Research Article / *Araştırma Makalesi*

FX BORROWING, EMPLOYMENT AND FIRM GROWTH*

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ABSTRACT

In this paper, I explore the role of foreign currency-denominated loans on employment and firm growth. I utilize the Coarsened Exact Matching (CEM) methodology using a rich firm-level dataset in order to find counterpart firms that are similar in terms of variables such as net sales, total assets, number of employees, the share of total debt in assets, the share of tangible assets in total assets, export to total sales ratio but different in the currency of the loan used. Then I use panel data fixed effect regressions to measure the impact of FX loans on firm employment and sales growth compared to TL loans. More specifically, I analyze whether firms that use FX-denominated credit more intensively have better firm outcomes or not. The results point to the diminishing impact of FX loans on firm growth in recent years. While the firms borrowed in FX had a higher growth rate compared to TL-borrowed firms until 2017, there is no significant difference in firm employment growth or sales growth performance between FX-indebted firms and TL-indebted firms after 2017.

Keywords: Firm growth; Employment; FX loan.

JEL Classification Codes: L25, J23, G32.

YP CİNSİNDEN BORÇLANMA, İSTİHDAM VE FİRMA BÜYÜMESİ

ÖZET

Bu çalışmada Yabancı Para (YP) cinsinden borçlanmanın istihdam ve firma büyümesi ile ilişkisi incelenmiştir. Firma seviyesinde detaylı bir veri setinde genişletilmiş tam eşleme (coarsened exact matching) yöntemi uygulanarak net satışlar, toplam varlıklar, çalışan sayısı, toplam borcun varlıklar içindeki payı, maddi duran varlıkların toplam varlıklar içindeki payı, ihracatın toplam satışlara oranı gibi göstergeler açısından benzer olan fakat kullanılan kredinin para birimi farklı olan firmalar tespit edilmektedir. Ardından panel veri sabit etkiler modelleri kullanılarak YP cinsinden kredilerin firma büyümesindeki etkisi incelenmektedir. Diğer bir ifadeyle, daha yüksek YP cinsinden kredi kullanım payına sahip firmaların daha iyi firma sonuçlarına sahip olup olmadığını analiz edilmektedir. Sonuçlar YP kredilerin firma büyümesi üzerindeki rolünün son yıllarda azaldığını göstermektedir. 2017 yılına kadar olan süreçte YP kredi kullanan firmalar benzer miktarda TL kredi kullanan firmalara göre daha yüksek büyüme oranına sahipken 2017 sonrası dönemde bu ilişkinin değiştiği görülmektedir.

Anahtar Kelimeler: Firma büyümesi; İstihdam; Yabancı para borç.

JEL Kodları: L25, J23, G32.

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1. Introduction and Literature Review

Access to finance is crucial for firms and has a significant impact on key macroeconomic factors like production, employment, and investment. In developing countries like Türkiye, banks are the primary financial intermediaries, and loans are a vital means of accessing finance. Studies have shown that loans have a substantial effect on real performance measures, including employment, investment, and growth for firms (Fazzari et al.,1989; Benmelech et al. 2011; Amiti & Weinstein,2011; Chodorow-Reich,2014).

In developing countries, borrowing in foreign currency can be a crucial option for companies with limited access to financing in their own currency from local financial systems. However, it also comes with a substantial balance sheet risk, as fluctuations in capital movements can lead to exchange rate depreciation. This phenomenon, known as liability dollarization, raises important research questions about its impact on firms' employment, sales, exports, and investments in tangible fixed assets.

