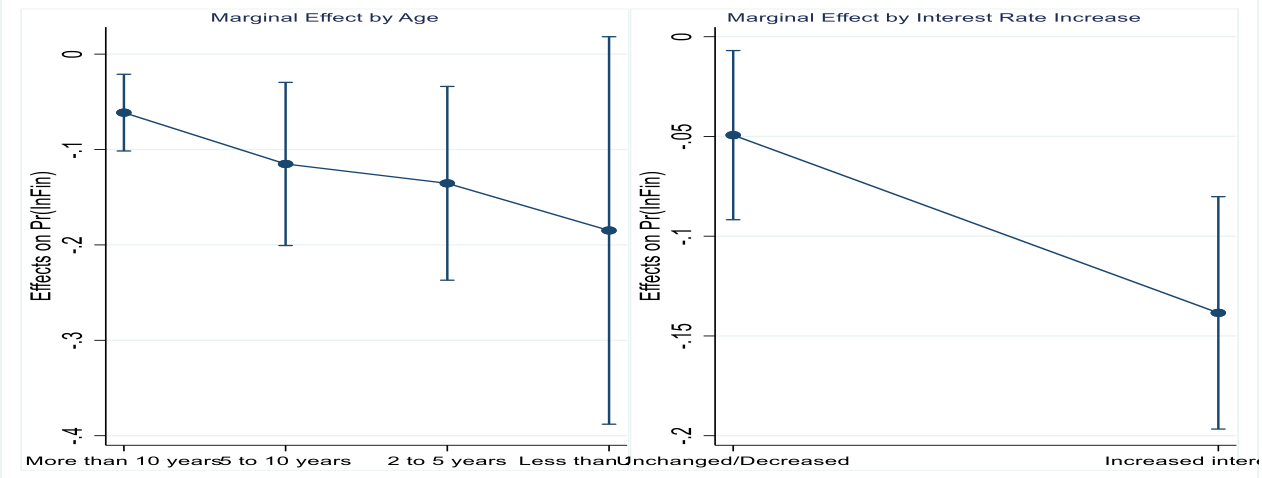
*Note: Clustered SE on firms level, p-values in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01*

Figure 5 presents the predicted probabilities of firms' use of internal funding, disaggregated by firm characteristics such as age and perceptions of rising interest rates. In 2022, the abrupt and unexpected tightening of monetary policy appears to have triggered an immediate response: younger firms and those anticipating higher interest rates were more likely to rely on internal funds. This behavior likely reflects a precautionary response by firms more vulnerable to external financing constraints, using retained earnings as a buffer amid rising borrowing costs and heightened uncertainty.

By 2023, however, the more gradual but sustained increase in interest rates coincided with a broad-based decline in the use of internal funding across all firm groups. This reduction reflects the cumulative impact of tighter financial conditions rather than a targeted adjustment by specific firm types. The absence of statistically significant interaction effects between firm characteristics and the 2023 period reinforces this interpretation indicating that firms, regardless of age or expectations, responded similarly under prolonged monetary constraint.

This phased adjustment highlights a key insight: the nature of monetary tightening whether sharp and abrupt or steady and predictable matters in shaping firms' financial responses. Sudden shocks tend to elicit differentiated reactions, especially from more financially vulnerable firms, while ongoing, anticipated tightening fosters more uniform strategic shifts across the business landscape.

Figure 5: Interaction results, use of internal funds



Robustness Check: balanced panel

To assess the robustness of our findings, we re-estimate the models using a balanced panel of 748 firms observed in both 2022 and 2023, thereby controlling for potential biases arising from firm entry or exit. The average marginal effects confirm a substantial decline in the probability of using

alternative financing from 44% in 2022 to 25% in 2023. Regression results incorporating interaction terms (Table 5) further validate this trend. The coefficient on the monetary policy indicator (D2023) remains consistently negative and statistically significant, indicating a broad contraction in the use of alternative (non-bank) financing. This suggests that firms' capacity or willingness to rely on such channels diminished as financial conditions tightened.

This pattern is consistent with the broader context of monetary policy developments: while 2022 was marked by abrupt and significant interest rate hikes, 2023 featured a slower but sustained high-rate environment. Firms' financing behaviour appears influenced by both the initial policy shock and the cumulative pressure of ongoing tightening.

Younger firms (aged 2–10 years) exhibited a stronger reduction in the use of alternative financing in 2023, underscoring their heightened sensitivity to credit frictions and more limited access to bank lending. This aligns with existing literature on financial constraints, suggesting that the lingering effects of the 2022 shock disproportionately affected financially vulnerable firms, even as policy tightening decelerated.

While smaller firms typically displayed a higher baseline use of alternative financing, their behavioural adjustment in 2023 did not differ significantly from that of larger firms. This suggests a uniform contraction in financing options across firm sizes under prolonged monetary constraint.

Firms with lower turnover, especially those with annual revenues under €500,000 registered the most pronounced decline in alternative financing. This reinforces the notion that revenue-constrained firms were more exposed to the adverse effects of sustained high interest rates, even when the pace of rate hikes moderated.

Profitable and financially sound firms also reduced their reliance on alternative sources, which may reflect either regained access to conventional bank credit or diminished need for costlier or informal financing.

Finally, firms facing higher borrowing rates were significantly less likely to use alternative finance in 2023. This suggests that, rather than substituting away from bank loans, many firms may have scaled back financing activity altogether, pointing to broader liquidity constraints. In contrast, reductions in loan quantities (i.e., smaller approved loans) did not significantly influence financing strategies, indicating that price effects, rather than quantity rationing, played a more central role in shaping firms' responses.

