Global Capital Conditions and SME Performance*

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Abstract

This paper studies how a tightening in global capital conditions, led by the United States Federal Reserve (Fed)'s taper tantrum policy in 2013, affects small and medium-sized enterprises (SMEs) performance in Türkiye, specifically focusing on credit access, investment, and sales growth. Our findings reveal that the global tightening led to adverse effects on domestic credit conditions, resulting in SMEs experiencing their lowest credit access in 2013. As a result, SMEs' investment and sales growth experienced a significant decline with a one-year delay in 2014. However, the estimated negative effects on SME performance gradually diminished over the subsequent three years.

Keywords: Global Capital Spillovers, SME, Access to Credit

JEL Classification: E58, G31

Küresel Sermaye Koşulları ve KOBİ Performansı

Özet

Bu makale 2013'teki ABD Merkez Bankası (Fed) "taper tantrum" politikası öncülüğündeki küresel sermaye koşullarındaki sıkılaşmanın Türkiye'deki küçük ve orta ölçekli işletmelerin (KOBİlerin) kredi erişimi, yatırım ve satış büyüme performansına etkisini incelemektedir. Bulgularımız, küresel sıkılaşmanın yerel kredi koşulları üzerinde olumsuz etkilere yol açarak, aynı yıl içerisinde KOBİ kredi erişiminin en düşük seviyeye ulaşmasına neden olduğunu ortaya koymaktadır. Kredi erişimlerindeki bu düşüş KOBİ yatırım ve satış büyümelerinde, bir yıllık gecikmeyle 2014 yılında, önemli bir azalmaya sebep olmuştur. Bahsi geçen negatif etkilerin, takip eden üç yıl içerisinde kademeli olarak azaldığı gözlenmektedir.

Anahtar Kelimeler: Küresel Sermaye Sızıntıları, KOBİ, Kredi Erişimi

JEL Sınıflandırması: E58, G31

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1   Introduction

Since the Global Financial Crisis (GFC) of 2008, a significant portion of the monetary policy responses to business cycles has been made up of unconventional policies. The primary one among these policies was the Fed's quantitative easing (QE) that started in late 2008 and continued until mid-2013, which then shifted to a tightening era with the taper tantrum policy. The liquidity injections and contractions during these two distinct episodes had significant international spillovers in emerging markets with massive fluctuations in the capital in and out-flows, asset prices, and exchange rates (Fendoglu et. al., 2019; Fratzscher, 2018; Tillmann, 2016; Barajas, 2016; Alp and Yalcin, 2015). Given their stronger reliance on global capital flows, domestic credit markets in emerging market economies are particularly sensitive to these fluctuations, which would have significant implications for firms' credit access and performance. Especially during credit market contractions, typically large firms with stronger collateral capacity, higher creditworthiness, and access to a large set of financial instruments and markets, e.g., cross-border lending, can sustain on relatively better credit access than SMEs (Akcigit, et al., 2020; Beck and Demirguc-Kunt, 2006). On the contrary, SMEs' credit access is generally found to be vulnerable to business cycles given their relatively high-risk profile due to high informality, low collateral worthiness, and less stable cash flow opportunities. Their external funding opportunities dry up faster than those of large firms (Alter and Elekdag, 2020; Gezici et. al, 2019; Wehinger, 2014; ECB, 2013). Presumably, adverse shocks to domestic credit conditions can negatively affect their performance, which is the focus of this study.

Exploiting the Fed policy shift in 2013, the taper tantrum, we analyze the heterogeneous impact of global capital market conditions on Turkish SMEs compared to large firms in this paper. More specifically, we hypothesize that SMEs' credit access is more vulnerable to global capital conditions than large firms, which can adversely affect their economic activity, such as investment and growth prospects, over a longer time horizon. To study this hypothesis, we estimate the relative trends between the two groups before, during, and after the QE cycle triggered by the GFC. The empirical analysis focuses on the trend difference between SMEs and large firms credit access, investment, and sales growth in the three years before and after 2013 compared relative to a base year, 2012. Additionally, we extend the timespan to 2017, to include the effect of a historical expansion in the Turkish

Credit Guarantee Fund (CGF) on SMEs' performance. The expansion of the CGF gave a significant boost to SMEs' credit access by improving their collateral value (Akcigit et al, 2021a) and hence, could contribute to their performance. Our empirical analysis employs a unique administrative dataset that contains the universe of incorporated firms (i.e., those obligated to report financial statements for tax purposes) in Türkiye. The empirical estimation methodology follows a flexible event study specification with 2012 as the baseline year, where we also control firm composition and sector-specific shocks.

Our findings are as follows. First, SMEs enjoyed a significant increase in credit access, investment, and sales growth in 2010-2011, the global capital abundance years, compared to the baseline year of 2012. However, their credit access declined sharply in 2013 following the global tightening due to the Fed's taper tantrum policy in the same year. We found that the effect was stronger for manufacturing firms compared to service firms. One explanation for this result could be the fact that manufacturing firms supply global markets and, therefore, are exposed to a greater shock given their global trade linkages, while the service sectors mostly serve domestic markets (Atsebi et al., 2021). The same negative effect is observed for investment and sales growth in 2014 but with a year lag. While investment recovery trends appear to be similar, service SMEs' sales growth recovered slightly faster than manufacturing SMEs', whereas the sales performance of manufacturing SMEs did not return to 2012 levels until 2017. Overall, our results indicate that the effect of a global tightening, i.e., Fed tapering policy, on SMEs' credit access was immediate with longer-term implications for their investment and sales growth. These effects appear to be more substantial for manufacturing SMEs.

