Are Exporters Naturally Hedged? Corporate Dollar Debt and Global Trade*

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Abstract

We study how dollar-denominated debt and firm heterogeneity affect exchange rate pass-through to trade, using Korean firm-level balance sheet and customs transaction data. We show that exporters are not naturally hedged: export-intensive firms do not borrow more in foreign currency. Exploiting the 1997 devaluation, we find increases in foreign currency debt exposure led to lower export quantity growth and higher price growth for smaller firms, with the opposite pattern for very large firms. Liquidity shortages constrain production among smaller firms, while larger firms offset debt burdens by expanding exports. Panel analysis shows the financial channel remains relevant in recent years.

JEL Classification Codes: F31, F34

Keywords: global trade, foreign currency debt, exchange rate pass-through, financial channel

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1 Introduction

There is a substantial body of theoretical and empirical work suggesting that exchange rate depreciations can be contractionary due to the negative balance sheet effect of foreign currency liabilities.[1] When the domestic currency weakens, firms with foreign currency debt face higher debt burden in their own currency, reducing their net worth and potentially limiting their capacity to invest and produce. As foreign currency borrowing has surged among emerging market firms, policymakers in emerging markets have grown increasingly more concerned about associated macroeconomic vulnerabilities.[2]

Yet, this very channel is frequently assumed to matter less, if at all, for exporters. The prevailing belief is that exporters are naturally hedged: depreciation boosts their revenue from overseas, offsetting the burden of dollar-denominated debt. However, whether exporters are truly naturally hedged, and thus immune to the balance sheet effects of a large depreciation, remains far from clear.

This paper seeks to answer two key questions. First, are exporters naturally hedged? How does domestic currency depreciation affect exporters indebted in foreign currency? Second, do larger exporters indebted in foreign currency respond differently to the domestic currency depreciation? While previous research focuses mostly on the negative balance sheet effects on firms' net worth, investment, and gross sales, very few explore the balance sheet effect of dollar debt on exports, notwithstanding seldom exploring both export quantities and *prices*.[3] More so, very little is known about whether firm-level heterogeneity exists in firms' responses. Exploring the heterogeneity across firm size, we highlight if and how larger firms may adjust their production and prices differently to the balance sheet deterioration upon the depreciation of domestic currency.

It is noteworthy that our empirical investigation is only viable due to the richness of firm-level balance sheet information, including their currency composition of assets and liabilities, for both

[1] See Krugman (1999), Céspedes, Chang, and Velasco (2004), Aguiar (2005), Kim, Tesar, and Zhang (2015), Kalemli-Ozcan, Kamil, and Villegas-Sanchez (2016), Bruno and Shin (2023), and Kim and Lee (2024).

[2] See, for instance, the recent World Economic Outlook Update by International Monetary Fund (April 2025).

[3] Highlighting one of the few works on the contractionary effect of depreciation on exports, Bruno and Shin (2023) show that exporters lower their export quantities more when they are reliant on credits from dollar-funded banks.

listed and *non-listed* firms, *combined with* the granular transaction-level customs data on export quantities and prices. The insight we get from unraveling the balance sheet channel of dollar debt in shaping the exchange rate pass-through to exporters' activities would be of great importance to policymakers, especially in emerging markets, as their domestic currency often experiences a sudden depreciation against dollar and their liability is highly dollarized.

To shed light on these questions, we exploit a large unexpected devaluation episode in Korea in 1997 to identify and analyze the balance sheet effect of foreign currency debt on export quantities and prices. During the last quarter of 1997, the value of the US dollar surged from about 917 to 1,695 Korean won, taking market participants by surprise.[4] The financial hedging in Korea was non-existent, as the exchange for trading financial derivatives was only set up in 1999 after the Asian Financial Crisis. Most foreign currency loans extended to firms were unhedged. The accumulation of *unhedged* short-term foreign currency liabilities by firms, combined with a sudden and significant depreciation of the Korean won, provides a valuable setting to study the effects of negative balance sheets on exporters' production of goods and their price setting.

We employ a unique dataset that merges the Korean firm-level balance sheet data (KISVALUE) with the Korean customs data to study the effect of corporate dollar credit on the exchange rate pass-through to global trade. The KISVALUE dataset collects the panel data on the annual balance sheet of listed and non-listed firms in Korea. And, we merge them with the transaction-level customs data at the firm – HS10 product – destination country – quarterly date / year level. The merged dataset contains rich information about 2,375 Korean exporters in 1996, most importantly including its currency composition of debt at the firm-level and its exporting price and quantity at the firm – HS10 product – destination country – quarterly date / year level.

We begin by challenging the conventional view that the natural hedging motives are a key determinant of the currency composition of firm borrowing. If exporters are naturally hedged, the amount of foreign currency debt on their balance sheets should have no impact on their production and pricing decisions following a domestic currency depreciation. We document that among ex-

[4] Park (2001) illustrates the dynamics of the spot exchange rate and the offshore one-month forward rate in Figure 1. Prior to 1997Q3, both rates are closely aligned and remain stable at approximately 900 KRW/USD.

porters, those that rely more heavily on foreign sales do not borrow more in foreign currency, even though it is true that exporters are more likely to access international financial markets than domestic firms. In 1996, conditional on having foreign currency debt, both exporters and non-exporters held 23% of their debt in foreign currency; during the 2000-2019 period, the figures were 33% for exporters and 30% for non-exporters. Moreover, among exporters with foreign currency debt, the export to sales ratio is not significantly positively correlated with the foreign currency debt to total debt ratio. This pattern is observed both with and without controls for firm-level characteristics, in 1996 as well as in the 2001-2019 panel. This empirical pattern motivates our study focusing on how exporters with different levels of foreign currency debt exposure respond to domestic currency depreciation.

We then investigate the role of foreign currency debt in shaping the quarterly dynamics of export prices and quantities before and after the large devaluation of the Korean won against the U.S. dollar at the end of 1997. We find that exporters with higher exposure to foreign currency debt tend to reduce their export quantities more than those with lower exposure. Additionally, these exporters charge relatively higher prices in destination markets, showing a more incomplete exchange rate pass-through.[5] Very large exporters, however, react very differently to liquidity shortages: Among these firms, exporters with higher exposure to foreign currency debt tend to increase their export quantities more than those with lower exposure. They also charge relatively lower prices in destination markets, suggesting a higher degree of exchange rate pass-through. As shown in Section 4.2, smaller firms with a higher foreign currency debt burden experience a larger decline in net worth and working capital after the devaluation. This balance sheet deterioration constrains their capacity to produce and invest, leading to lower output and higher price relative to firms with lower foreign currency debt exposure. In contrast, large firms, despite their substantial foreign currency debt, may not face financial constraints. Consequently, they may increase their exports more than less-indebted large exporters in order to to generate the liquidity needed to

[5]In line with the existing literature, we examine the degree of exchange rate pass-through to prices in the destination market. If the exporter's currency depreciates relative to the importer's currency, then under complete (100%) pass-through, the prices faced by consumers in the destination market decline by the same proportion, assuming all else remains constant.

service their foreign currency debt.

The dynamic responses of export prices and quantities show that the balance sheet of dollar debt has persistent effects on export quantities and export prices. Moreover, we do not see any pre-existing trends in export quantities and their prices across firms with varying amount of foreign currency debt and size before the devaluation.

We then show that firms indebted in foreign currency have indeed suffered from a larger decline in net worth after the devaluation compared to firms with lower foreign currency debt exposure. These firms also have experienced a larger drop in liquid assets and physical capital. On top of that both import quantities and import values have declined more among firms with higher foreign currency debt exposure than among those with lower exposure. Firms with larger amounts of foreign currency debt show a larger decline in inputs used. This empirical observation supports our argument that these firms face tighter financial constraints, which limit their production capacity and reduce both the inputs used and the goods produced and sold. This negative effect of foreign currency debt exposure on inputs disappears for large firms as they tend to be less financially constrained than smaller firms.[6]

Extending the merged dataset to cover the more recent period of 2001 – 2020, we reaffirm the balance sheet effect of dollar debt on the exchange rate pass-through to export quantities and prices.[7] The findings from the panel regressions are meaningful in that they show that the balance sheet channel of dollar debt is not only present in a particular moment in the history but also in more recent periods with more developed financial markets in Korea. It is evident that the balance sheet channel of dollar debt plays a critical role of shaping the exchange rate pass-through to international prices and international trade dynamics.