Table 5: Probit results, Alternative financing (with interaction)

	(1)		(2)		(3)		(4)		(5)		(6)		(7)
	Size		Age		Profit		Turnover		Credit quality		Decrease loan size		Increase interest rate
D2023	-0.781**	D2023	-0.354**	D2023	-0.296	D2023	0.028	D2023	-0.212	D2023	-0.546***	D2023	-0.277*
	(0.037)		(0.010)		(0.101)		(0.892)		(0.305)		(0.000)		(0.078)
Firm Size (Ref: Large)		Firm Age (Ref: More than 10 years):		Increased profit	0.090	Firm Turnover (Ref: More than 2 M euro)		Safe firm	0.457**	Decreased loan size	0.111	Increased interest rate	0.098
Micro	0.178	Firm Age (5 to 10 years)	0.377*		(0.629)	Less than 500k euro	0.372*		(0.020)		(0.760)		(0.549)
	(0.580)		(0.097)				(0.093)						
Small	0.125	2 to 5 years	0.430*			500k to 1M euro	0.500**						
	(0.646)		(0.086)				(0.038)						
Medium	-0.214	Less than 2 years	0.271			1 to 2M euro	0.652**						
	(0.421)		(0.523)				(0.042)						
D2023x Firm Size (Micro)	0.270	D2023x Firm Age (5 to 10 years)	-0.504*	D2023x Firm Increased profit	-0.429*	D2023x Firm Turnover (Less than 500k euro)	-0.840***	D2023x Safe	-0.474*	D2023x Decreased loan size	0.257	D2023x Increased interest rate	-0.565**
	(0.555)		(0.100)		(0.077)		(0.003)		(0.060)		(0.676)		(0.016)
D2023x Firm Size (Small)	0.191	D2023x Firm Age (2 to 5 years)	-0.507			D2023x Firm Turnover (500k to 1M euro)	-0.763**						
	(0.657)		(0.122)				(0.023)						
D2023x Firm Size (Medium)	0.367	D2023x Firm Age (Less than 2 years)	0.000			D2023x Firm Turnover (1 to 2M euro)	-0.803*						
	(.)		(.)				-0.840***						
Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes
Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes
Constant	-0.440	Constant	-0.625*	Constant	-0.636**	Constant	-0.854**	Constant	-0.682**	Constant	-0.522	Constant	-0.679**
	(0.195)		(0.051)		(0.050)		(0.012)		(0.041)		(0.105)		(0.039)
Pseudo R^2	0.062	Pseudo R^2	0.065	Pseudo R^2	0.066	Pseudo R^2	0.075	Pseudo R^2	0.066	Pseudo R^2	0.061	Pseudo R^2	0.069
Observations	527	Observations	523	Observations	527	Observations	527	Observations	527	Observations	527	Observations	527

*Note: Clustered SE on firms level, p-values in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$*

In addition to alternative financing, we also examine how firms adjusted their reliance on internal funding in response to evolving monetary conditions. Probit regression results using internal financing as the dependent variable reveal a statistically significant decline in 2023, as reflected by the consistently negative coefficient on the 2023 dummy across model specifications (Table 6). This finding indicates that, despite a slower pace of monetary tightening in 2023, the cumulative effect of persistently high interest rates reduced firms' capacity or willingness to self-finance.

Most interaction terms between the monetary policy indicator (D2023) and firm characteristics such as age, size, turnover, profitability, and creditworthiness were not statistically significant (Table 6). This suggests that the decline in internal funding was broad-based, affecting firms across various profiles. A notable exception, however, arises for firms that perceived tighter credit conditions: the interaction term for this group is both negative and highly significant (Table 6, column 7). This implies that firms anticipating or experiencing more restrictive borrowing environments were even less likely to rely on internal funds, likely due to compounded financial stress and eroded liquidity buffers in the aftermath of the 2022 shock.

Overall, the results point to a general contraction in the use of internal financing under sustained monetary tightening. While the intensity of rate hikes diminished in 2023, the persistent high-rate environment appears to have had a lingering dampening effect on internal financial flexibility especially among firms facing continued external credit constraints.

Table 6: Probit results, Internal financing (with interaction)-heterogeneity analysis

	(1) Size		(2) Age		(3) Profit		(4) Turnover		(5) Credit quality		(6) Decrease loan size		(7) Increase interest rate
D2023	-0.781**	D2023	-0.599**	D2023	-0.719**	D2023	-0.807*	D2023	-0.745*	D2023	-0.723***	D2023	-0.143
	(0.037)		(0.033)		(0.026)		(0.077)		(0.058)		(0.001)		(0.645)
Firm Size (Ref: Large)		Firm Age (Ref: More than 10 years):		Increased profit	0.134	Firm Turnover (Ref: More than 2 M euro)		Safe firm	0.457**	Decreased loan size	-0.308	Increased interest rate	0.814***
Micro	-0.425	Firm Age (5 to 10 years)	0.353		(0.569)	Less than 500k euro	0.355		(0.020)		(0.557)		(0.004)
	(0.265)		(0.194)				(0.246)						
Small	-0.671*	2 to 5 years	0.564*			500k to 1M euro	-0.364						
	(0.072)		(0.054)				(0.408)						
Medium	-0.769*	Less than 2 years	0.812*			1 to 2M euro	0.468						
	(0.050)		(0.079)				(0.274)						
D2023x Firm Size (Micro)	-0.481	D2023x Firm Age (5 to 10 years)	-0.047	D2023x Firm Increased profit	-0.028	D2023x Firm Turnover (Less than 500k euro)	0.132	D2023x Safe	0.016	D2023x Decreased loan size	0.000	D2023x Increased interest rate	-1.320***
	(0.462)		(0.924)		(0.943)		(0.804)		(0.974)	(.)			(0.009)
D2023x Firm Size (Small)	0.302	D2023x Firm Age (2 to 5 years)	-0.411			D2023x Firm Turnover (500k to 1M euro)	0.000						
	(0.588)		(0.499)				(.)						
D2023x Firm Size (Medium)	0.000	D2023x Firm Age (Less than 2 years)	0.000			D2023x Firm Turnover (1 to 2M euro)	0.190						
	(.)		(.)				(0.798)						
Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes	Industry dummy	Yes
Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes	Firm Controls	Yes
Constant	-1.182**	Constant	-1.177**	Constant	-1.205**	Constant	-1.196**	Constant	-1.201**	Constant	-1.212**	Constant	-1.421**
	(0.027)		(0.029)		(0.025)		(0.028)		(0.029)		(0.023)		(0.013)
Pseudo R^2	0.223	Pseudo R^2	0.226	Pseudo R^2	0.221	Pseudo R^2	0.197	Pseudo R^2	0.221	Pseudo R^2	0.219	Pseudo R^2	0.250
Observations	502	Observations	523	Observations	527	Observations	465	Observations	527	Observations	519	Observations	527