Our paper provides complimentary empirical evidence to previous studies focusing on the key role of SMEs and their performance for the Turkish economy. According to recent statistics, SMEs make up 99.8% of firms, 73.8% of total employment, 64.5 % of total (sales) turnover, and 56.3 of total export sales in 2020 (TOBB, 2020). More importantly, their contribution to job creation is critical. For instance, micro-firms are found to be responsible for the majority of new job creation in Türkiye (Atiyas et al., 2017). Hence, any tightening in credit market conditions and their spillovers to firm performance would be serious for a large proportion of the economy. Similarly, SME growth and investment have been reported as being crucial parts of any growth strategy in Türkiye by Dlugosch et al. (2021), who find a large productivity gap between SMEs and large firms. Studying business

dynamism in Türkiye, Akcigit et al. (2020) show that market concentration has been on the rise threatening business dynamism (e.g., firm growth, entry/exit, young firm entry, etc.,) since 2013 in the country. As one of the potential explanations, the authors point to the tightening in global financial conditions with the announcement of the Fed's tapering policy in mid-2013. Complementing these findings, our paper provides direct evidence for the heterogeneous effects of global capital conditions on SMEs and large firms with long-term implications for SME performance, which is critical to business dynamism and productivity growth in Türkiye.[1]

We also deliver important policy insights for monetary policy design in emerging markets. During and after the COVID-19 pandemic, most countries provided gigantic monetary easing to mitigate the negative economic effects (IMF, 2021). For instance, the Fed's balance sheet increased from $ 4 to $ 9 trillion during this time with similar reactions observed from other major central banks, including the European Central Bank (ECB). Consequently, almost all major developed and emerging economies entered into a tightening era in early 2022 to fight the burning inflationary pressure. While different economic cycles may exhibit varying dynamics, one conclusion that can be drawn from the Turkish experience studied in our paper is that such monetary tightening may lead to more severe and prolonged consequences for SMEs, especially in emerging economies.

The remainder of the paper is organized as follows. Section 2 provides the details of our data. Section 3 introduces the empirical model we employ. Section 4 presents our estimation results. Section 5 concludes.

2   Data and Descriptive Statistics

W e use balance sheets and income statements of incorporated real-sector firms from the Enterprise Information System (EIS) database, provided by the Turkish Ministry of Industry and Technology.[2] The database also includes information on firm characteristics, such as entity

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[1] In line with our findings from Turkish data, Akciğit et al. (2021b) also provide a wide discussion on the potential repercussions of credit access shortcomings for SMEs on business dynamism in other countries.

[2] Unincorporated businesses, usually micro firms, operate under simplified tax regimes and thus, only report simplified tax records, not regular balance sheets and income statements. As simplified tax reports do not contain the same level of granular data as regular financial documents (e.g., bank credits), they are not included in the study.

type, and sector classification at 4-digit NACE level. Firm employment records come from the Social Security Institute's registry, which is also available in the EIS.

While the data is available from 2006 onwards, we focus on the three years before and four years after the Fed tapering era and study the period between 2010 and 2017. Starting from 2010 allows us to capture the differences between SMEs and large firms in their response to the global financial crisis in 2008-2009. We also include the year 2017 in our sample to include the effect of a major credit expansion program, the Credit Guarantee Fund (CGF), on our results. While a comprehensive analysis of the program is beyond the scope of this paper, it is relevant in our context as a credit expansion. Moreover, a separate study is dedicated to identifying its effects on the various firm outcomes in Akciğit et. al., (2021).[3] The EIS data is available for more recent years but we exclude the years after 2017 as there was a large currency shock in 2018, which might have had heterogeneous effects on SMEs and large firms.

We adopted a number of minimal cleaning steps to construct a useful sample for our analysis. More specifically, we dropped firms with unreasonable entries, such as negative assets or debt, and limited the sample to firms with non-zero positive sales and employment. Three key variables of interest, investment rate, credit access, and real sales growth, are analyzed in the study as dependent variables and hence are worth further discussion. We proxy credit access as the ratio of nominal change in total bank credits (i.e., including both short and long-run maturity loans) to total assets $(\frac{B_{t+1}-B_t}{A_t})$, where B_t and A_t are total bank credits at time t.[4] While different investment rate definitions are used in the literature (e.g., Kalemli-Özcan et. al., 2022; Manaresi,

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[3] Briefly, following the geopolitical developments in the summer of 2016 in Türkiye, the government introduced a number of credit stimulus packages, including a major expansion of the public credit guarantee fund program in 2017, to mitigate the potential negative impact of the developments on the domestic economy. The CGF program in 2017 reached 7.6 percent of Turkish GDP share credit stimulus coverage in 2017, which was the biggest, by share of GDP, globally in that year, OECD (2019).