Related Literature. Our paper speaks to two strands of literature in open macroeconomy: one on the contractionary effects of liability dollarization on the macroeconomy and the other on the

[6]In the appendix, we present a simple two-period model that rationalizes how and why increased debt burden, arising from foreign currency debt exposure following a domestic currency depreciation, leads to different responses across firms of different sizes.

[7]The data before 2001 are available, but we choose our sample period such that it excludes the period of the dot-com bubble burst.

exchange rate pass-through to prices. We unravel the balance sheet channel of dollar debt through which the exchange rate shock passes through to global trade.

Many theoretical and empirical papers have documented the contractionary effects of liability dollarization on their macroeconomy in emerging market economies upon the depreciation of their domestic currencies (see, for example, Krugman (1999); Céspedes et al. (2004); Aguiar (2005); Gilchrist and Sim (2007); Kim et al. (2015); Kalemli-Ozcan et al. (2016); Desai, Foley, and Forbes (2008); Korinek (2011) and Alfaro, Asis, Chari, and Panizza (2019)). Importantly, recent papers investigate the role of dollar borrowing in shaping international trades: Bruno and Shin (2023); Casas, Meleshchuk, and Timmer (2023); Ma and Schmidt-Eisenlohr (forthcoming) and Kohn, Leibovici, and Szkup (2020).[8] Specifically, Bruno and Shin (2023) show that firms relying more on credit from dollar-funded banks lower their exports more following dollar appreciation. Our analysis investigates the role of the currency composition of firms' liabilities in shaping global trade. Our paper focuses on how the exporters' balance sheet deterioration due to their dollar liabilities change their export quantities and prices after an unexpected exchange rate depreciation, rather than on the consequence of a negative bank credit supply shock to exporters. In fact, we find that our empirical results remain intact when controlling for bank fixed effects. The study most closely related to ours is Casas et al. (2023), who document that Colombian exporters do not reduce their exports nor imports upon the devaluation even among firms with high foreign currency debt exposure.[9] We believe that our empirical findings about firm heterogeneity may hint us why Casas et al. (2023) might have not identified the financial channel of dollar debt for an *average sized* exporter in Colombia.[10] Moreover, both Bruno and Shin (2023) and Casas et al. (2023) neglect the implication of the financial channel of dollar debt for international *prices*, an area that is under-investigated in the literature. We would like to fill the gap by exploring how firms' export quantities and *prices* change after a large devaluation depending on the indebtedness in dollars and

[8] More generally, the effect of financial shocks on exports is studied by Amiti and Weinstein (2011) and Niepmann and Schmidt-Eisenlohr (2017), focusing on the effect of a negative credit supply shock on firms' exports.

[9] Mereb and Ospina-Tejeiro (2024) also find that the exchange rate pass-through to export prices is largely unaffected by how much Columbian exporters borrow in foreign currency.

[10] Relatedly, exporting sectors in Colombia are primarily energy and agricultural sectors, while Korean exports are predominantly manufactured goods.

examine heterogeneity across firm size.[11]

Some recent papers also explore the interaction of exchange rate shocks and trade credit. Hardy, Saffie, and Simonovska (2025) explore how large firms that borrow in foreign currency transmit exchange rate risk to their supply chain partners through trade credit. They show theoretically and empirically that financially constrained firms are more likely to pass on foreign exchange shocks via trade credit, while unconstrained firms absorb the shocks to protect their partners. Cui, Guo, and Juarez (2025) show that trade credit dampens the sensitivity of international prices to the exchange rate fluctuations, increasing the exchange rate pass-through to the prices paid by importers.

Our paper also complements the literature on how firms choose financing currency. Salomao and Varela (2022) focus on the role of firms' foreign currency borrowing on economic growth. Some papers focus on the natural hedging motives of firms in their issuance of foreign currency debt: Kedia and Mozumdar (2003), Colacito, Qian, and Stathopoulos (2022), and Liu (2024). Other recent papers focus on the carry trade motives behind foreign currency debt borrowing: Bruno and Shin (2017), Acharya and Vij (2024), Huang, Panizza, and Portes (2024), Hardy and Saffie (2024), and Lee and Wu (forthcoming). We argue that exporters do not seem to be naturally hedged and therefore, suffer from the balance sheet effects of dollar debt following a sudden depreciation of domestic currency.

Furthermore, our paper speaks to a large literature on the degree of exchange rate pass-through to prices.[12] Many papers have explored the role of invoicing currency and its implications for the exchange rate pass-through to prices: Devereux and Engel (2002); Engel (2006); Goldberg and Tille (2008); Gopinath, Itskhoki, and Rigobon (2010); Goldberg and Tille (2016); Devereux, Dong, and Tomlin (2017); Drenik and Perez (2021); Corsetti, Crowley, and Han (2022); Amiti, Itskhoki, and Konings (2022) and Mukhin (2022). Others emphasize the role of imported inputs in shaping

[11] A contemporaneous work by Ma and Schmidt-Eisenlohr (forthcoming) explores a similar question to ours using the country pair x HS6 product-level import price and quantity data for a large set of countries. They find that dollar appreciation leads to a larger increase in import prices and a sharper decline in import quantities when exporting countries have higher levels of external borrowing in foreign currency.

[12] See an extensive survey of this topic in Burstein and Gopinath (2014).

the degree of exchange rate pass-through to domestic prices: Goldberg and Campa (2010) and Amiti, Itskhoki, and Konings (2019). Moreover, a large body of work focuses on the relationship between the nominal and the real exchange rate (see, for example, Engel (1993); Engel (1999); Burstein, Eichenbaum, and Rebelo (2005); Gopinath, Gourinchas, Hsieh, and Li (2011); Crucini and Telmer (2012) and Broda and Weinstein (2008)). Our paper complements this large literature by investigating the balance sheet channel of dollar debt through which the exchange rate shock affects the exporters' price settings.

Lastly, our paper is broadly related to the international risk spillovers of the U.S. monetary policy to emerging markets: Rey (2016), Bruno and Shin (2015), Passari and Rey (2015), Kalemli-Ozcan (2019), Miranda-Agrippino and Rey (2020), Avdjiev, Gambacorta, Goldberg, and Schiaffi (2020) and De Leo, Gopinath, and Kalemli-Ozcan (2024). We focus on how the price of the U.S. dollar, which could be largely driven by the U.S. monetary policy, passes through to emerging market firms.

The rest of our paper is organized as follows. Section 2 describes our data and presents key descriptive statistics. In Section 3, we find suggestive evidence that the natural hedging motives are not the key driver of the currency composition of borrowing by firms. This evidence rationalizes why exporters respond differently to the exchange rate depreciation based on their foreign currency debt exposure — a phenomenon that should not be observed if exporters are naturally hedged. Section 4 describes the baseline empirical analysis and highlights the role of foreign currency debt in shaping the export quantities and prices during the devaluation period. We also emphasize the importance of considering firm size heterogeneity in analyzing the impact of dollar debt on global trade. We then show that firms indebted in foreign currency indeed have experienced the deterioration of their net worth and a large decline in their inputs used for their production such as working capital, physical capital and imported inputs. Section 5 examines more recent periods from 2001 to 2020 and shows that the results presented in Section 4 remain intact. The last section concludes.

2 Data

Identifying the negative balance sheet effect of dollar debt on export quantities and prices during a large unexpected devaluation episode in Korea in 1997, we employ a unique dataset that combines the Korean firm-level balance sheet data from the KISVALUE dataset with the transaction-level Korean customs data.[13]

The Korean firm-level balance sheet data include firms with assets larger than 6 billion won as they are required to report audited financial statements to the Financial Supervisory Commission every year.[14] The reported annual financial statements are then compiled by NICE (formerly the Korea Information Service Inc., KIS).

The KISVALUE dataset has a few attractive features that allow us to explore the role of firms' foreign currency debt in the exchange rate pass-through to export quantities and their prices. First, it covers a large number of both large listed and small, medium-sized non-listed firms, and the number of exporting firms that go into our sample in 1996 is 2,375. It is crucial to have smaller firms in the sample as we are interested in the effect of financial constraints on firms' exports. Second, most importantly, it contains the information on the currency composition of debt, critical for constructing each firm's foreign currency debt exposure before an unexpected large devaluation. Lastly, a wide set of firm-level variables are included in the dataset, such as the currency composition of *liquid assets*, sales, total costs and total assets. We mitigate the concerns about endogeneity by controlling for the firm-level covariates documented in literature, which may affect the currency composition of debt.