*Note: Clustered SE on firms level, p-values in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01*

Both internal and alternative financing declined notably in 2023 amid persistently tight monetary conditions, though the patterns of adjustment differed across firm types. The use of internal financing decreased in a relatively uniform fashion across the SME landscape, with the most pronounced reduction observed among firms exposed to higher bank interest rates. This broad-based decline suggests that by 2023, the cumulative effects of elevated interest rates stemming from the sharp monetary tightening in 2022 had eroded firms' liquidity buffers and constrained their capacity to self-finance, particularly among those already experiencing financial stress.

By contrast, the decline in alternative financing was more heterogeneous. Younger, smaller, and less profitable firms groups typically more exposed to credit frictions exhibited sharper reductions in their use of non-bank financing sources. This suggests that alternative financing is more sensitive to firm-specific vulnerabilities and that prolonged financial pressure may have undermined even these fallback channels for more constrained firms.

Findings from the balanced panel analysis reinforce these conclusions. While both financing channels contracted in response to sustained monetary tightening, the contraction in alternative financing was more uneven and closely tied to firm characteristics. Notably, firms facing higher borrowing costs from banks were significantly less likely to rely on either internal or alternative sources of finance, highlighting how tight credit conditions can broadly suppress firms' overall financing capacity, regardless of the channel.

Additionally, for the balanced panel data, we analyzed how firms' responses regarding the use of alternative financing changed between the two waves of the survey. The data show that in 2023, 25% of firms shifted from alternative financing to bank financing, 13% of firms moved from bank financing to alternative financing, while 62% of firms did not change their financing behavior.

To understand how firm characteristics observed in 2022 are associated with the likelihood of switching between financing sources in 2023, we present below the estimates from a first-difference model, distinguishing between firms that switched from bank to alternative financing and those that moved from alternative to bank financing. The results are show in table 7 and 8 respectively.

The results indicate a higher probability of switching from alternative to bank financing among younger firms, particularly those 2 to 5 years old, which may reflect their limited ability to access other funding channels (Table 7). Firms with lower turnover levels, especially those with less than €500,000 and those between €500,000 and €1 million, also show a greater tendency to switch toward bank financing, possibly due to constraints in accessing external funds. Moreover, financially healthier firms appear more likely to turn to banks, likely due to their stronger financial standing and perceived creditworthiness. Conversely, micro firms display a lower probability of shifting from alternative to bank financing, likely due to greater barriers in accessing formal credit markets.

On the other hand, when analyzing the 13% of firms that replaced bank financing with alternative sources, the findings suggest that this shift is more prevalent among medium-sized firms (those with 50 to 250 employees), which face higher financial costs and may seek greater flexibility or lower transaction burdens in alternative financing options (Table 8).

Overall, the results indicate an asymmetric adjustment in financing behavior: firms returning to bank financing tended to be younger, firms with lower annual turnover level (less than €1 million), or financially safer, likely out of necessity or improved credit access; while those exiting bank finance were cost-sensitive, mid-sized firms seeking more adaptable funding under prolonged monetary tightening.

Table 7: First difference model, firms switching from alternative financing to bank financing

	(1)	(2)	(3)	(4)	(5)
	Alt→Bank	Alt→Bank	Alt→Bank	Alt→Bank	Alt→Bank
Firm Age (Ref: More than 10 years):					
Firm Age (5 to 10 years)	0.0590	0.0691	0.0579	0.0122	0.0496
	(0.245)	(0.182)	(0.257)	(0.860)	(0.526)
2 to 5 years	0.103*	0.109*	0.113*	0.0708	0.0888
Less than 2 years	(0.074)	(0.063)	(0.054)	(0.379)	(0.328)
	-0.0449	0.0126	0.0157	0.00763	0.185
	(0.569)	(0.883)	(0.863)	(0.954)	(0.256)
Firm Turnover (Ref: More than 2 M euro)					
Less than 500k euro	0.0510		0.114**	0.173***	0.126*
	(0.277)		(0.028)	(0.008)	(0.077)
500k to 1M euro	0.192***		0.215***	0.230***	0.262***
	(0.004)		(0.001)	(0.002)	(0.001)
1 to 2M euro	0.102		0.102	0.0845	0.170
	(0.217)		(0.197)	(0.396)	(0.129)
Firm Size (Ref: Large)					
Micro		-0.0937	-0.153*	-0.130	-0.155
		(0.197)	(0.063)	(0.213)	(0.185)
Small		-0.0608	-0.126	-0.0790	-0.0674
Medium		(0.395)	(0.105)	(0.396)	(0.510)
Increased profit		0.0280	0.0303	-0.0272	-0.0187
		(0.465)	(0.433)	(0.634)	(0.776)
Safe firm				0.158***	0.162***
				(0.003)	(0.008)
Increased fix investment				0.0147	-0.0159
				(0.820)	(0.819)
Increased lb cost				0.134*	0.0144
				(0.077)	(0.888)
Increased Interest Expenditure				0.0115	0.00244
				(0.830)	(0.968)
Decreased loan size					0.214
					(0.117)
Increased interest rate					0.0644
					(0.280)
Pseudo R^2	0.024	0.015	0.029	0.067	0.087
Observations	593	593	579	324	252

*Note: Clustered SE on firms level, p-values in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$*

Table 8: First difference model, firms switching from bank financing to alternative financing