In this study, I investigate the relationship between firms' FX loan utilization and various variables regarding firm performance such as employment growth, net sales growth, export growth, and tangible asset investment. For this purpose, I merge two firm-level data sets for the period between 2010-2020. First, I use the data on the financial statements of the firms that contain the balance sheet details and the income statements. This is an annual data set. Second, I use the company loan usage data reported by the banks on a monthly basis. For the latter data set, to reach the annual loan usage, I converge the data adding up the monthly loan usage. With the detailed micro-data set obtained, the relationship of FX borrowing behavior with sales growth, employment growth, and other firm performance indicators was estimated by panel fixed effect regressions. In addition to this method, in order to alleviate the concerns regarding the potential endogeneity between the firm borrowing and firm performance, the coarsened exact matching method (CEM) was applied, and the panel fixed effects regressions were estimated for the sample of companies that were similar to each other in many characteristics but differ in the currency type of the loan used.

Findings obtained from panel data fixed effects models show that there is a positive relationship between firms' FX loan utilization and their employment and net sales growth in the period until 2017. After 2017, when the exchange rate volatility was relatively higher, the relationship between FX borrowing and variables such as net sales growth, employment growth, and tangible fixed asset investment weakened. It has been observed that this relationship between foreign currency borrowing and various firm performance measures is similar for long-term loans and for total loans.

There is a developed literature on the relationship between loan growth and firm performance. The available literature shows that firms' credit constraints have an important role in firm performance. From the early literature, Fazzari et al. (1988) pointed on that external capital and internal capital are not perfect substitutes and financial structure matters for the firm performance and showed the importance of loans in firm performance. Amiti & Weinstein (2018) use a large sample of matched bank-firm level data from Japan for the period 1990-2010, and separate firm borrowing shocks from supply shocks. Exploiting the detailed data set, they highlight that supply-side financial shocks have a significant effect on firm investment

behavior. Chava & Roberts (2008) discussed the effect of financing friction on firm investment and the potential mechanisms. In terms of the mechanisms, they show that when the creditors resort to the threat of accelerating the loan, capital investments decline sharply. There is also empirical evidence on the relationship between financing and export performance. Amiti & Weinstein (2011) point to the collapse of exports relative to output during the financial crisis and investigate the link between weakening bank health and the drops in exports relative to output. They address the potential endogeneity issue between borrowing and export performance and provide causal evidence on the abovementioned link. Their results imply economically and statistically significant effects of the health of financial institutions on firm-level exports.

Regarding the evidence on the relationship between financing and employment outcomes, Benmelech et al. (2011) use quasi-experimental methodologies to understand the impact of finance on employment decisions of firms in the US. They find that the responsiveness of the employment decisions of companies to financial health is almost as strong as the responsiveness of investment behavior to cash flows, highlighting the significance of the availability of credit on employment decisions at the firm level, and at the aggregate level. Chodorow-Reich (2014) constructs a new data set that includes information on banking relations and employment levels of 2000 firms in the US for the period of 2008-2009. Then they exploit the Lehman crisis as a natural experiment where firms that had intense relationships with less healthy banks before the crisis were more likely to switch to a new lender and pay higher interest rates. These firms not only paid a higher interest rate while borrowing but also reduced employment by more relative to the clients of healthier banks. Yet, their findings do not reject the hypothesis of no effect for the largest companies.

There is also extensive literature on the effects of foreign currency loans in developing countries. Acharya & Vij (2015) conducted a study using data from Indian firms to examine the impact of macroprudential policies on their foreign currency borrowing. They observed that firms are more likely to issue foreign currency debt when the dollar 'carry trade' is profitable. However, when regulators implement macroprudential policies to restrict capital flows, this trend decreases. The study concludes that during favorable financial conditions, firms' equity exposure to FX risk increases after issuance, which can make the external sector vulnerable during the 'taper tantrum'. In their study, Bruno & Shin (2017) analyzed data at the firm level and looked into the borrowing behavior of non-financial corporations in US dollars. The study found that companies outside the US tend to issue US dollar-denominated bonds when the dollar carry trade is favorable, particularly those with significant cash reserves in emerging markets. Du & Schreger (2016) analyzed data from 14 emerging countries and found that countries with high foreign exchange (FX) indebtedness among corporate firms have a higher probability of sovereign default risk. This aligns with Galindo et al. (2003)'s research, which found that high indebtedness can weaken the impact of expansionary policies on the economy. In his 2005 study, Aguiar examined firm-level investment during the 1994 Mexican crisis. One of his key findings was that companies with more short-term foreign currency debt before the crisis and devaluation had lower post-devaluation investment performance. Kim et al. (2015) found that small-scale FX-denominated firms in South Korea had poor outcomes. Bordeaux et al. (2009) studied data from 45 countries to investigate the effects of liability dollarization on growth and discovered that it was more closely related to financial debt crises in countries with lower reserves and policy credibility. Luca & Petrova (2008) analyzed transition econ-