Using the business registration number as a unique identifier, we combine the firm-level balance sheet data (firm x year) with the transaction-level Korean customs data (firm x product x destination x quarterly date /year). The merged dataset then contains rich information about 2,375 exporting

[13] We accessed the customs data through the Korea Trade Statistics Promotion Institute (KTSPI), with the approval of the Korea Customs Service and in compliance with disclosure restrictions. Balance sheet data for firms during the sample years were obtained from the KISVALUE dataset. KTSPI merged the KISVALUE dataset with customs records within its facility, and the merged dataset was not shared with us. We developed the code for data analysis, which was executed by KTSPI under our close supervision and guidance. We extend our sincere gratitude to the staff at KTSPI and the Korea Customs Service for their support.

[14] The asset threshold has changed over time: 7 billion KRW in 1998 and 10 billion KRW in 2009.

firms, most importantly including its currency composition of debt and its exporting price and quantity at the firm - HS10 product - destination country level.[15] This is one of the very few attempts in the literature to combine the data on the *currency composition of both assets and liabilities* at the firm-level and the customs data on exporting prices and quantities at a *granular transaction level*: firm - product - destination country level.[16]

The Korean customs data that we employ in Section 4 include around 11,000 observations for exports, and each observation is at the firm f - product HS10 code i - destination country d level for each quarterly date t.[17] Each observation includes the export value and weight, which determine the unit price per kilogram. For the panel data analysis in Section 5, we have around 1.9 million observations for exports. Each observation is at the firm f - product HS10 code i - destination country d - year t level. Most of these transactions are invoiced in dollar.[18]

The summary statistics for the data used in regressions in Section 4 and Section 5 are summarized in Tables 18 – 20, and Table 26 in the Appendix.

3 Foreign Currency Borrowing Among Exporters

In this section, we highlight not only the relevance of foreign currency debt among exporters, but also present evidence that challenges the natural hedging motive as a key determinant of debt currency composition. We show the data patterns across firms in 1996 as our key findings exploit a large depreciation of Korean won against the U.S. dollar at the end of 1997. Nonetheless, very similar patterns are detected when exploring the data in more recent periods.

We begin by summarizing the patterns of foreign currency borrowing among exporters and non-exporters. As shown in Table 1, in 1996, 57.5% of exporters held positive amounts of foreign

[15] Export price is measured as the unit price, defined as the ratio of export value to export volume.

[16] For the results in Figure 6 and Tables 29 and 30, we have done the analysis at the level: firm - product - destination - currency and include currency fixed effects.

[17] For imports, we have conducted the analysis at the annual level, consistent with our analysis of other input variables due to the balance sheet data availability. For the period from 1996 to 1998, we have around 26,000 observations at the firm f –product HS10 code i –source country d – year t level.

[18] 86 % of exports are invoiced in the U.S. dollar in 1996-2020.

currency debt, compared to only 20.6% of non-exporters. This pattern suggests that, at the extensive margin, foreign currency borrowing was indeed more prevalent among exporters. A similar regularity is observed in 2000-19, presented in Table 13 in the Appendix; the average shares of exporters and non-exporters borrowing in foreign currency are 33% and 9%, respectively. Exporters tend to tap more into international financial markets.

Rather surprisingly, conditional on having foreign currency debt, the share of total debt denominated in foreign currency is similar between exporters and non-exporting (domestic) firms, illustrated in Table 1. In 1996, both groups held, on average, 23% of their debt in foreign currency. Moreover, as shown in Table 2, the average export to sales ratio among exporters are comparable between those with and without foreign currency debt. This pattern persists in more recent data from 2000–2019, as presented in Tables 13 and 14 in the Appendix. This empirical regularity challenges the traditional view that exporters are naturally hedged. Specifically, exporters do not appear to borrow more in foreign currency even when they generate a significant share of revenue in foreign currency

Table 1: FC Borrowing Among Exporters vs. Non-Exporters

	Share of Firms with FC Debt	FC Debt Ratios	FC Debt Ratio (>0)
Non-Exporters	20.6%	4.7%	22.9%
Exporters	57.5%	13.0%	22.6%

Notes: FC debt ratio is the foreign currency debt to total debt ratio. Exporters are the firms with positive exports in 1996. All variables are their values in 1996. The last column shows the average foreign currency debt ratio conditional on holding a positive amount of foreign currency debt.

Table 2: Export Share Among FC Borrowers vs. Non-FC Borrowers

	Export Share
Exporters with Zero FC debt	17.1%
Exporters with Positive FC debt	19.2%

Notes: This table shows the average export share (export to sales ratio) among exporters with and without foreign currency debt. Export share is the export to sales ratio.

We further analyze this pattern by computing firm-level pairwise correlations between the foreign currency debt to total debt ratio and various firm characteristics among exporters in 1996.[19]

[19]The results reveal a strong positive correlation with firm size, largely driven by the extensive margin of foreign currency debt issuance.

Importantly, we find very little correlation between foreign currency debt ratios and export to total sales ratios, reinforcing the earlier point: there is limited evidence supporting natural hedging motives behind foreign currency borrowing. The time series patterns of these correlations for later periods are reported in Table 15 in the Appendix, and we find a very similar pattern.

Table 3: Firm-Level Correlations between FC debt and Other Firm-level Characteristics

	FC Debt Ratio	FC Debt Ratio > 0
	(1)	(2)
Import Share	0.11	0.18
Export Share	0.05	0.04
Sales Share	0.03	-0.02
Size	0.29	0.14
Leverage	-0.06	-0.15
Short-term Debt Ratio	-0.21	-0.33
Cash Ratio	-0.01	0.08
FC Cash Ratio	0.17	0.15

Notes: The table shows how the foreign currency debt to total debt ratio is correlated with regressors in the regressions presented in Section 4. Regressors are their values in 1996 and include the following firm-level characteristics: average sales share (the export sales of firm f selling HS10 product i to country d, divided by the total exports of Korean firms to the corresponding HS4-destination market), import share (the share of imported inputs in total variable costs); export to sales ratio; size (log of total sales); leverage (total debt to total assets ratio); short-term debt ratio (short-term debt to total debt ratio); cash ratio (cash to total assets ratio); and FC cash ratio (FC cash to total cash ratio). Column (1) shows the correlation between variables in the whole sample, and Column (2) shows those with subsample of firms with positive FC debt.

Lastly, we estimate the below equation to further support our argument:

$$FC\ Debt\ Ratio_{f,96} = \beta_0 ExportShare_{f,96} + \beta_1 ImportShare_{f,96} + \Gamma_3' X_{f,96} + \alpha_{s(f)} + \alpha_{b(f)} + \varepsilon_f, \tag{1}$$

where the dependent variable is the foreign currency debt to total debt ratio of firm f in 1996. We are interested in whether, and to what extent, the currency composition of firm borrowing is positively correlated with the share of exports in their total sales. We are also interested in its correlation with the share of imported inputs in total variable costs. Other firm-level characteristics, X_f are controlled: average sales share, firm size (log of sales), leverage (total debt to total assets ratio), short-term debt ratio (short-term debt to total debt), cash ratio (cash to total assets), and

FC cash ratio (FC cash to total cash). Sales share is defined as the export sales of firm f selling HS10 product i to country d, divided by the total exports of Korean firms to the corresponding HS4-destination market. We also control for sector and main bank fixed effects. Each sector is identified with a five-digit KSIC code (Korea Standard Industrial Classification). Our coefficients of interest are β_0 and β_1.

In Table 4, we observe a positive correlation between the export share and the currency composition of debt; however, the size of the coefficient is quite small. One percentage point increase in the export share of total sales is associated with a 0.05 percentage point increase in the foreign currency share of debt. Moreover, when we focus on exporters with positive foreign currency debt, the size of coefficient becomes very small and not statistically different from zero. On top of that, the import share is positively correlated with the foreign currency debt ratio, even more so when we condition on firms with a positive amount of foreign currency debt. This pattern is in a sharp contrast with what one would predict under the natural hedging hypothesis. We further examine the relationship between foreign currency debt and net exports, defined as exports minus imports, relative to sales. Column 2 in Table 4 shows that firms with larger *net* exports actually borrow less in foreign currency. This pattern is more pronounced when we condition on firms with positive foreign currency debt.