	(1) Bank→Alt	(2) Bank→Alt	(3) Bank→Alt	(4) Bank→Alt	(5) Bank→Alt
Firm Age (Ref: More than 10 years):					
Firm Age (5 to 10 years)	-0.00470	0.00326	0.000953	-0.0553	-0.0735*
	(0.890)	(0.927)	(0.978)	(0.131)	(0.093)
2 to 5 years	0.0237	0.0493	0.0383	0.0335	0.0470
Less than 2 years	(0.557)	(0.277)	(0.376)	(0.549)	(0.515)
	0.0723	0.0934	0.114	0.108	0.130
	(0.312)	(0.226)	(0.173)	(0.356)	(0.399)
Firm Turnover (Ref: More than 2 M euro)					
Less than 500k euro	0.0104		0.0302	0.0563	0.0317
	(0.760)		(0.440)	(0.182)	(0.558)
500k to 1M euro	-0.0142		-0.0159	0.0134	0.0199
1 to 2M euro	(0.749)		(0.716)	(0.750)	(0.738)
Less than 500k euro	0.0423		0.0367	0.0285	0.0433
	(0.494)		(0.524)	(0.642)	(0.597)
	0		0	0	0
Firm Size (Ref: Large)					
Micro	-0.00470	0.0155	0.0200	0	-0.00470
	(0.918)	(0.730)	(0.618)	(.)	(0.918)
Small	0.0238	0.0455	0.0654	0	0.0238
Medium	(0.605)	(0.310)	(0.124)	(.)	(0.605)
Increased profit		-0.0255	-0.0298	0.00209	0.0171
		(0.357)	(0.282)	(0.953)	(0.734)
Safe firm				-0.0613	-0.0519
				(0.101)	(0.296)
Increased fix investment				-0.00263	0.0182
				(0.950)	(0.755)
Increased lb cost				-0.0726	-0.145
				(0.324)	(0.220)
Increased Interest Expenditure				0.0289	0.0889*
				(0.422)	(0.080)
Decreased loan size					0.0149
					(0.859)
Increased interest rate					-0.0509
					(0.239)
Pseudo R^2	0.012	0.0184	0.0303	0.0916	0.088
Observations	593	593	579	324	220

*Note: Clustered SE on firms level, p-values in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$*

V. Conclusions

This paper has examined how firms in Albania adjusted their financing behavior in response to the monetary policy tightening observed in 2022 and 2023, with a particular focus on the use of alternative and internal funding sources. The findings reveal a clear and significant decline in the use of both financing types in 2023 compared to 2022, reflecting the cumulative impact of sustained restrictive monetary conditions. While 2022 was marked by sharp and unexpected

interest rate increases, 2023 featured a slower but persistent pace of tightening. Our results suggest that this prolonged monetary stance continued to erode firms' financial flexibility, leading to a broad contraction in financing activity across the business sector.

The decline in alternative financing was heterogeneous across firms. Younger firms (aged 2–10 years), those with lower turnover, and more financially vulnerable enterprises experienced significantly sharper reductions in the use of non-bank financing. Firms facing higher bank interest rates were also considerably less likely to rely on alternative financing in 2023, indicating that cost pressures rather than credit quantity constraints acted as the main channel of monetary policy transmission. These patterns confirm that firm-specific vulnerabilities especially age, scale, and financial strength play a central role in determining access to finance during tightening cycles.

By contrast, the decline in internal financing was more uniform across the firm population. While younger and smaller firms generally depend more on internal funds due to limited access to external credit, our results show that the reduction in internal financing in 2023 was widespread and not concentrated among any specific firm groups. The only exception was for firms perceiving tighter credit conditions: these firms were even less likely to use internal funds, likely due to cumulative liquidity pressures that depleted internal buffers. This finding points to a broader erosion of financial resilience across Albanian firms in the face of prolonged monetary stress.

Furthermore, we examined switching behavior between financing sources over time. Results from the balanced panel show that 25% of firms shifted from alternative to bank financing between 2022 and 2023, 13% moved in the opposite direction, while the majority (62%) did not change their financing mode. Firms switching from alternative to bank financing were typically younger, firms with lower annual turnover level (less than €1 million), or more financially sound, likely reflecting necessity or regained access to formal credit. Conversely, firms transitioning away from bank financing were mostly medium-sized and cost-sensitive, potentially seeking more flexibility or relief from rising borrowing costs.

These dynamics suggest an asymmetric adjustment process in firms' financing strategies. The sharp monetary tightening in 2022 triggered immediate and targeted responses, especially among financially constrained firms. In 2023, the continuation of tight monetary policy though more predictable led to broader behavioral shifts, including reduced reliance on both internal and alternative sources of funding. Contrary to the expectation that firms would substitute between financing channels as conditions tightened, our findings show a simultaneous contraction in both, signaling deeper liquidity pressures and more persistent financing constraints.

These results contribute to the literature on monetary policy transmission in emerging economies by providing novel evidence from Albania, a non-euro area country where financial markets are less developed and firms face greater structural credit frictions. The findings underscore the need for careful policy design and targeted support measures, particularly for vulnerable firms, during periods of monetary tightening. Ensuring continued access to finance for younger and smaller

firms who are more sensitive to shocks is critical to sustaining economic resilience and long-term growth.

Finally, this study is limited by the relatively short two-year panel of firm-level data (2022–2023). Extending the analysis over a longer horizon would allow for more robust medium-term assessments of financing dynamics. It would also enable the use of advanced causal methods such as difference-in-differences or instrumental variable strategies, provided appropriate identification conditions are met. Future research with longer and richer datasets could deepen our understanding of how monetary policy shocks interact with firm heterogeneity, credit frictions, and macro-financial stability in small, open economies like Albania