[4] Identifying credit access properly requires firms' credit applications (Brown et. al., 2011) or exploiting an exogenous shock with firm-bank credit-matched data (Amiti and Weinstein, 2018). As our data only contains firm registries with balance sheets and employment, we cannot use either approach. Alternatively, one could focus on firm-level credit growth rather than credit access. However, as many SMEs don't have stable access to bank credits, we would incur a large number of firms either dropping out from the sample or indicating unstable movements, such as large increases from a low base. Therefore, our proxy aims to capture two key concepts: (1) given their asset value, i.e., creditworthiness, how much loans (i.e., proxied from the change in bank credit stock) firms can obtain and (2) we evaluate the loan size relative firm assets as opposed to credit growth. One shortcoming of this approach is that changes in bank credit stock cannot account for the exact loan size given payments in the same year.

and Nicola, 2017), following Farla (2014) and Lamont (1997), we define the investment rate as the nominal difference of total fixed capital stock scaled by nominal sales, $(\frac{K_{t+1}-K_t}{S_t})$, where K_t and S_t are fixed capital stock and sales at time t. Real sales growth is constructed as the annual growth of the real sales adjusted by inflation, $(\frac{RS_{t+1}-RS_t}{RS_t})$, where RS_t is real sales in time t.[5] As the construction of each dependent variable relies on annual differencing, we implicitly require each distinct firm to have at least two consecutive observations to be included in the analysis. Finally, we impose one percent trimming to each variable in the analysis to exclude potential outliers. The SME status is defined based on firms' employment numbers in 2012, the year before the beginning of the Fed tapering period. Firms with at least 250 employees in 2012 are identified as large firms and the rest are referred to as SMEs. On average, we identify 406,000 distinct SMEs and 3,600 large firms in a given year for each dependent variable, which adds up to an approximate total of 3.2 million observations between 2010 and 2017.

In Table 1, we present the summary statistics of the dependent variables used in the analysis for SMEs and large firms separately. According to the table, SME credit access is on average half of the large firms' credit access. In other words, for each unit of assets, SMEs receive significantly fewer credits than large firms. Over the years, the SMEs' credit access was relatively stronger during the years of global capital abundance until 2013, and then gradually decreased in the following years, which finally doubled in 2017 relative to the previous year with the implementation of the CGF program. On the contrary, SMEs' investment performance appears to be relatively stronger than their credit access compared to the large firms. The average SME investment rate is about 64% of the large firms' average investment rate in the full sample. One potential explanation can be that SMEs utilize more of their internal financial resources (e.g., equity or debt support from owners) to finance their investments (Yarba, 2021; Cilasun et al., 2019). Real sales growth, a proxy for firm growth potential, is around two-thirds of large firms for SMEs in the full sample. While it was always positive until 2013, the growth turned to full negative in the post-Fed tapering era for all firms.

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[5] Sales are deflated using the consumer price index of the Turkish Statistical Institute with 2010 as the base year, as the producer price index would only cover the manufacturing sector.

Table 1: Summary Statistics

			Credit access			
		SME			Large	
	Mean	Std. dev.	N	Mean	Std. dev.	N
2010	0.037	0.144	332,040	0.068	0.167	3,600
2011	0.039	0.15	378,678	0.074	0.167	3,750
2012	0.029	0.142	455,311	0.051	0.154	3,920
2013	0.032	0.147	485,287	0.075	0.167	3,918
2014	0.03	0.144	432,223	0.042	0.143	3,762
2015	0.026	0.138	398,300	0.046	0.137	3,591
2016	0.018	0.127	367,691	0.03	0.126	3,395
2017	0.036	0.147	332,897	0.044	0.137	3,259
Total	0.03	0.142	3,182,427	0.056	0.154	29,195
			Investment			
		SME			Large	
	Mean	Std. dev.	N	Mean	Std. dev.	N
2010	0.023	0.115	338,737	0.038	0.13	3,588
2011	0.027	0.118	385,413	0.046	0.127	3,741
2012	0.021	0.117	462,551	0.038	0.12	3,871
2013	0.021	0.118	492,861	0.033	0.119	3,886
2014	0.02	0.118	438,869	0.027	0.115	3,726
2015	0.022	0.121	404,427	0.026	0.121	3,560
2016	0.018	0.119	373,492	0.025	0.126	3,356
2017	0.019	0.119	352,408	0.024	0.114	3,225
Total	0.022	0.118	3,248,758	0.034	0.123	28,953
			Real sales growth			
		SME			Large	
	Mean	Std. dev.	N	Mean	Std. dev.	N
2010	0.102	0.588	334,031	0.167	0.556	3,594
2011	0.163	0.586	380,417	0.215	0.518	3,732
2012	0.045	0.628	456,568	0.14	0.536	3,899
2013	0.052	0.617	487,165	0.062	0.528	3,912
2014	-0.008	0.551	435,419	-0.006	0.502	3,742
2015	-0.014	0.546	400,998	-0.044	0.509	3,572
2016	-0.029	0.555	369,618	-0.02	0.543	3,364
2017	-0.031	0.552	348,252	0.001	0.513	3,238
Total	0.043	0.587	3,212,468	0.075	0.535	29,053

Notes: Credit access is the ratio of nominal change in bank loans to assets. The investment rate is the change in nominal fixed asset stock to net sales. Real sales growth is the growth in real net sales. To exclude outliers, 1 percent trimming is applied to all three variables.

Overall, the sample averages indicate a striking decline in credit access of all firms, which seems steeper for SMEs, followed by a gradual decline in the performance indicators especially in the post-2013 era. However, the presented summary statistics do not control for various sector-, region-, and firm-level heterogeneity and may therefore be misleading. In the following section, we provide a formal empirical framework to test the relative difference in credit access, investment, and sales growth of large and SME firms over the sample years.