Table 4: Exports and Currency Composition of Firm Borrowing in 1996

	Dependent Variable: FC Debt to Total Debt Ratio					
	All Samples			Positive FC Debt		
	(1)	(2)	(3)	(4)	(5)	(6)
Exports to Sales	0.0586***	0.0517**		0.0239	0.0084	
	(0.0211)	(0.0207)		(0.0307)	(0.0297)	
Imports to Cost of Sales		0.1346***			0.2010***	
		(0.0228)			(0.0374)	
Net Exports to Sales			-0.0421**			-0.0932***
			(0.0171)			(0.0265)
Sales Share	0.0017	0.0024	0.0098	0.0258	0.0183	0.0326
	(0.0180)	(0.0179)	(0.0179)	(0.0274)	(0.0273)	(0.0272)
Size	0.0389***	0.0399***	0.0378***	0.0194***	0.0221***	0.0183***
	(0.0034)	(0.0034)	(0.0034)	(0.0058)	(0.0058)	(0.0057)
Leverage	-0.0325*	-0.0347*	-0.0301	-0.1249***	-0.1334***	-0.1259***
	(0.0187)	(0.0184)	(0.0187)	(0.0319)	(0.0306)	(0.0312)
Short-term Debt Ratio	-0.1991***	-0.2120***	-0.1989***	-0.3452***	-0.3537***	-0.3451***
	(0.0181)	(0.0180)	(0.0181)	(0.0320)	(0.0310)	(0.0315)
Cash Ratio	-0.0407	-0.0468	-0.0230	0.0751	0.0656	0.0991
	(0.0439)	(0.0430)	(0.0446)	(0.0789)	(0.0759)	(0.0794)
FC Cash Ratio	0.2295***	0.2262***	0.2382***	0.2090**	0.2016**	0.2118**
	(0.0810)	(0.0808)	(0.0814)	(0.0876)	(0.0867)	(0.0876)
Adjusted R^2	0.2374	0.2543	0.2367	0.2552	0.2825	0.2647
Observations	2459	2459	2459	1318.0000	1318	1318

Notes: The firm-level variables are at their 1996 values. Columns 1 and 2 present estimates based on the full sample of firms. Columns 3 and 4 report estimates based on a subsample limited to firms with a positive amount of foreign currency debt.

Additionally, we examine how the estimates may change when all of our key variables – exports, imports and net exports – are normalized by total assets. Shown in Table 5, similar to what we had in our baseline analysis, the estimate on exports to total assets ratio is not statistically different from zero and an order of magnitude smaller than that on imports to total asset ratio, if not negative. Firms with higher export revenue *do not* borrow more in foreign currency. On the other hand, import-intensive firms with similar export shares do borrow more in foreign currency, opposite of what the natural hedging motive may imply.

We observe a strongly consistent relationship when analyzing more recent data from 2001 – 2020, shown in Table 16 in the Appendix. The estimate on the export share is positive but insignificant and turns negative when we use a subsample of firms with positive foreign currency

debt in estimation.[20]

The empirical findings strongly suggest that exporters access international financial markets more readily than domestic firms, but more export-intensive firms do not necessarily borrow more in foreign currency on the intensive margin. This evidence suggests that the natural hedging motive is not a key driver of firms' currency composition of debt. That is, firms are *not naturally hedged*. It is important for our investigation of the balance sheet effect of foreign currency debt as exposure to foreign currency debt should have no impact on firms' production and pricing decisions if they are perfectly hedged.

Table 5: Exports and Currency Composition of Firm Borrowing in 1996 – Normalized by Total Assets

	Dependent Variable: FC Debt to Total Assets					
	All Samples			Positive FC Debt		
	(1)	(2)	(3)	(4)	(5)	(6)
Exports to Total Assets	0.0060	0.0031		0.0096	-0.0024	
	(0.0052)	(0.0050)		(0.0116)	(0.0111)	
Imports to Total Assets		0.0264***			0.0858***	
		(0.0076)			(0.0307)	
Net Exports to Total Assets			-0.0101***			-0.0282***
			(0.0038)			(0.0109)
Sales Share	-0.0052	-0.0049	-0.0034	0.0079	0.0070	0.0120
	(0.0072)	(0.0071)	(0.0071)	(0.0115)	(0.0109)	(0.0112)
Size	0.0125***	0.0125***	0.0122***	0.0067***	0.0065***	0.0060**
	(0.0015)	(0.0015)	(0.0015)	(0.0025)	(0.0024)	(0.0024)
Leverage	0.0928***	0.0937***	0.0928***	0.1492***	0.1452***	0.1484***
	(0.0114)	(0.0114)	(0.0114)	(0.0206)	(0.0195)	(0.0204)
Short-term Debt Ratio	-0.0542***	-0.0583***	-0.0544***	-0.1036***	-0.1099***	-0.1043***
	(0.0066)	(0.0065)	(0.0066)	(0.0128)	(0.0130)	(0.0128)
Cash Ratio	-0.0217	-0.0254	-0.0167	0.0190	0.0111	0.0311
	(0.0178)	(0.0177)	(0.0182)	(0.0339)	(0.0328)	(0.0351)
FC Cash Ratio	0.0592**	0.0610**	0.0613**	0.0574*	0.0588**	0.0588**
	(0.0282)	(0.0286)	(0.0283)	(0.0295)	(0.0298)	(0.0296)
Adjusted R^2	0.2087	0.2186	0.2110	0.2490	0.2857	0.2580
Observations	2459	2459	2459	1318	1318	1318

Notes: The firm-level variables are at their 1996 values. Columns 1 and 2 present estimates based on the full sample of firms. Columns 3 and 4 report estimates based on a subsample limited to firms with a positive amount of foreign currency debt.

[20]The panel regression results with key variables normalized by total assets are presented in Table 17 in the Appendix. The estimation results are consistently showing us similar patterns.

4 Exporters with Dollar Debt after Devaluation

4.1 Baseline Analysis: Dynamic Responses of Export Quantity and Price

We explore the negative balance sheet effect on export prices and quantities during the 1997 devaluation episode in Korea, using quarterly transaction-level customs data merged with firm-level balance sheet data. Specifically, we examine the dynamic responses of export quantities and prices before and after the large devaluation. We estimate the following equations for firm f, product HS10 code i, destination country d:

$$\Delta_{97Q3+h-97Q3} ln(y_{f,i,d}) = \beta_{0,h} FC\ Debt\ Ratio_{f,96} + \beta_{1,h} FC\ Debt\ Ratio_{f,96} \times Size_{f,96} + \beta_{2,h} Size_{f,96} + \beta_{3,h} X_{f,96} + \beta_{4,h} X_{f,96} \times Size_{f,96} + \alpha_{s(f),h} + \alpha_{d,h} + \alpha_{b(f),h} + \varepsilon_{f,i,d,h}, \quad (2)$$

where the dependent variable is the log change in y, over h quarters relative to the base period of 1997Q3 – the quarter immediately preceding the large devaluation in Korea. We examine the dynamic response of the dependent variables for $h \in \{-4, ..., 0, ..., 5\}$, spanning one year before and after the devaluation. This analysis allows us to detect any pre-existing trends in exporter's decisions based on their foreign currency debt exposure in 1996. The dependent variable y is the export quantity or the export price in the destination currency.[21] All the regressors are at their values in 1996. Our key coefficients of interest are $\beta_{0,h}$ and $\beta_{1,h}$ for each $h \in \{-4, ..., 0, ..., 5\}$, capturing the evolving effect of foreign currency debt on export quantities and prices.

In our analysis, the main regressors are the foreign currency debt to total debt ratio (FC debt ratio) and the interaction between the FC debt ratio and firm size. The FC debt ratio captures the degree of a firm's balance sheet deterioration following an exchange rate shock. The interaction term reflects the idea that the balance sheet effect would be larger for smaller, more financially constrained firms, motivated by Kim and Lee (2024). We measure firm size as the log of total

[21] The estimation results are identical with the export price in *dollars* as the dependent variable because country fixed effects are included in the estimation.