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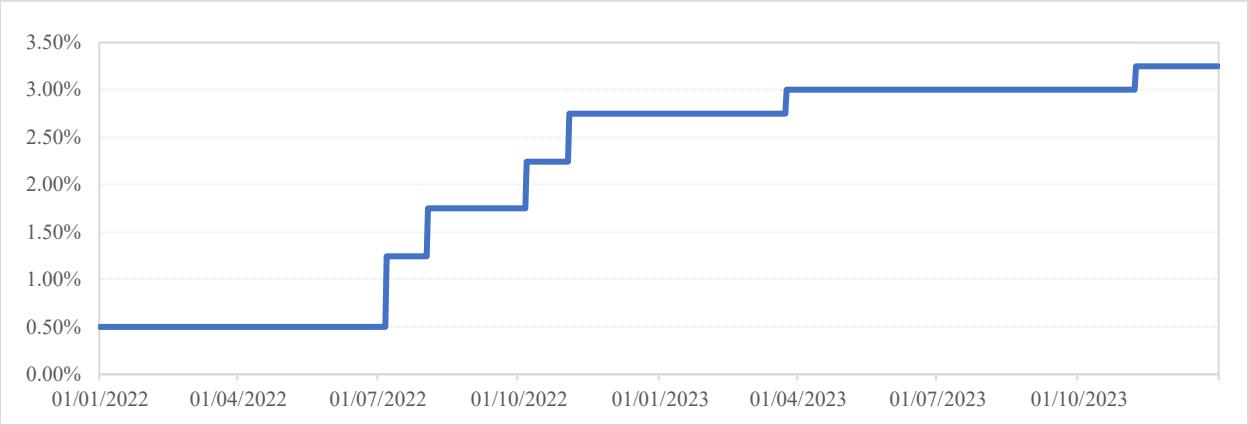
Appendix

Table 9: Composition of the two first wave of the survey on access to finance (as % of total sample)

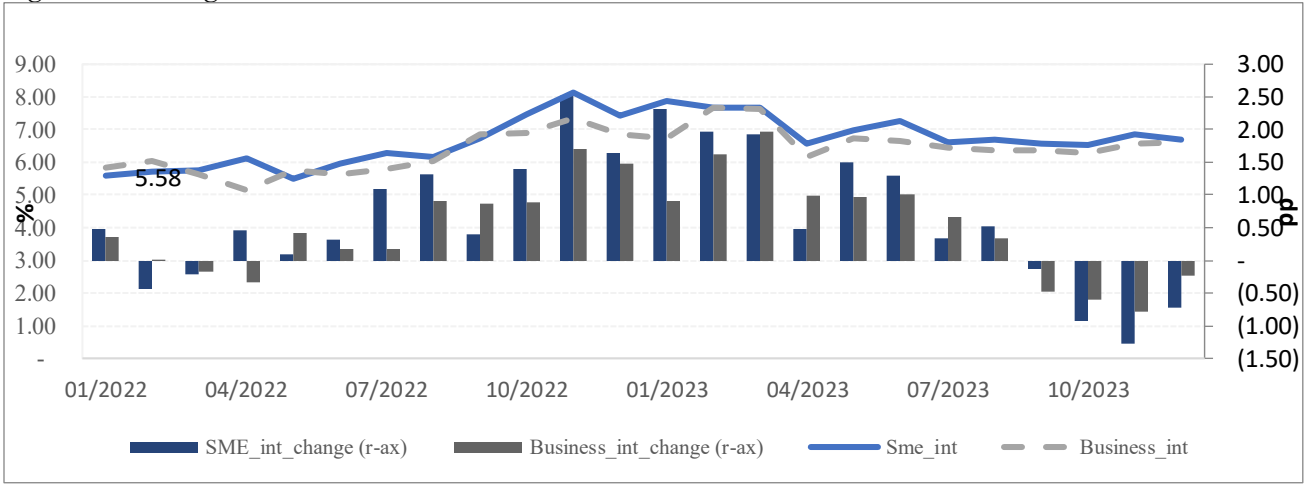
	Firms' characteristics		
	Wave 2023	Wave 2024	Total firms (both wave)
Total	944	981	1925
Firm Age			
10 years or more	54%	52%	53%
5 years or more but less than 10 years	22%	25%	24%
2 years or more but less than 5 years	16%	15%	15%
Less than 2 years	8%	8%	8%
	100%	100%	100%
Firm size			
Micro (1 to 9 employees)	38%	41%	40%
Small (10-49 employees)	31%	30%	31%
Medium (50-259 employees)	23%	21%	22%
Large (250 employees or more)	8%	8%	8%
	100%	100%	100%
Ownership			
Personal	64%	70%	67%
Family	18%	13%	15%
Others	18%	18%	18%
	100%	100%	100%
Annual Turnover			
less 500,000 euro	65%	51%	58%
500,000 to 1 million euro	11%	16%	14%
1 to 2 million euro	6%	10%	8%
more than 2 million euro	17%	23%	20%
	100%	100%	100%
Sector Activity			
Construction	18%	19%	18%
Trade	26%	22%	24%
Others	16%	15%	16%
Industry	19%	23%	21%
Services	21%	21%	21%
	100%	100%	100%

Figure 6: Monetary policy rate in Albania



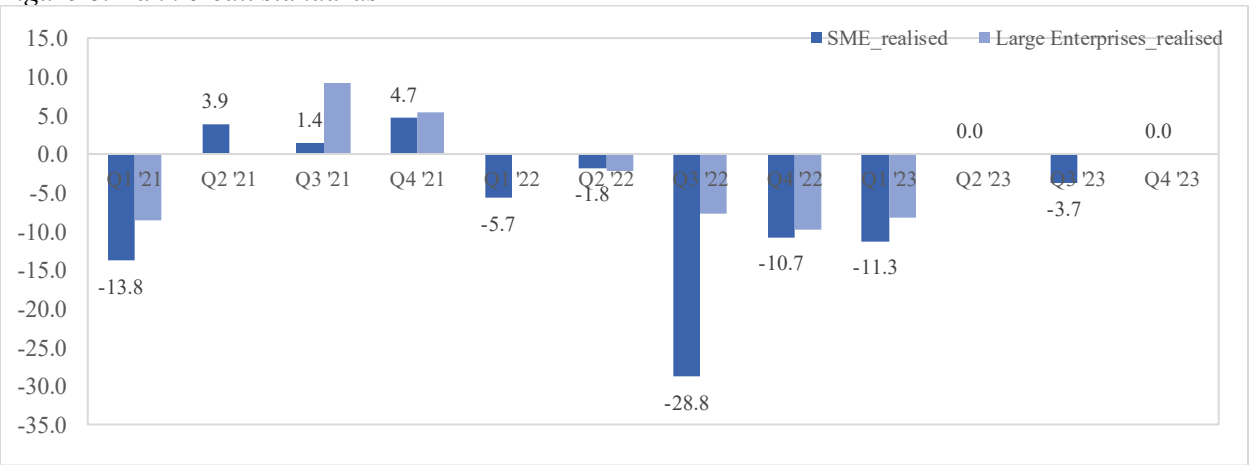
Source: Bank of Albania (2025)