omies and discussed foreign currency use in an optimal portfolio allocation model. The data collected from 21 transition economies between 1990–2003 suggested that credit dollarization was a result of a combination of domestic deposit dollarization and banks' efforts for currency-matched portfolios.

The study conducted by Alp & Yalçın (2015) in Türkiye analyzed a data set of firms from the Central Bank of the Republic of Türkiye between 1996 and 2010. Through the use of dynamic panel regressions (GMM), it was found that liability dollarization rates had a positive impact on the sales and employment growth of non-financial firms. However, the study also revealed that liability dollarization had a negative effect on firms with low export shares. On a macro level, Karagol (2012) employed multivariate cointegration techniques to examine the debt service burden and investments in Türkiye. The author discovered that external debt service has negative short-term effects on economic growth. In another study, Kesriyeli et al. (2011) utilized the dynamic panel data Generalized Method of Moments to investigate the liability dollarization of nonfinancial sectors in Türkiye. Their findings suggested that devaluations have a contractionary effect on sectors with higher liability dollarization in terms of investments and profits.

This paper contributes to the above literature in several ways. Overall the firm-level data on foreign currency borrowing and firm performance is relatively well-established for the developed countries. As FX borrowing is a more contradictory phenomenon in developing countries, there are plenty of studies investigating foreign borrowing and potential risks to the firms especially during crisis periods as well. Yet, for both cases, the focus of the literature is on the financial aspects and investment, and there is less evidence of employment outcomes. Second, most studies that focus on Türkiye examine the macro relationship between FX borrowing and aggregate indicators. Since the use of firm-level data lately became available, evidence that relies on a rich set of data on firm and borrowing credit characteristics is limited. This research utilizes a comprehensive dataset that integrates information on company financial statements, employment statistics, and borrowing records from 2010 to 2020. The study concentrates on Türkiye's situation and examines specific aspects of the connection, rendering the findings applicable to similar countries. Furthermore, the study's distinct implications for two periods demonstrate the diverse impact of foreign exchange borrowing over time.

The remainder of the study consists of the following sections: the second section describes the datasets and method, the third section presents the regression results, and the fourth section summarizes the results and discusses potential policy recommendations regarding the subject matter.

2. Data and Methodology

The study utilizes two distinct micro-datasets. The data set on the loan utilization of the companies is obtained from the company loan disbursement data set, which the banks notify the BRSA on a monthly basis via the forms with the code KR202/302. The obtained credit utilization data are aggregated at the firm-year level. In the study, another dataset was utilized which comprised financial statements such as income statements and balance sheets belonging to the manufacturing sector (sectors between Nace 10 and Nace 33). This dataset includes employment levels as a sub-component. The financial statements of non-financial capital com-

panies are compiled annually by the Revenue Administration. However, public companies and financial companies are not included in this dataset.