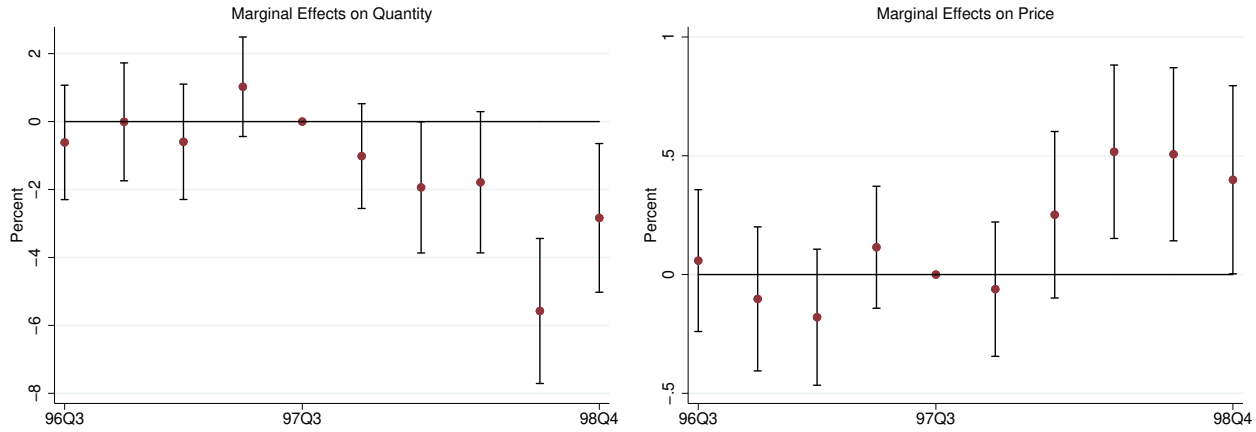
sales.

We control for additional firm-level variables, X_f, to address potential endogeneity concerns. Specifically, X_f includes import share (the share of imported inputs in total variable costs), sales share (export sales of firm f selling product i to country d, divided by the total exports of Korean firms to the corresponding HS4-destination market), leverage (total debt to total assets ratio), short-term debt ratio (short-term debt to total debt), cash ratio (cash to total assets), FC cash ratio (FC cash to total cash), and export share (exports to total sales).[22] We control for sector and country fixed effects. Each sector is identified with a five-digit KSIC code (Korea Standard Industrial Classification). We also include each firm's main bank fixed effects to mitigate the concern that our results merely capture the effect of a negative bank credit supply shock. That is, a particular bank could have extended more foreign currency loans to firms before the devaluation and then reduced its credit supply more sharply to these firms afterward. We aim to capture how firms may exhibit different export quantity and price responses due to their foreign currency debt exposure, even when they share the same main bank.

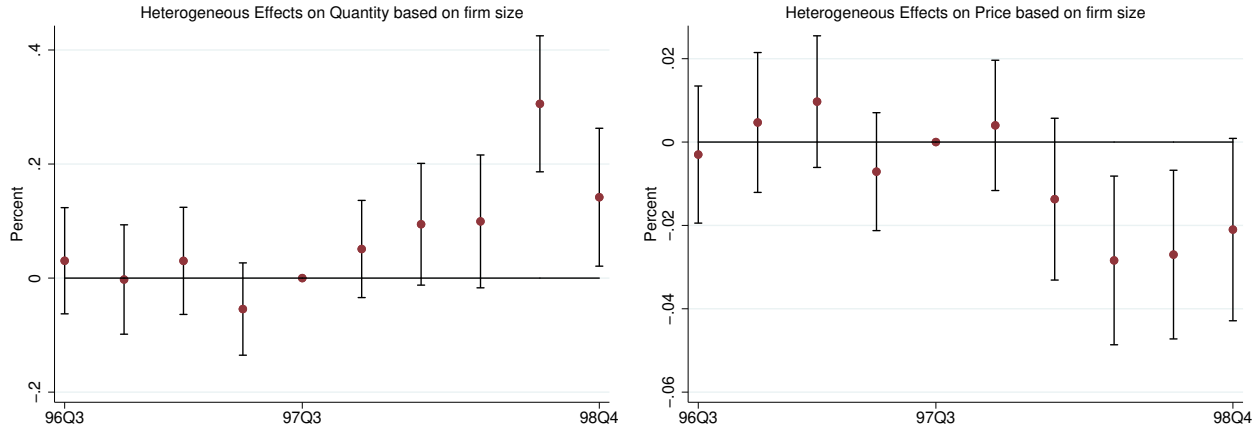
[22] As a slight abuse of the notation, we use X_f to include all firm-level controls. Nonetheless, the sales share varies across HS10 products and destinations for the same firm.

Figure 1: Dynamic Effects of FC Debt on Export Price and Quantity

Upper Panel: Dynamic Effects of FC Debt on Export Price and Quantity



Lower Panel: Heterogeneity Across Firm Size



Notes: The dependent variable is the log change in the export quantity and price relative to 1997Q3 level. The top panels plot $\beta_{0,h}$, and the bottom panels plot $\beta_{1,h}$ estimated in Equation (2). The figures on the left are the estimates of changes in the export quantity, and those on the right are the estimates of changes in the export price. The bars represent the 90% confidence interval with robust standard errors.

Figure 1 shows the regression results of Equation (2) with export quantity as the dependent variable. The coefficient estimates $\beta_{0,h}$ and $\beta_{1,h}$ are *not statistically different from zero* before 1997Q3. That is, we could not find any evidence of systematic differences in the quantity adjustment across firms with different degrees of foreign currency debt exposure, prior to the devaluation. The negative balance sheet effect of dollar debt on export quantities becomes evident after the devaluation: the estimate on FC debt ratio ($\beta_{0,h}$) becomes negative and statistically different from zero, starting 1998Q3. The balance sheet effect on export quantities is more pronounced

for smaller firms ($\beta_{1,h} > 0$). The deterioration of the balance sheet due to high foreign currency debt exposure following devaluation could limit production, leading to a fall in export volumes. When firm size decreases by one standard deviation, the negative balance sheet effect on the export quantity growth from 1998Q3 to 1997Q3 becomes 0.62 percentage points larger.

Figure 1 also depicts the baseline estimates of export price responses. Similar to the export quantity dynamics, the coefficient estimates $\beta_{0,h}$ and $\beta_{1,h}$ are *not statistically different from zero* before the large devaluation. Firms with varying degree of FC debt ratio in 1996 do not show any systematic differences in their pricing decisions before the large devaluation. This result supports the absence of differential pre-trends across firms with different degrees of FC debt exposure. The balance sheet effect of dollar debt on export prices becomes apparent three quarters after the base period: the estimate on FC debt ratio ($\beta_{0,h}$) becomes positive and statistically different from zero, starting 1998Q2. In addition, the bottom panel shows that the balance sheet effect of dollar debt on export prices is more pronounced for smaller firms ($\beta_{1,h} < 0$). The deterioration of the balance sheet for firms indebted in foreign currency may constrain production, resulting in higher export prices. This effect on export prices is especially strong among smaller firms, which are more likely to face tighter working capital and financial constraints. In particular, a one standard deviation decrease in firm size amplifies the balance sheet effect on the export price growth in 1997Q3-1998Q3 by 0.05 percentage points.

In Figure 2, we depict how the effect of foreign currency debt on export quantity and price changes by firm size, computed based on the estimation results shown in Figure 1. The figure shows the year on year change in export quantities and prices from 1997Q3 to 1998Q3.[23] For the firms whose sales are at the bottom 25% in 1996, one percentage point increase in the foreign currency debt ratio leads to 0.63 percentage points larger fall in export quantities and 0.07 percentage points higher increase in the export prices, compared to their prices in 1997Q3. The effects of foreign currency debt exposure on export quantities and prices become larger in size when firm size gets smaller. The exchange rate pass-through to prices in the destination markets

[23] We find that the results are robust when we consider the changes from 1996 to 1998.

is more incomplete for firms with higher foreign currency debt exposure than those with lower exposure.[24][25]

By contrast, very large firms exhibit opposite quantity and price adjustments following the devaluation, as they are more exposed to foreign currency debt. Among very large firms, higher foreign currency debt exposure leads to higher export quantity growth and lower export price changes. Specifically, for firms at top 1% of the size distribution, one percentage point increase in the foreign currency debt ratio leads to 1.1 percentage points higher increase in the export quantities and 0.1 percentage points lower decrease in export prices after the devaluation. The exchange rate pass-through to prices in the destination markets is more complete for firm with higher foreign currency debt exposure than those with lower exposure.[26] Large firms indebted in foreign currency may not face tighter financial constraints and disruption in their production unlike smaller firms. These large firms with high exposure to foreign currency debt, therefore, are likely to produce more and sell abroad to generate additional cashflows to overcome liquidity shortages. Higher quantities of goods exported by large exporters have resulted in lower export prices.[27]