Figure 7: Lending interest rate in AL



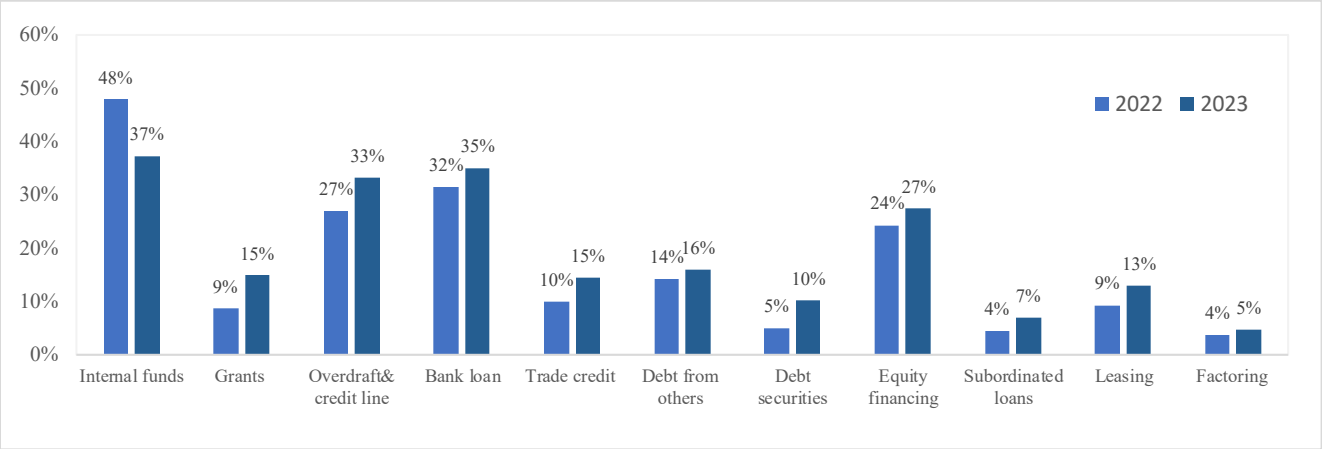
Source: Bank of Albania (2025)

Figure 8: Bank credit standards



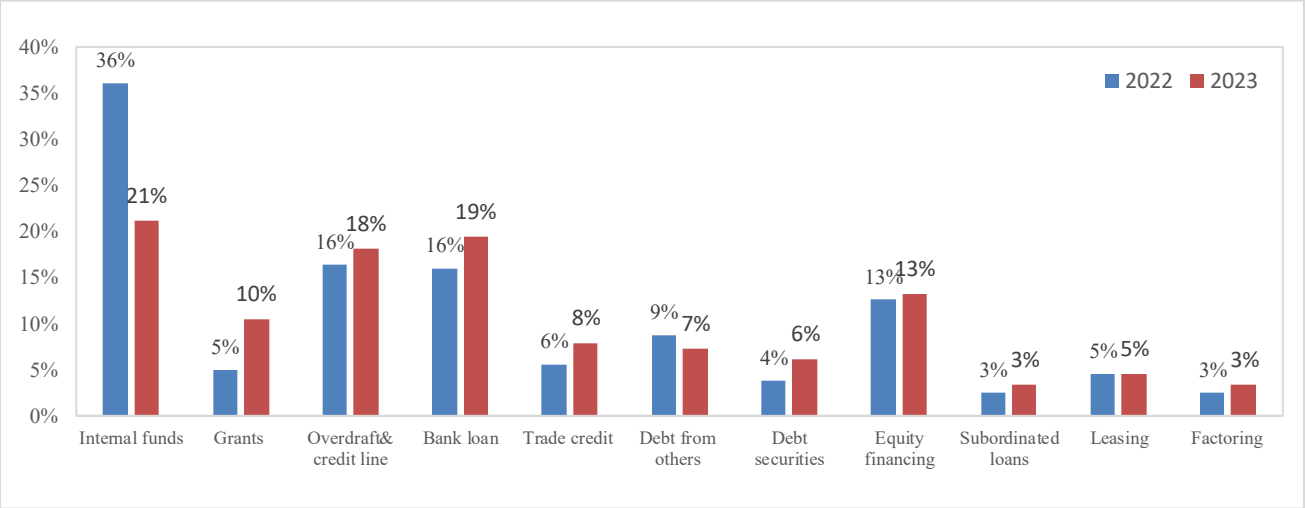
Source: Bank of Albania (2025), Bank Lending Survey.
Note: Negative balances indicate that banks have tightened their credit standards, whereas a net positive balance indicates that banks eased the credit standards.