3   Estimation

We estimate a linear panel event study model to identify the shifts in the SME trends relative to large firms in terms of credit access, investment rate, and growth performance in the post-Fed tapering era. The model is:

$$y_{it} = \Sigma_{t=2010}^{2011}\beta_t SME_i * \delta_t + \Sigma_{t=2013}^{2017}\beta_t SME_i * \delta_t + f_i + \rho_{spt} + e_{it}$$

where i indexes firms and t indexes years.   The dependent variables, $y_{i,t}$, are credit access, investment rate, and sales growth at the firm level in a given year. On the right-hand side, SME is firms' SME status that is equal to one for SMEs in 2012; otherwise, zero for large firms. δ_t captures year fixed-effects. Firm fixed-effects are captured by f_i. We also control for sector-region-time fixed effects, ρ_{spt} at the province (NUTS-3), and 2-digit NACE sector level. The inclusion of the firm fixed-effects allows us to control for changes in the firm composition through new firm entry and exit. The sector- region-year fixed- effects imply that we compare large and SME firms within the same sector-province cell in any given year. This is important to remove any technological shocks or differential trends in price indices at the sector level or the effect of regional shocks, such as the arrival of Syrian refugees in Türkiye. We treat 2012 as the reference year in the estimations, the year before the Fed tapering era. Hence, each β_t coefficient estimates the difference between SMEs and large firms relative to the baseline year of 2012. More specifically, we employ five leading years, 2013 -2017, after the event and three years before the event, 2010-2012. Positive estimates of β_t imply a stronger

improvement in SMEs' performance of the dependent variable relative to large firms compared to this difference in 2012. By the same token, negative coefficient estimates imply a worsening in the performance of SMEs in that year compared to the baseline.

We run the model with the full sample, covering all sectors, as well as provide estimates from sub-samples of manufacturing and service sectors, separately. This is to account for sectoral heterogeneity, where average firm size and capital intensity may also affect our results. For instance, an average firm in the manufacturing sector is generally bigger and more capital-intensive compared to service sector firms, which may affect its creditworthiness and investment appetite.

While the baseline model estimates capture the difference between SMEs and large firms, there may still be a sizable residual since the outcome variables will be affected by time-varying firm characteristics. In an alternative specification, we also employ main firm controls that are size (i.e., employment), profitability (i.e., the ratio of operating profits to total sales), and leverage (i.e., the ratio of total liabilities to assets). This exercise allows us to interpret the coefficients as the difference in SME and large firms after controlling for key firm performance indicators.[6]

Our identification does not necessarily expect parallel trends between SMEs and large firms prior to 2013. The empirical specification is instead designed to test whether the difference between SME and large firm performance shifts following Fed tapering in 2013.

4 Results

The estimation results are reported in Figures 1–3 for credit access, investment rate, and sales growth. The figures present the coefficient estimates for each year between 2010 and 2017 with 2012 as the reference year. We show the results for the full sample in panel (a) and for the manufacturing and service sectors in panels (b) and (c). A full set of coefficient estimates are also reported in Table A1 of the Appendix.

The results show that SMEs' performance was stronger in credit access and performance variables in 2010 and 2011 than the large firms relative to the difference in 2012. Following

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[6] This specification may not rule out the so-called bad-control problem since the lagged values will themselves be indirectly affected by Fed tapering in the post years.

the reference year, SME credit access experienced the lowest level in 2013 during the sample period (panel (a) of Figure 1). That largest decline corresponds to the beginning of the tightening in global capital conditions, mostly due to the Fed tapering announcement in May of 2013. While the negative trend continued in the following years, its magnitude reduced gradually, and the effect eventually faded out in 2016. With the implementation of the CGF program in 2017, SMEs' credit access seemed to gain a significant boost in that year. As the program's key focus was to improve SMEs' credit access, its impact on SMEs seems to be particularly strong compared to large firms.

Similar trends are observed in the estimates for the manufacturing and service sectors, where SMEs in both sectors recorded the lowest credit access in 2013 relative to the large firms, and the negative impact gradually declined in the following years. Finally, the negative trend reverts to a positive and even higher level in 2016 relative to its level in the reference year for the service sector SMEs despite the fact that the SMEs in the manufacturing sector continued to experience lower credit access until 2017.