The company loan usage data set was aggregated and combined with the company financial statements data. I excluded observations with total assets or sales less than 10,000 TL or total loan utilization less than 100,000 TL in the relevant year. I also winsorized the variables at the 1 percent level. After these processes, I obtained a dataset covering manufacturing companies (sectors between Nace 10 and Nace 33) for the period of 2010-2020. I then estimated the model using this dataset.

$$Y_{it} = \beta_0 + \beta_1 FXBorrowingRatio_{i,t-1} + X_{i,t-1} + \partial_i + \varphi_j x \mu_t + \varepsilon_{i,t} \qquad (1)$$

In the model, Y variable represents firm performance indicators such as sales growth, employment growth, investment, export growth in year t, FXBorrowingRatio variable, the share of the firm's FX loan used in t-1 in the total loan used in the same year, X variable set, t -1 represents firm-year-level control variables such as firm size (SME vs. Large), indebtedness measured as the ratio of total debt to total assets, cash ratio, the ratio of exports to total sales, ∂ firm fixed effects, $\phi x \mu$ sector-year fixed effects. The loan utilization is all calculated in TL, meaning that the TL value of FX debts was calculated at the time of borrowing and added to TL borrowing to reach the total credit utilization. To calculate the annual utilization, I collected each monthly loan utilization value. It's important to note that this value may differ from the debt stock due to repayments made during the process. The FXBorrowingRatio variable is intended to measure the FX share in the credit flow, rather than the share in the credit stock.

To analyze the data with a comparable sample, I utilized the Coarsened Exact Matching (CEM) technique to pair up similar companies based on their characteristics from the previous time period (t-1). These characteristics include net sales, total assets, number of employees, the ratio of total debt to assets, the ratio of tangible assets in total assets, and the export to total sales ratio. I divided firms into ten groups with an equal number of firms for each matching variable. Then, firms that fall in the same group in each of the six matching variables were matched to each other one-to-one; those with a large share of FX loan utilization to total loan utilization (those with a ratio greater than 90 percent) were assigned 1, and those with a very low share of FX loan utilization to total loan utilization (those with a ratio less than 10 percent) were assigned 0 for the FXBorrower indicator in the CEM methodology. Then, the effect of being an FXBorrower was estimated in the matched sample compared to TL borrowers.

Table 1 presents the outcomes of the matching process. Prior to matching, the t-test results for all variables were significant at the 1 percent level. However, after matching, the significance vanished and the mean distributions became similar. This means that firm characteristics were balanced between those borrowing FX and those borrowing TL. The null hypothesis, which stated that firms borrowing TL and FX had different averages for net sales, total assets, total indebtedness, exports, and loan size characteristics, was rejected.

Table 1: Firm Characteristics for the Whole Sample and the Matched Sample

		Mean		Observation		
		TL	*YP*	*TL*	*YP*	*T-test*
Net Sales	All Sample	14.92	16.53	332,501	24,126	-148.48***
	Matched Sample	15.69	15.70	5,736	5,736	-0.32
Total Assets	All Sample	14.75	16.41	332,501	24,126	-161.90***
	Matched Sample	15.48	15.51	5,736	5,736	-1.09
Employment	All Sample	39.63	157.68	332,501	24,126	-84.85***
	Matched Sample	57.58	56.29	5,736	5,736	0.78
Export Ratio	All Sample	0.07	0.37	332,501	24,126	-232.04***
	Matched Sample	0.09	0.09	5,736	5,736	-0.62
Total Debt	All Sample	0.65	0.61	332,501	24,126	26.05***
	Matched Sample	0.64	0.63	5,736	5,736	1.49
Loan	All Sample	6.29	8.12	332,501	24,126	-153.27***
	Matched Sample	7.18	7.19	5,736	5,736	-0.31
Tangible Assets	All Sample	0.22	0.23	332,501	24,126	-5.45***
	Matched Sample	0.17	0.17	5,736	5,736	1.18

Source: Revenue Administration and BRSA. This table represents that cleaned sample of the analysis and may differ from the national statistics for various reasons. Net sales, total assets, and credit received are in logarithmic form. Tangible fixed assets and total debt are expressed as the share in total assets. The export variable is expressed as a ratio in total sales. Observations with total assets or sales of less than 10 thousand TL were excluded from the sample before the matching process ***, **, * indicate statistical significance at the level of 1%, 5%, and 10%, respectively.