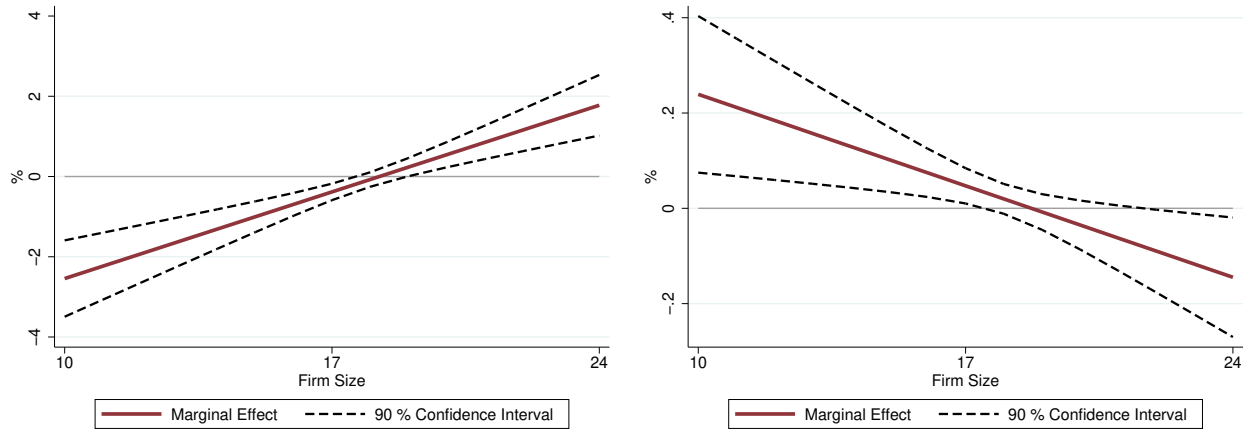
[24] As aforementioned, when the exporter's currency weakens relative to the importer's currency, a complete pass-through implies that consumer prices in the destination market decrease by an equivalent percentage.

[25] The broad effective exchange rate for Korea decreased by 21.8% from 1997Q3 to 1998Q3. For small firms at the bottom 25%, a 50ppt increase in FC debt leads to a 16ppt decrease in the pass-through.

[26] For larger firms at the top 1%, a 50ppt increase in FC debt leads to a 18ppt increase in the pass-through.

[27] In the Appendix, we provide a simple two-period model that rationalizes our empirical findings – firms react differently to the depreciation of the domestic currency, depending on their firm size and foreign currency debt exposure.

Figure 2: Marginal Effect on Export Quantity and Prices: Heterogeneity Across Firm Size



Notes: The figure on the left shows the marginal effect of FC debt exposure on firms' export quantity growth across firm size (log of sales). The figure on the right shows the marginal effect of FC debt exposure on firms' export price growth depending on firm size. The dashed lines show the 90 percent confidence intervals of the marginal effects. The graphs are computed based on the results in Table 1.

We have conducted some additional exercises to show that the results shown in Figure 1 are robust across different specifications. First, we conduct the analysis at the firm f, product HS10 code i, destination country d, invoicing currency c level and include invoicing currency fixed effects. This analysis is motivated by the literature documenting the invoicing currency an important determinant of the exchange rate pass-through (Gopinath et al. (2010), Corsetti et al. (2022), Amiti et al. (2022) and many others). We estimate the following Equation (3):

$$\Delta_{97Q3+h-97Q3} ln(y_{f,i,d,c}) = \beta_{0,h} FC\ Debt\ Ratio_{f,96} + \beta_{1,h} FC\ Debt\ Ratio_{f,96} \times Size_{f,96} + \beta_{2,h} Size_{f,96} + \beta_{3,h} X_{f,96} + \beta_{4,h} X_{f,96} \times Size_{f,96} + \alpha_{s(f),h} + \alpha_{d,h} + \alpha_{b(f),h} + \alpha_{c,h} + \varepsilon_{f,i,d,c,h}, \quad (3)$$

where the dependent variable $\Delta_{97Q3+h-97Q3} \ln(y_{f,i,d,c})$ is the log change in y over h quarters relative to the base period of 1997Q3. y is the export quantity or price of product i, produced by firm f, sold to destination country d, *invoiced in currency* c. We include $\alpha_{c,h}$ currency effects. Figure 6 in the Appendix shows that the results are quantitatively and qualitatively similar to what we had

in Figure 1. This empirical finding confirms that our results are not driven by different invoicing currency patterns across firms and reaffirm our main findings. We also do not see any pre-existing trends across firms with different foreign currency debt exposure before the devaluation. That is, $\beta_{0,h}$ and $\beta_{1,h}$ are not statistically different from zero for $h < 0$.

Second, we measure foreign currency debt exposure differently. We define it as the ratio of foreign currency debt to *total assets*. Shown in Figure 7, the results are qualitatively similar. Third, some argue that large firms are not only financially unconstrained, but also hold a large market share, and therefore may react differently to balance sheet deterioration. To mitigate this concern, we control for FC Debt Ratio$_{f,96} \times$ Sale Share$_{f,96}$ when estimating Equation (2). The results are shown in Figure 8. The empirical patterns are fairly comparable qualitatively and quantitatively. Fourth, we add the debt to sales ratio as an additional control variable in $X_{f,t}$. In Figure 9, we see that the results align with the empirical evidence shown in the baseline result.

Lastly, there is a possibility that firm size may correlate with export destinations. Larger firms may be more likely to export to distant countries, such as the United States or other EU nations, which were not directly affected by the Asian Financial Crisis (AFC). In contrast, smaller firms may export more to nearby Asian countries and thus be more exposed to the crisis. To address this concern, we include interaction terms between foreign currency debt exposure and destination country dummies for the United States, China, Japan, Europe, and a group of countries affected by the AFC. As shown in Figure 10, the results remain robust with these additional controls.

Our analysis highlights the role of foreign currency debt exposure and firm heterogeneity in shaping the exchange rate pass-through to global trade. The export quantity and price responses of exporting firms, varying with their foreign currency debt exposure, suggest that varying levels of foreign currency debt may contribute to the relative price dispersion in destination markets, which may in turn alter resources allocations, which could potentially lead to efficiency losses.

4.2 Adjusting Imports and Other Inputs

In this section, we are interested in if firms indeed have experienced a deterioration in their net worth and have reduced their use of inputs when indebted in foreign currency. Moreover, we examine whether smaller firms among exporters are the ones most affected by the devaluation and therefore adjust their inputs and hence the production the most. The set of analyses below strengthens our argument that the balance sheet deterioration due to dollar debt have disrupted the production, leading to adjustments in firms' inputs.

Given that firm-level balance sheet variables are available only at annual frequency, we estimate Equation (4):

$$\begin{aligned}\Delta ln(y_f) = \alpha_{s(f)} + \alpha_{b(f)} + \beta_0 FC\ Debt\ Ratio_{f,96} + \beta_1 FC\ Debt\ Ratio_{f,96} \times Size_{f,96} \\ + \beta_2 Size_{f,96} + \beta_3 X_{f,96} + \beta_4 X_{f,96} \times Size_{f,96} + \varepsilon_f,\end{aligned} \tag{4}$$

where the dependent variable is the log change in y from 1996 to 1997, and from 1996 to 1998. By analyzing changes over different time horizons, we investigate the dynamic response of each dependent variable.[28] We examine the responses of firms' net worth, liquid assets (cash and cash equivalents), and physical capital. We would like to first investigate if firms indeed faced the deterioration in their net worth when they borrow heavily in foreign currency debt. We then examine how firms, borrowing heavily in foreign currency debt, adjust their liquid assets, which takes up a large part of working capital, and physical capital.