Figure 1: SME Credit Access

a) All Sectors
b) Manfacturing
c) Services
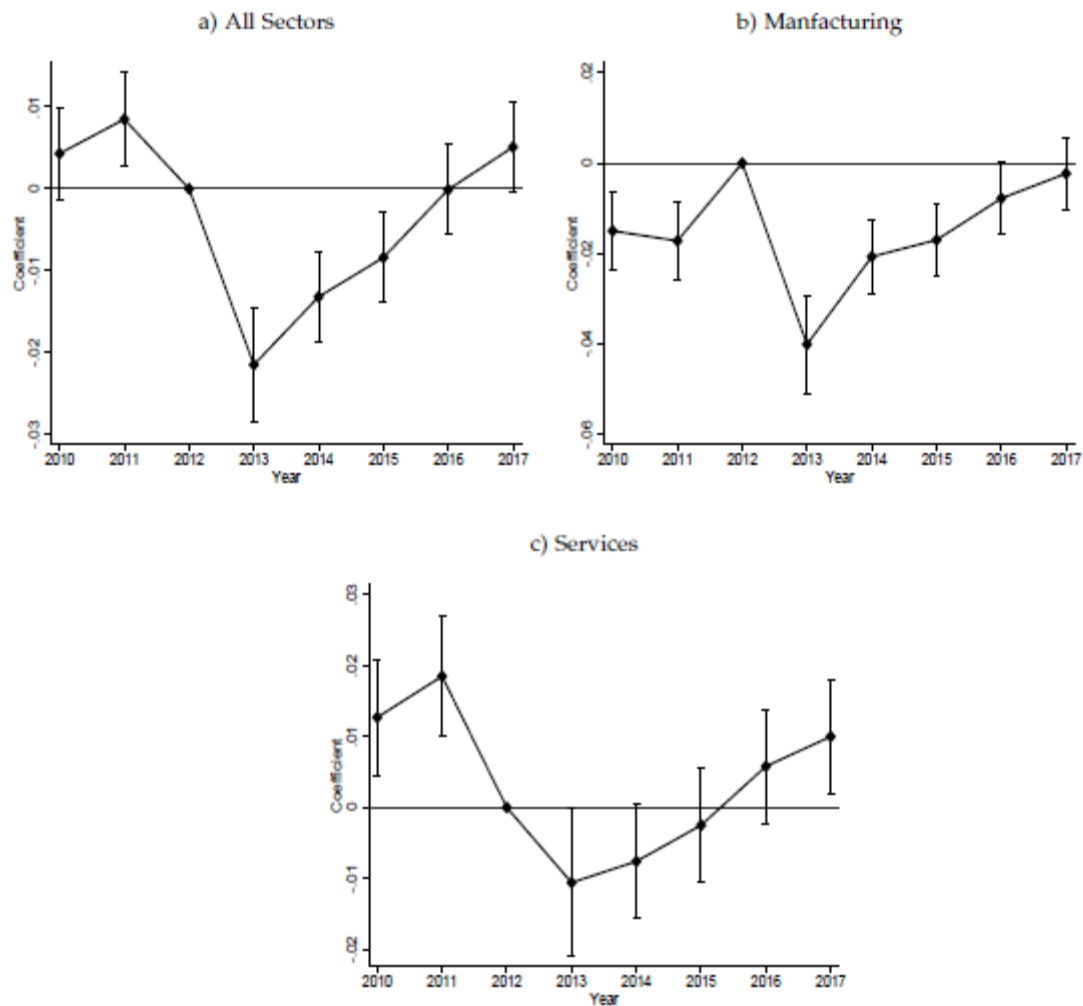
Notes: Dependent variable is credit access in all the models, which is defined as the ratio of the annual difference in a firm's total bank credits to assets. The figures display the coefficient estimates for SME trends relative to large firms in proportion to this trend in 2012. All the models control for firm fixed effects, year fixed effects, NACE2-year fixed effects and NACE2-nuts2-year fixed effects. Panel a contains all firms with a sample size of 3,211,622; Panel b contains only manufacturing firms with a sample size of 614,092 and Panel c contains only service firms with a sample size of 2,277,580. One percent trimming is applied to the dependent variable to clean potential outliers.

Figure 2 displays the estimation results for the SMEs' investment performance relative to large firms. The figure indicates the sharpest decline is in 2014 with a year delay after 2013 (panel a). Such an adjustment process is expected, as investment decisions require longer planning and implementation phases.[7] Moreover, the investment performance of
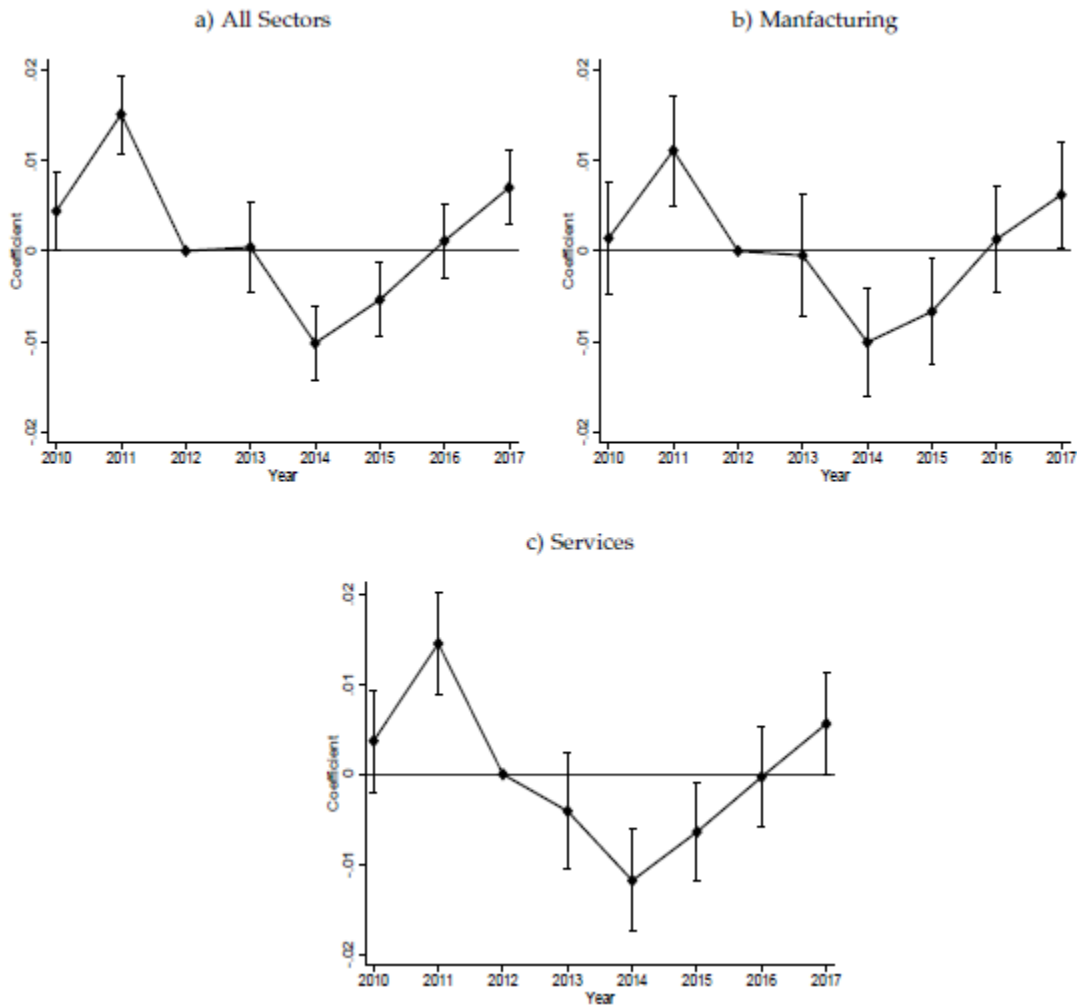
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[7] The lag between investment plans and realization has long been recognized in the literature (Eisner 1962).