Figure 9: The significance of each financial sources as percentage of total firms



Source: Bank of Albania Access to Finance Survey of Firms

Figure 10: Use of financial instruments (percentage of total firms)



Source: Bank of Albania Access to Finance Survey of Firms

Table 10: Average marginal effects (baseline model without interaction)

	(1)	(2)	(3)	(4)	(5)
D2023	-0.104***	-0.107***	-0.108***	-0.150***	-0.176***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Age (ref: More than 10 years)					
5 to 10 years	0.016	0.021	0.016	0.039	0.052
	(0.584)	(0.469)	(0.580)	(0.347)	(0.276)
2 to 5 years	0.072**	0.073**	0.076**	0.073	0.047
	(0.039)	(0.034)	(0.031)	(0.117)	(0.386)
Less than 2 years	-0.009	0.007	0.000	-0.015	-0.007
	(0.834)	(0.881)	(0.996)	(0.812)	(0.927)
Firm Turnover (ref: More than 2M euro)					
Less than 500k euro	0.038		0.047	0.040	-0.001
	(0.217)		(0.199)	(0.373)	(0.982)
500k to 1M euro	0.071*		0.064	0.074	0.046
	(0.075)		(0.125)	(0.133)	(0.391)
1 to 2M euro	0.120**		0.114**	0.129**	0.099
	(0.016)		(0.023)	(0.035)	(0.146)
Firm Sector (Ref: Construction)					
Industry	-0.043	-0.047	-0.037	-0.049	-0.039
	(0.240)	(0.195)	(0.317)	(0.301)	(0.468)
Trade	-0.044	-0.042	-0.036	-0.106**	-0.091*
	(0.215)	(0.231)	(0.312)	(0.021)	(0.081)
Services	-0.060*	-0.044	-0.043	-0.053	-0.085
	(0.098)	(0.220)	(0.244)	(0.289)	(0.143)
Others	-0.036	-0.021	-0.016	-0.047	-0.038
	(0.362)	(0.591)	(0.693)	(0.362)	(0.531)
Firm Size (Ref: Large)					
Micro		-0.012	-0.028	0.026	0.075
		(0.794)	(0.598)	(0.703)	(0.318)
Small		0.055	0.031	0.023	0.063
		(0.211)	(0.537)	(0.703)	(0.338)
Medium		-0.001	-0.025	-0.053	-0.043
		(0.974)	(0.614)	(0.362)	(0.472)
Increased firm profit (Ref: decreased/unchanged)		0.037*	0.033	-0.019	-0.038
		(0.098)	(0.143)	(0.575)	(0.332)
Credit quality Safe (Ref. Others)				0.067**	0.060
				(0.043)	(0.120)
Increased fix investment				-0.028	-0.036
				(0.458)	(0.413)
Increased lb cost				0.079*	0.098*
				(0.082)	(0.060)
Increased Interest Expenditure				0.017	0.027
				(0.615)	(0.473)
Decreased loan size					0.164*
					(0.075)
Increased interest rate					-0.071**
					(0.044)
Pseudo R^2	0.016	0.018	0.020	0.041	0.059
Observations	1754	1761	1700	995	727

Table 11: Average marginal effect for baseline model (with interaction)

	(1) Age	(2) Size	(3) Profit	(4) Turnover	(5) Credit quality	(6) Bank financial condition (decrease loan size	(7) Bank financial condition (increase interest rate)
D2023	-0.177***	-0.178***	-0.176***	-0.178***	-0.177***	-0.177***	-0.174***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size (ref: Large)							
Micro	0.077	0.072	0.073	0.093	0.076	0.079	0.086
	(0.301)	(0.330)	(0.324)	(0.211)	(0.307)	(0.292)	(0.243)
Small	0.068	0.061	0.060	0.068	0.061	0.068	0.067
	(0.292)	(0.344)	(0.361)	(0.288)	(0.351)	(0.298)	(0.306)
Medium	-0.040	-0.037	-0.045	-0.034	-0.044	-0.040	-0.042
	(0.503)	(0.533)	(0.455)	(0.566)	(0.468)	(0.509)	(0.483)
Firm Age (Ref: More than 10 years)							
5 to 10 years	0.048	0.055	0.047	0.050	0.048	0.054	0.045
	(0.310)	(0.248)	(0.313)	(0.290)	(0.306)	(0.260)	(0.342)
2 to 5 years	0.042	0.053	0.045	0.043	0.048	0.048	0.054
	(0.437)	(0.328)	(0.407)	(0.421)	(0.375)	(0.376)	(0.322)
Less than 2 years	-0.009	-0.010	-0.023	-0.004	-0.005	-0.009	-0.022
	(0.912)	(0.902)	(0.768)	(0.963)	(0.956)	(0.913)	(0.784)
Firm Turnover (More than 2M euro)							
Less than 500k euro	-0.009	-0.000	0.004	-0.004	-0.005	-0.002	-0.002
	(0.864)	(0.993)	(0.944)	(0.931)	(0.927)	(0.976)	(0.964)
500k to 1M euro	0.040	0.048	0.045	0.053	0.052	0.047	0.034
	(0.457)	(0.368)	(0.407)	(0.327)	(0.334)	(0.385)	(0.526)
1 to 2M euro	0.089	0.101	0.110	0.108	0.107	0.095	0.098
	(0.195)	(0.140)	(0.109)	(0.116)	(0.117)	(0.163)	(0.150)
Firm Profit Increased	-0.037	-0.039	-0.032	-0.031	-0.048	-0.039	-0.040
	(0.344)	(0.317)	(0.423)	(0.442)	(0.225)	(0.324)	(0.307)
Firm Sector (Ref: Construction)							
Industry	-0.036	-0.038	-0.044	-0.036	-0.042	-0.043	-0.036
	(0.503)	(0.482)	(0.409)	(0.504)	(0.433)	(0.419)	(0.501)
Trade	-0.094*	-0.093*	-0.090*	-0.098*	-0.090*	-0.095*	-0.086*
	(0.069)	(0.073)	(0.083)	(0.057)	(0.086)	(0.070)	(0.097)
Services	-0.079	-0.085	-0.079	-0.083	-0.092	-0.087	-0.078
	(0.175)	(0.142)	(0.174)	(0.153)	(0.111)	(0.136)	(0.179)
Others	-0.033	-0.038	-0.036	-0.035	-0.039	-0.041	-0.043
	(0.586)	(0.526)	(0.547)	(0.562)	(0.520)	(0.504)	(0.466)
Increased fix investment	-0.044	-0.037	-0.035	-0.042	-0.037	-0.038	-0.041
	(0.312)	(0.384)	(0.418)	(0.334)	(0.397)	(0.376)	(0.341)
Increased lb cost	0.099*	0.094*	0.102**	0.093*	0.098*	0.101*	0.103**
	(0.055)	(0.071)	(0.045)	(0.079)	(0.057)	(0.052)	(0.045)
Increased Interest Expenditure	0.031	0.025	0.024	0.023	0.028	0.029	0.020
	(0.411)	(0.512)	(0.532)	(0.556)	(0.460)	(0.449)	(0.605)
Safe	0.058	0.056	0.048	0.056	0.067*	0.054	0.047
	(0.136)	(0.144)	(0.217)	(0.147)	(0.079)	(0.164)	(0.221)
Increased interest rate	-0.072**	-0.069**	-0.077**	-0.069*	-0.077**	-0.072**	-0.069**
	(0.039)	(0.048)	(0.029)	(0.051)	(0.028)	(0.042)	(0.047)
Decreased loan	0.165*	0.157*	0.173*	0.164*	0.185**	0.189**	0.156*
	(0.074)	(0.090)	(0.060)	(0.073)	(0.046)	(0.044)	(0.084)
Pseudo R^2	0.063	0.065	0.063	0.066	0.064	0.060	0.066
Observations	727	727	727	727	727	727	727