We then investigate how firms adjust imported intermediate inputs, both their quantities and values, depending on foreign currency debt burden. Specifically, we estimate the following equation for firm f, product HS10 code i, destination country d:

[28] For net worth, we compute the change in net worth from 1997 to 1998, normalized by total assets in 1997 as net worth can be negative.

$$\Delta ln(y_{f,i,d}) = \alpha_{s(f)} + \alpha_{b(f)} + \alpha_d + \beta_0 FC\ Debt\ Ratio_{f,96} + \beta_1 FC\ Debt\ Ratio_{f,96} \times Size_{f,96}$$
$$+ \beta_2 Size_{f,96} + \beta_3 X_{f,96} + \beta_4 X_{f,96} \times Size_{f,96} + \varepsilon_{f,i,d}, \quad (5)$$

where the dependent variable is the log change in y from 1996 to 1997, and from 1996 to 1998. y is the import quantity or the import value at firm f, HS10 product i and origin country d level, measured in U.S. dollars.[29]

All the explanatory variables in Equations (4) and (5) are as of 1996. We control for other firm-level characteristics X_f: import share (the share of imported inputs in total variable costs), leverage (total debt to total assets ratio), short-term debt ratio (short-term debt to total debt), cash ratio (cash to total assets), FC cash ratio (FC cash to total cash), and export share (exports to total sales). Sector and main bank fixed effects are also included in both sets of estimations. In estimating Equation (5), we additionally control for sales share (the import value of firm f purchasing product HS10 code i from country d, divided by the total Korean firms' imports in the corresponding HS4 - origin country market) and origin country fixed effects.

In Table 6, we see that firms have indeed experienced a larger fall in net worth and liquid assets when they borrowed more in foreign currency debt before the devaluation. The fall in net worth and cash growth is larger when firm size is smaller. Moreover, firms with higher foreign currency debt exposure prior to the devaluation adjust their capital stock actively, as shown in Columns 5 and 6. Firms indebted in foreign currency debt lower their capital stock more than those with low foreign currency debt exposure, and this effect is more pronounced for smaller firms. In all cases, most of the firms heavily indebted in foreign currency began to experience balance deterioration starting in 1997. This negative balance sheet effect intensified over time, with estimates on FC debt ratio becoming larger in size by the end of 1998.[30]

[29] As country fixed effects are included, the results are the same when we use the import values measured in the origin country currency.

[30] We find that there was no systematic relationship between firms' balance sheet variables and foreign currency debt prior to 1997 as seen in Table 24 in the Appendix, further supporting that the negative balance sheet effect came

Table 6: FC Debt and Other Firm-Level Variables

	$\Delta Networth$		$\Delta Cash$		$\Delta Capital$	
	(1) 96-97	(2) 96-98	(3) 96-97	(4) 96-98	(5) 96-97	(6) 96-98
FC Debt Ratio	-0.2427*	-0.7951***	-2.1015*	-4.4445**	-0.9611**	-1.7649***
	(0.1405)	(0.2852)	(1.1856)	(1.7601)	(0.4711)	(0.6808)
FC Debt Ratio × Size	0.0129	0.0448***	0.1204*	0.2556***	0.0496*	0.0910**
	(0.0079)	(0.0160)	(0.067)	(0.0984)	(0.0267)	(0.0383)
Adjusted R^2	0.1373	0.1062	0.1197	0.1152	0.0435	0.0549
Observations	2353	2262	2340	2266	2356	2284

Notes: Robust standard errors are reported in the parentheses. * p<0.1, ** p<0.05, *** p<0.01.

On top of what's shown in Table 6, we also see adjustments in their imported intermediate inputs. Table 7 summarizes the responses of import quantities and import values upon a devaluation at the end of 1997. We see that firms have indeed reduced their imports more when their debt is tilted more towards foreign currency. The negative balance sheet effect on imports is larger when firm size is smaller.[31]

Table 7: Change in Import Quantity and Value

Import	$\Delta Quantity$		$\Delta Value$	
	(1) 96-97	(2) 96-98	(3) 96-97	(4) 96-98
FC Debt Ratio	0.3690	-1.3640*	0.6456	-1.4548**
	(0.5007)	(0.7007)	(0.4778)	(0.6876)
FC Debt Ratio × Size	-0.0111	0.0767**	-0.0278	0.0806**
	(0.0273)	(0.0385)	(0.0260)	(0.0377)
Adjusted R^2	0.0197	0.0446	0.0219	0.0480
Observations	44,075	26,271	44,075	26,271

Notes: Robust standard errors are reported in the parentheses. * p<0.1, ** p<0.05, *** p<0.01.

In contrast to the immediate responses observed in balance sheet variables, imported intermediate inputs did not adjust immediately in 1997 but began to respond significantly in 1998. These patterns support the idea that foreign currency debt initially weakens firms' financial positions, subsequently affecting their production and pricing decisions through tighter financial constraints, particularly due to reduced working capital and investment. Thus, while balance sheet variables react promptly, the adjustment in imported intermediate inputs appears with a delay.[32] Moreover,

with the large depreciation.

[31] We do not have the annual data for imports before 1996, so we could not investigate the pre-trends in import values before the devaluation.

[32] It is also possible that the discrepancy arises from differences in the nature of the variables: the balance sheet

this result is consistent with earlier findings regarding the lagged effects of foreign currency debt on export quantities and prices.

5 Panel Regression Analysis

To highlight that the balance sheet effect of dollar debt on the export quantity and price is not associated with a particular crisis period in the past, we estimate the exchange rate pass-through to export quantities and prices in more recent periods. This section employs the panel data of both listed and non-listed firms from 2001 to 2020.[33] Each observation is at the firm f-product HS10 i -destination country d-year t. Following Devereux et al. (2017), we estimate the below Equation (6):

$$\begin{aligned}\Delta_\tau \ln(y_{f,i,d,t}) = {} & \alpha_{s(f)} + \alpha_{d,t} + \alpha_{b(f,t),t} + \beta_0 \Delta_\tau E_{KRW/\$,t} + \beta_1 \text{FC Debt Ratio}_{f,t} + \beta_2 \text{Size}_{f,t} \\ & + \beta_3 \text{FC Debt Ratio}_{f,t} \times \text{Size}_{f,t} \\ & + \beta_4 \text{FC Debt Ratio}_{f,t} \times \Delta_\tau E_{KRW/\$,t} + \beta_5 \text{Size}_{f,t} \times \Delta_\tau E_{KRW/\$,t} \\ & + \beta_6 \text{FC Debt Ratio}_{f,t} \times \Delta_\tau E_{KRW/\$,t} \times \text{Size}_{f,t} \\ & + \gamma_0 X_{f,t} + \gamma_1 X_{f,t} \times \Delta_\tau E_{KRW/\$,t} + \gamma_2 X_{f,t} \times \Delta_\tau E_{KRW/\$,t} \times \text{Size}_{f,t} + \varepsilon_{i,f,d,t},\end{aligned} \tag{6}$$

where the dependent variable is the log change in y from year t to year $t+\tau$. Similarly, $\Delta_\tau E_{KRW/\$,t}$ is the log change in the KRW price of USD from year t to year $t+\tau$. y is the export price in the destination currency or its export quantity. Since we do not observe firm f's exports of product HS10 i to destination country d every year, we look at the export price and quantity changes from year t to year $t+\tau$, where τ varies for each observation of firm f's exports of product HS4 i to destination country d in year t. $E_{KRW/\$,t}$ is the Korean won price of dollar. An

variables reported in Table 6 are stock variables, whereas imported inputs are flow variables, representing annual aggregates. Since the devaluation occurred at the end of 1997, its impact may not have been enough to significantly affect the annual flow in that year.

[33] The dependent variable is the growth rate of a variable y; therefore, year t starts at 2001 and ends at 2019.

increase in the exchange rate is therefore a depreciation of KRW against the U.S. dollar. As in Section 4, X_f includes: import share (the share of imported inputs in total variable costs), sales share (export sales of firm f selling product i to country d divided by the total exports of Korean firms to the corresponding HS4-destination market), leverage (total debt to total assets ratio), short-term debt ratio (short-term debt to total debt), cash ratio (cash to total assets), FC cash ratio (FC cash to total cash), and export share (exports to total sales).

Our coefficients of interest are β_4 and β_6. In all specifications, we include sector s fixed effects and destination country d by year t fixed effects in the regressions, where sectors are defined by the five-digit KSIC industry codes. We also include each firm's main bank (which could vary across time) by year fixed effects to show that the results are not driven by the transmission of bank credit supply shocks. We include both robust and clustered standard errors, where the cluster is at the country by year level.