SMEs continues to be lower than large firms in the following years, even though the size of the effect declines. In 2016, the negative effect on SME investment largely disappears and the estimates revert to a significant positive effect in 2017, following the CGF program. We observe similar trends in the estimates with the sub-samples of manufacturing and service sector firms. The investment performance of manufacturing and service sector SMEs is also recorded to be lowest in 2014, which fades out gradually in the following two years. The relative investment performance of the manufacturing sector SMEs appears to be similar to that of the service sector firms in the two following years. Finally, the estimates for both sectors indicate a positive recovery of investment with the CGF program in 2017.

Estimates for SMEs' relative real sales growth are displayed in Figure 3. Similar to the investment trends, SMEs' growth prospects relative to the large firms are recorded to be lowest in 2014. The relative difference remained negative in 2015 with a lower magnitude estimated and turned positive in 2016 (panel a). Resembling the effects on credit access, we find that the recovery of SME sales growth is delayed by a year in manufacturing compared to services. With the public CGF program in 2017, SMEs increased their growth potential more than large firms. Estimates with the sub-samples of the manufacturing and service sector firms indicate similar trends with a minor difference, where the service sector SMEs recorded a faster recovery compared to SMEs in the manufacturing sector.
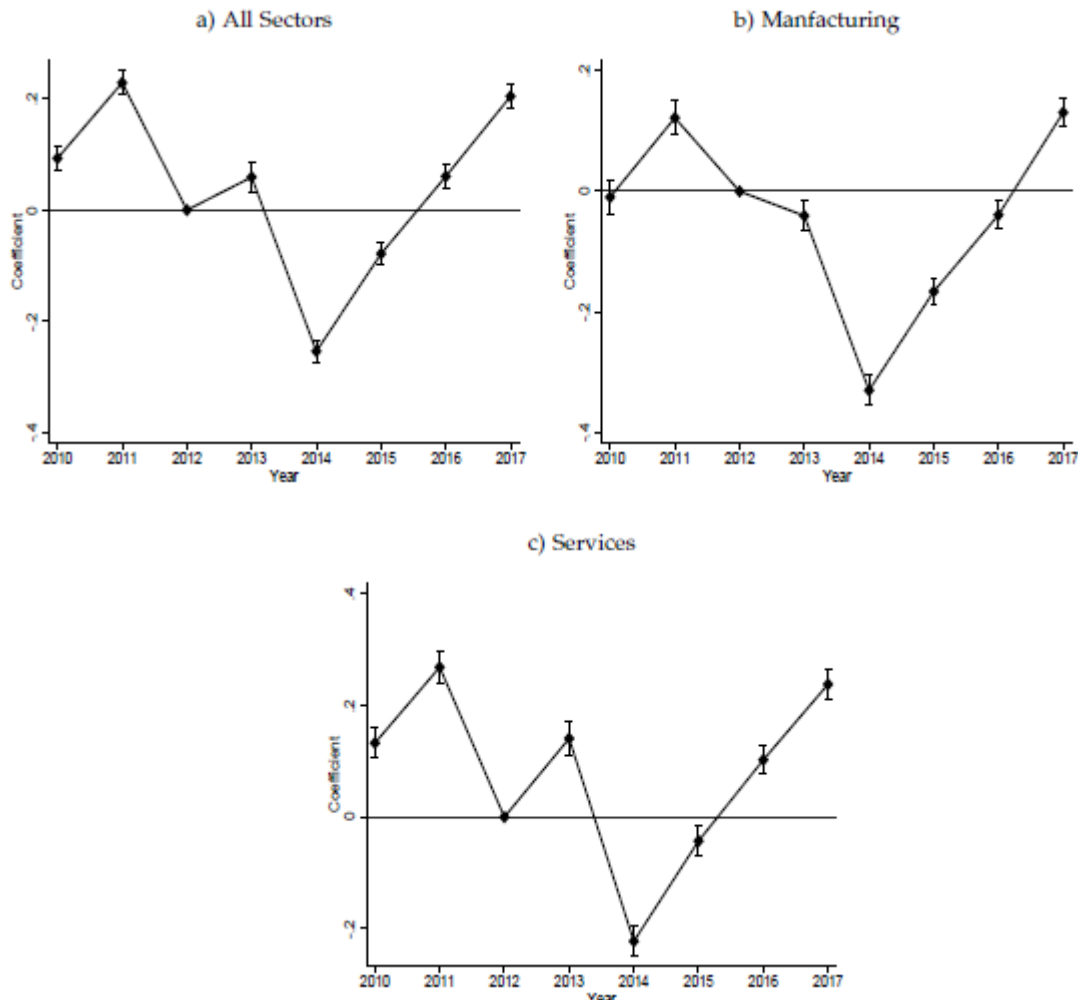
To provide further robustness checks on our estimates, we include additional firm controls in our baseline model. The main firm controls are employed, including firm size (i.e., employment), profitability (i.e., operating profit to sales ratio), and leverage (i.e., total liabilities to assets) which all are lagged by one year to avoid reverse causality. Summary statistics of the main firm controls are displayed in Table A2, and the full set of the estimation results is presented in Table A3 of the Appendix. Conditioning our estimates on main firm controls accounts for time-varying firm heterogeneity does not change our main conclusion, as the additional controls neither statistically nor economically affect the main estimates discussed above.