3. Empirical Findings

In this section, I present the findings on the relationship between the FX borrowing ratio and the firm outcomes. Table 2 shows the main results regarding the relationship between the FX borrowing and firm performance variables. The analysis of the entire sample indicates a positive and significant correlation between employment growth and the FX borrowing ratio throughout the period. Additionally, companies with a higher FX borrowing ratio exhibit higher sales growth, though this finding lacks statistical significance. The results for tangible assets are statistically insignificant, and the findings regarding exports are counterintuitive. When I focus on the net sales and employment growth, and look at the two periods separately, I observe different patterns. The estimates have been statistically insignificant in the recent years. 2017. Overall, a 10 percent increase in the share of FX loans in the firm's total loan utilization for the whole period is associated with 0.31 percent higher employment growth.

Table 2: FX Borrowing and Firm Growth: Whole Sample

	Net Sales Growth			Employment Growth			Export Growth			Tangible Asset Investment		
	All years	< 2017	≥ 2017	All years	< 2017	≥ 2017	All years	< 2017	≥ 2017	All years	< 2017	≥ 2017
FX Loan	0.008	0.020**	-0.011	0.019***	0.031***	-0.006	-0.020***	-0.021***	-0.014***	-0.003	-0.005**	-0.004
	(0.007)	(0.008)	(0.018)	(0.005)	(0.006)	(0.012)	(0.001)	(0.002)	(0.003)	(0.002)	(0.002)	(0.005)
Firm-Year Control	+	+	+	+	+	+	+	+	+	+	+	+
Firm FE	+	+	+	+	+	+	+	+	+	+	+	+
Sector-Year FE	+	+	+	+	+	+	+	+	+	+	+	+
Observation	284,431	185,599	87,244	286,612	186,160	88,776	284,431	185,599	87,244	291,889	190,791	89,165

The FX borrowing variable shows the share of FX loans in total loans received for all sample regressions and takes a value between 0 and 1. Firm-year control variables consist of the firm size (SME vs. Large), indebtedness measured as the ratio of total debt to total assets, cash ratio and the ratio of exports to total sales in year t-1. Growth variables are in logarithmic-difference form and winsorized at the 1% level. Similar results are obtained when long-term loans are used instead of total loans. SE: fixed effects. ***, **, * indicate statistical significance at the level of 1%, 5%, and 10%, respectively. Standard errors are given in parentheses.

On the other hand, the results obtained after matching with the coarsened exact matching (CEM) method provide similar results to Table 2 with more statistical significance. The effect of the FX borrowing ratio on net sales and employment growth is positive and statistically significant before 2017, and lacks statistical significance after 2017. With the use of CEM and comparing similar firms with each other, the effect on exports and tangible assets turned to be positive for the period before 2017.

Table 3: FX Borrowing and Firm Growth: Matched Sample

	Net Sales Growth			Employment Growth			Export Growth			Tangible Asset Investment		
	All years	<2017	≥2017	All years	<2017	≥2017	All years	<2017	≥2017	All years	<2017	≥2017
FX Loan	0.038***	0.040***	0.031	0.035***	0.040***	0.017	0.014***	0.013***	0.020***	0.007***	0.008***	0.001
	(0.010)	(0.011)	(0.022)	(0.007)	(0.008)	(0.015)	(0.002)	(0.002)	(0.005)	(0.012)	(0.013)	(0.026)
Firm-Year Control	+	+	+	+	+	+	+	+	+	+	+	+
Firm FE	+	+	+	+	+	+	+	+	+	+	+	+
Sector-Year FE	+	+	+	+	+	+	+	+	+	+	+	+
Observation	10,264	8,099	2,165	10,251	8,077	2,174	10,264	8,099	2,165	10,264	8,099	2,165

The FX borrowing variable takes the value 1 for companies that realize more than 90% of their financing in FX, and 0 for companies that realize more than 90% of their financing in TL. Firm-year control variables consist of the firm size (SME vs. Large), indebtedness measured as the ratio of total debt to total assets, cash ratio and the ratio of exports to total sales in year t-1. Growth variables are in logarithmic-difference form and winsorized at the 1% level. SE: fixed effects. ***, **, * indicate statistical significance at the level of 1%, 5%, and 10%, respectively. Standard errors are given in parentheses.