Table 12: Average marginal effect, the use of internal funding (with interaction)

	(1) Age	(2) Size	(3) Profit	(4) Turnover	(5) Credit quality	(6) Bank financial condition (decrease loan size	(7) Bank financial condition (increase interest rate)
D2023	0.000	-0.091***	-0.090***	-0.090***	-0.090***	0.000	-0.091***
	(.)	(0.000)	(0.000)	(0.000)	(0.000)	(.)	(0.000)
Firm size (ref Large)							
Micro	0.000	-0.029	-0.027	-0.031	-0.027	-0.030	-0.023
	(.)	(0.562)	(0.587)	(0.539)	(0.582)	(0.570)	(0.648)
Small	0.000	-0.041	-0.041	-0.043	-0.042	-0.045	-0.040
	(.)	(0.358)	(0.358)	(0.350)	(0.353)	(0.336)	(0.372)
Medium	0.000	-0.080*	-0.081*	-0.082*	-0.081*	-0.085**	-0.080*
	(.)	(0.055)	(0.052)	(0.051)	(0.051)	(0.049)	(0.053)
Firm Age (ref. More than 10 years)							
5 to 10 years	0.042	0.040*	0.039*	0.040*	0.039	0.039	0.039
	(0.100)	(0.097)	(0.099)	(0.097)	(0.104)	(0.113)	(0.111)
2 to 5 years	0.028	0.031	0.028	0.029	0.028	0.029	0.029
	(0.311)	(0.242)	(0.296)	(0.266)	(0.281)	(0.292)	(0.282)
Less than 2 years	0.088*	0.087*	0.084*	0.084*	0.085*	0.086*	0.081
	(0.100)	(0.094)	(0.099)	(0.096)	(0.097)	(0.097)	(0.112)
Firm Turnover (ref: More than 2M euro)							
Less than 500k euro	0.017	0.018	0.019	0.019	0.019	0.019	0.018
	(0.527)	(0.487)	(0.464)	(0.458)	(0.469)	(0.472)	(0.497)
500k to 1M euro	0.001	0.002	0.003	0.001	0.003	0.002	0.002
	(0.967)	(0.937)	(0.909)	(0.969)	(0.903)	(0.937)	(0.947)
1 to 2M euro	0.042	0.040	0.043	0.041	0.043	0.047	0.040
	(0.354)	(0.338)	(0.318)	(0.339)	(0.325)	(0.303)	(0.342)
Increased profit	0.008	0.007	0.008	0.008	0.006	0.008	0.006
	(0.679)	(0.731)	(0.694)	(0.697)	(0.742)	(0.692)	(0.775)
Firm Sector (Ref: Construction)							
Industry	-0.054**	-0.052*	-0.052*	-0.052*	-0.053**	-0.052*	-0.051*
	(0.048)	(0.055)	(0.057)	(0.054)	(0.050)	(0.058)	(0.062)
Trade	-0.042	-0.042	-0.041	-0.041	-0.042	-0.041	-0.039
	(0.119)	(0.113)	(0.116)	(0.115)	(0.110)	(0.126)	(0.133)
Services	0.001	-0.002	-0.002	-0.002	-0.003	-0.000	0.000
	(0.966)	(0.950)	(0.959)	(0.953)	(0.921)	(0.989)	(0.996)
Others	0.028	0.025	0.025	0.025	0.024	0.026	0.022
	(0.434)	(0.473)	(0.462)	(0.477)	(0.483)	(0.469)	(0.517)
Increased fix investment	-0.057***	-0.055***	-0.055***	-0.056***	-0.055***	-0.056***	-0.055***
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)
Increased lb cost	0.013	0.012	0.014	0.013	0.014	0.012	0.015
	(0.652)	(0.652)	(0.604)	(0.620)	(0.605)	(0.667)	(0.569)
Increased Interest Expenditure	-0.003	-0.005	-0.005	-0.005	-0.004	-0.004	-0.006
	(0.883)	(0.768)	(0.783)	(0.767)	(0.797)	(0.802)	(0.697)
Safe	0.011	0.011	0.010	0.009	0.011	0.012	0.008
	(0.598)	(0.591)	(0.621)	(0.651)	(0.573)	(0.552)	(0.686)
Increased interest rate	0.047**	0.045**	0.044**	0.045**	0.044**	0.046**	0.046***
	(0.011)	(0.013)	(0.014)	(0.013)	(0.014)	(0.011)	(0.009)
Decreased loan	0.032	0.026	0.026	0.028	0.027	0.000	0.025
	(0.546)	(0.583)	(0.576)	(0.562)	(0.568)	(.)	(0.588)
Pseudo R^2	0.206	0.215	0.212	0.214	0.212	0.210	0.216
Observations	690	727	727	727	727	713	727