Figure 2: SME Investment

Notes: Dependent variable is investment rate in all the models, which is defined as the ratio of the annual difference in fixed capital stock to net sales. The figures display the coefficient estimates for SME trends relative to large firms in proportion to this trend in 2012. All the models control for firm fixed effects, year fixed effects, NACE2-year fixed effects and NACE2-nuts2-year fixed effects. Panel a contains all firms with a sample size of 3,277,711; Panel b contains only manufacturing firms with a sample size of 630,536 and Panel c contains only service firms with a sample size of 2,336,908. One percent trimming is applied to the dependent variable to clean potential outliers.

Figure 3: SME Sales Growth

Notes: Dependent variable is investment rate in all the models, which is defined as the ratio of the annual difference in fixed capital stock to net sales. The figures display the coefficient estimates for SME trends relative to large firms in proportion to this trend in 2012. All the models control for firm fixed effects, year fixed effects, NACE2-year fixed effects and NACE2-nuts2-year fixed effects. Panel a contains all firms with a sample size of 3,277,711; Panel b contains only manufacturing firms with a sample size of 630,536 and Panel c contains only service firms with a sample size of 2,336,908. One percent trimming is applied to the dependent variable to clean potential outliers.

5   Conclusions

Following the GFC, the world experienced two distinct episodes: the QE era followed by a tapering era after mid-2013. Similar to many other emerging economies, the Turkish domestic credit market gained significant support in the first episode, which then switched to large contractions in the second episode. Our results suggest that these changes had a more pronounced impact on the credit access of SMEs compared to larger firms, carrying long-

term implications for their investment and growth prospects. During the QE era, SMEs experienced stronger credit access, investment, and growth performance. However, with the global capital tightened in 2013, SMEs' domestic credit access was hit more substantially than large firms in that year, marking the lowest access level during the eight years leading up to 2017. The transmission of this negative effect on SMEs' investment performance and growth prospects occurred with a one-year lag, where SMEs experienced their lowest investment and growth performance in 2014. The negative trend in these key performance indicators gradually subsided over the following three years. Our results also indicate that the global capital tightening led to a stronger contraction in the credit access of manufacturing SMEs as compared to the service sector firms. While the impact on the SMEs' investment performance relative to the large firms did not differ much across the two sectors, manufacturing SMEs experienced a stronger decline in sales growth in 2014 and a longer recovery until 2017.

These results provide important messages for monetary policy design in emerging economies. Following the large expansionary period during and after the COVID-19 pandemic in especially major developed economies, we are now in the contraction phase, where major central banks (e.g., the Fed, ECB) have been following strict monetary tightening to fight stubborn global inflation. Despite the unique economic challenges posed by the recent pandemic, lessons from past experiences remain highly relevant when making informed monetary policy decisions. It is probable that the contractions in global monetary policies will have a more detrimental impact on SME credit access and real performance in emerging economies, which may potentially adversely affect business dynamism in these countries (Akcigit et. al., 2021). In that regard, supportive policies with a more precise focus on SMEs may serve to alleviate the long-lasting adverse effects of the global capital tightening on their performance.

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Table A1: Main Results

	Credit Access			Investment Rate			Real Sales Growth		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	All	Manufacturing	Services	All	Manufacturing	Services	All	Manufacturing	Services
SME*2010	0.0043	-0.0150***	0.0127***	0.0044**	0.0014	0.0037	0.0929***	-0.0097	0.1325***
	(0.0029)	(0.0045)	(0.0042)	(0.0022)	(0.0032)	(0.0029)	(0.0111)	(0.0140)	(0.0140)
SME*2011	0.0085***	-0.0172***	0.0185***	0.0151***	0.0111***	0.0145***	0.2285***	0.1217***	0.2682***
	(0.0029)	(0.0045)	(0.0043)	(0.0022)	(0.0031)	(0.0029)	(0.0112)	(0.0141)	(0.0141)
SME*2013	-0.0215***	-0.0401***	-0.0106**	0.0004	-0.0005	-0.0041	0.0591***	-0.0405***	0.1406***
	(0.0036)	(0.0055)	(0.0053)	(0.0025)	(0.0034)	(0.0033)	(0.0132)	(0.0132)	(0.0164)
SME*2014	-0.0132***	-0.0207***	-0.0076*	-0.0102***	-0.0101***	-0.0118***	-0.2534***	-0.3295***	-0.2223***
	(0.0028)	(0.0042)	(0.0041)	(0.0021)	(0.0030)	(0.0029)	(0.0104)	(0.0125)	(0.0134)
SME*2015	-0.0084***	-0.0170***	-0.0025	-0.0054**	-0.0067**	-0.0064**	-0.0784***	-0.1659***	-0.0428***
	(0.0028)	(0.0041)	(0.0041)	(0.0021)	(0.0030)	(0.0028)	(0.0103)	(0.0118)	(0.0133)
SME*2016	-0.0001	-0.0078*	0.0058	0.0011	0.0013	-0.0003	0.0605***	-0.0390***	0.1023***
	(0.0028)	(0.0041)	(0.0041)	(0.0021)	(0.0030)	(0.0028)	(0.0103)	(0.0118)	(0.0133)
SME*2017	0.0051*	-0.0023	0.0100**	0.0070***	0.0062**	0.0056*	0.2042***	0.1305***	0.2376***
	(0.0028)	(0.0041)	(0.0041)	(0.0021)	(0.0030)	(0.0029)	(0.0103)	(0.0119)	(0.0133)
Constant	0.0353***	0.0487***	0.0280***	0.0212***	0.0265***	0.0198***	0.0234***	0.1084***	-0.0166*
	(0.0019)	(0.0028)	(0.0029)	(0.0014)	(0.0019)	(0.0019)	(0.0071)	(0.0075)	(0.0091)
Observations	3,211,622	614,092	2,277,580	3,277,711	630,536	2,336,908	3,241,521	619,698	2,315,948
R-squared	0.259	0.259	0.254	0.270	0.265	0.270	0.247	0.251	0.262