I now provide a more detailed analysis by focusing solely on long-term foreign exchange borrowing. When I repeated the regression using long-term loans instead of total loans, I obtained mostly similar results in Table 4. The findings show that a 10 percent increase in the ratio of FX loans to long-term loans in the pre-2017 period is associated with an additional 0.16 percent in net sales for companies. It is observed that the relationship between FX borrowing and net sales growth disappeared in the post-2017 period. A similar relationship is observed for employment growth. While there is a positive and significant relationship in the period before 2017, there is no significant relationship in the post-2017 period.

Table 4: Long-term FX Borrowing and Firm Growth: Whole Sample

	Net Sales Growth			Employment Growth			Export Growth			Tangible Asset Investment		
	All years	*<2017*	*≥2017*	*All years*	*<2017*	*≥2017*	*All years*	*<2017*	*≥2017*	*All years*	*<2017*	*≥2017*
FX Loan	0.009	0.016**	-0.023	0.017***	0.024***	0.004	-0.008*	-0.007***	-0.004	0.001	-0.003	0.005
	(0.007)	(0.008)	(0.018)	(0.005)	(0.006)	(0.012)	(0.001)	(0.001)	(0.003)	(0.002)	(0.002)	(0.005)
Firm-Year Control	+	+	+	+	+	+	+	+	+	+	+	+
Firm FE	+	+	+	+	+	+	+	+	+	+	+	+
Sector-Year FE	+	+	+	+	+	+	+	+	+	+	+	+
Observation	193,291	118,691	60,819	194,943	119,111	61,980	193,291	118,691	60,819	208,825	132,750	61,942

The FX borrowing variable shows the share of FX loans in total loans received for all sample regressions and takes a value between 0 and 1. Firm-year control variables consist of t the firm size (SME vs. Large), indebtedness measured as the ratio of total debt to total assets, cash ratio and the ratio of exports to total sales in year t-1. Growth variables are in logarithmic-difference form and winsorized at the 1% level. Similar results are obtained when long-term loans are used instead of total loans. SE: fixed effects. ***, **, * indicate statistical significance at the level of 1%, 5%, and 10%, respectively. Standard errors are given in parentheses.

Table 5 serves as a robustness check using the actual levels of the outcome variables instead of their growth rates. Thus I include the levels of net sales, employment, exports and tangible assets as the dependent variables in the regression equations. There is a positive and statistically significant relationship between FX loan utilization and firm performance variables for the whole period. When I divide the sample into two and run the regressions again, I discover that the sample before 2017 drives the main results, and there is no significant relationship in the post-2017 period. These alternative specifications support the main results described in Table 2 and Table 3.

Table 5: FX Borrowing and Firm Scale: Whole Sample (Using Levels as the Dependent Variables)

	Net Sales			Employment			Export			Tangible Asset		
	All years	<2017	≥2017	All years	<2017	≥2017	All years	<2017	≥2017	All years	<2017	≥2017
FX Loan	0.116***	0.104***	-0.000	0.115***	0.111***	0.006	0.029***	0.023***	0.002	0.006***	0.007***	0.002
	(0.007)	(0.008)	(0.017)	(0.006)	(0.007)	(0.012)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.002)
Firm-Year Control	+	+	+	+	+	+	+	+	+	+	+	+
Firm FE	+	+	+	+	+	+	+	+	+	+	+	+
Sector-Year FE	+	+	+	+	+	+	+	+	+	+	+	+
Observation	310,597	209,531	89,165	313,270	210,398	90,913	310,597	209,531	89,165	310,597	209,531	89,165