Notes: *** p<0.01, ** p<0.05, * p<0.1. Robust (clustered at firm level) standard errors in parentheses. Excluded (reference) year in all the models is 2012. All specifications include NACE-2 level sector x province x year and firm fixed effects.

Table A2: Summary Statistics for Firm Controls

Variable	SME			Large		
	Mean	Std.dev.	N	Mean	Std. dev.	N
Employment	1.67	1.18	3,257,877	6.04	1.08	29,315
Profitability Ratio	0.03	0.26	3,249,886	0.05	0.16	29,267
Leverage	0.64	0.50	3,247,087	0.63	0.31	29,288

Notes: Employment is in logs. The profitability ratio is operating profits divided by firm sales. Leverage is defined as the ratio of total liabilities (including long and short-term trade credits, bank credits and other debt) to assets. All the variables are winsorized at a 1 percent level to accommodate outliers.

Table A3: Estimations with Firm Controls

	Credit Access			Investment Rate			Real Sales Growth		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	All	Manufacturing	Services	All	Manufacturing	Services	All	Manufacturing	Services
SME*2010	0.0052*	-0.0136***	0.0138***	0.0047**	0.0013	0.0044	0.0984***	-0.0134	0.1432***
	(0.0029)	(0.0045)	(0.0042)	(0.0022)	(0.0032)	(0.0029)	(0.0110)	(0.0138)	(0.0137)
SME*2011	0.0092***	-0.0162***	0.0194***	0.0158***	0.0114***	0.0156***	0.2415***	0.1312***	0.2875***
	(0.0029)	(0.0045)	(0.0043)	(0.0022)	(0.0031)	(0.0029)	(0.0111)	(0.0139)	(0.0138)
SME*2013	-0.0216***	-0.0394***	-0.0109**	-0.0007	-0.0011	-0.0054*	0.0526***	-0.0341***	0.1237***
	(0.0036)	(0.0055)	(0.0053)	(0.0025)	(0.0034)	(0.0033)	(0.0131)	(0.0130)	(0.0160)
SME*2014	-0.0115***	-0.0197***	-0.0054	-0.0082***	-0.0092***	-0.0092***	-0.2376***	-0.3219***	-0.1942***
	(0.0028)	(0.0042)	(0.0041)	(0.0021)	(0.0030)	(0.0029)	(0.0104)	(0.0124)	(0.0133)
SME*2015	-0.0074***	-0.0166***	-0.0010	-0.0042**	-0.0064**	-0.0046	-0.0713***	-0.1639***	-0.0265**
	(0.0028)	(0.0041)	(0.0041)	(0.0021)	(0.0030)	(0.0029)	(0.0102)	(0.0117)	(0.0132)
SME*2016	0.0004	-0.0080*	0.0066	0.0018	0.0012	0.0008	0.0622***	-0.0427***	0.1107***
	(0.0028)	(0.0041)	(0.0041)	(0.0021)	(0.0030)	(0.0029)	(0.0102)	(0.0117)	(0.0131)
SME*2017	0.0052*	-0.0029	0.0104**	0.0071***	0.0055*	0.0060**	0.2007***	0.1217***	0.2381***
	(0.0028)	(0.0041)	(0.0041)	(0.0021)	(0.0030)	(0.0029)	(0.0102)	(0.0118)	(0.0132)
Constant	0.0563***	0.0775***	0.0479***	0.0368***	0.0466***	0.0346***	0.1108***	0.2830***	0.1029***
	(0.0020)	(0.0031)	(0.0029)	(0.0014)	(0.0022)	(0.0019)	(0.0072)	(0.0093)	(0.0091)
Observations	3,208,423	613,998	2,275,411	3,275,909	630,424	2,335,633	3,240,146	619,612	2,315,008
R-squared	0.261	0.262	0.256	0.271	0.266	0.271	0.267	0.276	0.283

Notes: *** p<0.01, ** p<0.05, * p<0.1. Robust (clustered at firm level) standard errors in parentheses. Excluded (reference) year in all the models is 2012. All specifications include firm controls, NACE-2 level sector x province x year and firm fixed effects. Firm controls include log of employment, profitability ratio and leverage, and lagged for one year.