The FX borrowing variable shows the share of FX loans in total loans received for all sample regressions and takes a value between 0 and 1. Firm-year control variables consist of the firm size (SME vs. Large), indebtedness measured as the ratio of total debt to total assets, cash ratio and the ratio of exports to total sales in year t-1. Growth variables are in logarithmic-difference form and winsorized at the 1% level. Similar results are obtained when long-term loans are used instead of total loans. Tangible Fixed Asset investments are the ratio of the change compared to the previous year to the total assets of the previous year. FE: fixed effects. ***, **, * indicate statistical significance at the level of 1%, 5%, and 10%, respectively. Standard errors are given in parentheses.

4. Conclusion

Firms' access to finance is closely related to basic economic activity parameters such as exports, investment, production, and employment. On the other hand, an important factor affecting the relationship between financing and these parameters is the currency type of the financing obtained. In this study, the effect of FX borrowing on net sales, employment, exports, and tangible fixed asset investments compared to TL borrowing was examined using a detailed micro-data set.

Among many, one important aspect of the current study is the dataset that is exploited. The merger of three data sets, balance sheet data, employment data, and borrowing data provides a rare opportunity to make detailed evidence-based conclusions regarding the above-mentioned relation. Also, the case of Türkiye is an informative one as the country experienced periods with relatively stable exchange rates and relatively volatile ones. For the case of emerging countries, it is crucial to understand the varying relationship between FX borrowing and firm outcomes. Finally, in terms of methodology, the paper not only uses very rich control variables but also applies the Coarsened Exact Matching methodology for the main results.

The findings obtained from the panel data fixed effects model indicate a strong positive relationship between the use of FX loans and positive firm outcomes until 2017. More specifically, the firms with a higher ratio of FX-denominated credits in the total credits are correlated with higher employment growth. Moreover, these firms tend to have higher net sales growth, export growth, and tangible asset investment. On the other hand, for the years between 2017 and 2020 firms with higher FX borrowing ratios do not necessarily perform better than the rest in the corresponding outcomes.

While interpreting these estimates, one should keep in mind that there was a legal regulation regarding the FX borrowing of Turkish companies in 2017. Since FX borrowing for firms with no FX earnings may lead to fragility in the industries, FX loan borrowing was prohibited for firms that do not earn export income unless its total FX loan balance is already above 15 million USD. This basically meant to prevent small firms that were not naturally hedged against depreciation of TL from borrowing FX-denominated loans. Regarding, the methodology of this paper, I already use CEM to make a comparison between similar firms in the basic characteristics including export ratio. So the regulation may not necessarily affect the results of this paper, but still should be kept in mind.

Policies that regulate the FX borrowing of the firms aim to limit the potential detrimental effects of potential stops in the capital flows or sharp exchange rate movements. The macroeconomic outlook of a country together with the firm characteristics of different sizes and industries should be considered while developing regulations concerning FX borrowing. Paying particular attention to the firm groups with more sensitivity to exchange rate movements would contribute to the soundness of the whole economy.

Despite the richness of the data and the depth of analysis, as in many countries, the period with firm-level detailed data is relatively limited, and data become available with time lag. Therefore, I have a relatively short period of time, especially after 2017. Although, rare there are natural experiments around the world that help causally identify the effect of borrowing types on firm outcomes. Despite the use of Coarsened Exact Matching and using panel data regression later, causality should always be questioned in this literature. Future work can develop the literature in both dimensions. Studies that use detailed firm-level data for longer periods and exploit quasi-experimental methods for obtaining more clear causal effects would further contribute to the literature.

Conflict of Interest

The author has no conflicts of interest to declare.

Contribution Statement

The author contributed to all phases of the study.

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