Tables 8 and 9 summarize the results, qualitatively consistent with what we have found with the event study analysis during the Asian Financial Crisis. Table 8 shows the estimates of changes in export quantities on FC Debt Ratio$\times\Delta E_{KRW/\$}$ and FC Debt Ratio$\times\Delta E_{KRW/\$}\times$Size are -1.4 and 0.07. Firms lower their export quantities more as their debt is tilted more towards FC upon the depreciation of Korean won. The fall in export quantities is larger when firm size is smaller. Moreover, Table 9 summarizes the effect of foreign currency debt on export prices. The estimates on FC Debt Ratio$\times\Delta E_{KRW/\$}$ and FC Debt Ratio$\times\Delta E_{KRW/\$}\times$Size are 0.5 and -0.03. Firms with high foreign currency debt exposure raise their destination prices more compared to those with lower exposure, following the depreciation of Korean won against the U.S. dollar. The magnitude of the increase is larger when firm size is smaller. The same mechanism manifest in Section 4 is also revealed in the panel regression analyses with more recent and longer period data.

Table 8: Panel Regression of Export Quantity Changes on FC Debt

Dependent Variable:	Export Quantity	
	(1)	(2)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	-1.3839**	-1.3839**
	(0.5447)	(0.6805)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	0.0660**	0.0660*
	(0.0280)	(0.0359)
Adjusted R^2	0.0161	0.0161
Observations	1863541	1863541
Standard Errors	Robust	Clustered

Notes: In all specifications, we include sector, country by year, main bank by year fixed effects. In Column (1), robust standard errors are reported in the parentheses. In Column (2), clustered standard errors are reported in the parentheses. The cluster is at the country by year. The estimates on other variables are included in Table 27. * p<0.1, ** p<0.05, *** p<0.01.

Table 9: Panel Regression of Export Price Changes on FC Debt

Dependent Variable:	Export Price in Destination Currency	
	(1)	(2)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	0.4699***	0.4699***
	(0.0928)	(0.1229)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	-0.0277***	-0.0277***
	(0.0047)	(0.0066)
Adjusted R^2	0.0360	0.0360
Observations	1863541	1863541
Standard Errors	Robust	Clustered

Notes: In all specifications, we include sector, country by year, main bank by year fixed effects. In Column (1), robust standard errors are reported in the parentheses. In Column (2), clustered standard errors are reported in the parentheses. The cluster is at the country by year. The estimates on other variables are included in Table 28. * p<0.1, ** p<0.05, *** p<0.01.

We have done a number of robustness checks. First, we have shown that the results are qualitatively and quantitatively similar when measuring the export prices in dollars. The results are reported in Table 28. The estimates on FC Debt Ratio$\times\Delta E_{KRW/\$}$ and FC Debt Ratio$\times\Delta E_{KRW/\$}\times$Size are 0.4 and -0.02, respectively.[34]

Second, we show that results are consistent when analyzing at the at the firm f-product HS10 i - destination country d - invoicing currency c - year t level. We estimate the following Equation

[34]The estimated coefficients on the export price in destination currency vs. dollar are not identical because the log change is computed from t to $t+\tau$, where τ varies with the observation f,i,d. Although country by year fixed effects are included, the estimated coefficients may still differ depending on the units of the export price.

(7):

$$\begin{aligned}\Delta_\tau \ln(y_{f,i,d,c,t}) = {} & \alpha_{s(f)} + \alpha_{d,t} + \alpha_{b(f,t),t} + \alpha_{c,t} + \beta_0 \Delta_\tau E_{KRW/\$,t} + \beta_1 \text{FC Debt Ratio}_{f,t} + \beta_2 \text{Size}_{f,t} \\ & + \beta_3 \text{FC Debt Ratio}_{f,t} \times \text{Size}_{f,t} \\ & + \beta_4 \text{FC Debt Ratio}_{f,t} \times \Delta_\tau E_{KRW/\$,t} + \beta_5 \text{Size}_{f,t} \times \Delta_\tau e_{\$t} \\ & + \beta_6 \text{FC Debt Ratio}_{f,t} \times \Delta_\tau E_{KRW/\$,t} \times \text{Size}_{f,t} \\ & + \gamma_0 X_{f,t} + \gamma_1 X_{f,t} \times \Delta_\tau E_{KRW/\$,t} + \gamma_2 X_{f,t} \times \Delta_\tau E_{KRW/\$,t} \times \text{Size}_{f,t} + \varepsilon_{i,f,d,t},\end{aligned} \tag{7}$$

where the dependent variable $\Delta_\tau \ln(y_{f,i,d,c,t})$ is the log change in y from year t to year $t+\tau$, where y is the export quantity or price of product i, produced by firm f, sold to destination country d, invoiced in currency c in year t. We include $\alpha_{c,t}$ currency by year fixed effects. This exercise is useful as the invoicing currency is an important determinant of the exchange rate pass-through, extensively shown in many papers in the literature (Gopinath et al. (2010), Amiti et al. (2022), Corsetti et al. (2022) and many others). The results are reported in Tables 29, 30 and 31.

Table 29 shows the estimation results of Equation (7) with the log change in the export quantity as the dependent variable. Columns 1 and 2 show the estimation results without currency fixed effects, while Columns 3 and 4 summarize the ones with currency fixed effects. The estimates on FC Debt Ratio$\times\Delta E_{KRW/\$}$ and FC Debt Ratio$\times\Delta E_{KRW/\$}\times$Size are -1.3 and 0.06 in both specifications with and without currency fixed effects, very close to what we had in our baseline model when estimating Equation (6). Even after controlling for currency fixed effects, we find firms with higher foreign currency debt exposure lower their export quantities more compared to those with lower exposure, following the depreciation of Korean won against the U.S. dollar. The very effect is larger as firm size is smaller.

Tables 30 and 31 show the effect of foreign currency debt on the export price in destination currency and in the U.S. dollar, respectively. In Tables 30 and 31, Columns 1 and 2 and Columns 3 and 4 show the estimation results without and with currency fixed effects, respectively. The estimates in Tables 30 and 31 are very similar whether we use the export price in the destination

currency or in the U.S. dollar. The estimates on FC Debt Ratio $\times\Delta E_{KRW/\$}$ are 0.5 and 0.4 without and with currency fixed effects, and those on FC Debt Ratio$\times\Delta E_{KRW/\$}\times$Size are -0.03 and -0.02 in both specifications. We observe that firms with higher foreign currency debt exposure increase their export prices more compared to those with lower exposure upon the depreciation of Korean won against the U.S. dollar. The very effect gets larger as firm size is smaller.

Third, motivated by Ottonello and Winberry (2020), we control for FC Debt Ratio$_{f,t} \times \Delta_\tau ln(Y_t)$ and $\Delta_\tau ln(Y_t)$, where Y_t is the world real GDP and the Korean real GDP in year t, fetched from the World Economic Outlook Database from the International Monetary Fund. We also include FC Debt Ratio$\times ln(VIX_t)$, where the VIX index captures the market expectations for the U.S. stock market volatility over the next 30 days. We compute the average VIX in year t using the daily VIX data from the FRED database. This set of exercises aims to control for differences in cyclical sensitivities across firms with different foreign currency debt exposure. The results are summarized in Tables 10 and 11. The estimated coefficients are quantitatively very close to the baseline estimates. This result corroborates that our empirical findings are not driven by firms with different foreign currency debt exposure exhibiting varying cyclical responses.

Table 10: Panel Regression of Export Quantity Changes on FC Debt – FC Debt Ratio $\times$ Aggregate

Dependent Variable:	Export Quantity	
	(1)	(2)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	-1.3083**	-1.3083*
	(0.5474)	(0.6884)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	0.0653**	0.0653*
	(0.0281)	(0.0363)
Adjusted R^2	0.0163	0.0163
Observations	1843620	1843620
Aggregate $\times\Delta_\tau E_{KRW/\$,t}$	Yes	Yes
Standard Errors	Robust	Clustered

Notes: In all specifications, we include sector, country by year, main bank by year fixed effects. In Column (1), robust standard errors are reported in the parentheses. In Column (2), clustered standard errors are reported in the parentheses. The cluster is at the country by year. We control for FC Debt Ratio$_{f,t} \times ln(VIX_t)$, FC Debt Ratio$_{f,t} \times \Delta_\tau ln(Y_t)$, and $\Delta_\tau ln(Y_t)$, where Y_t is the world real GDP and the Korean real GDP in year t. The estimates on other variables are included in Table 32.* p<0.1, ** p<0.05, *** p<0.01.

Table 11: Panel Regression of Export Price Changes on FC Debt, Controlling for Aggregate x FC Debt

Dependent Variable:	Export Price in Destination Currency	
	(1)	(2)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	0.4453***	0.4453***
	(0.0932)	(0.1252)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	-0.0251***	-0.0251***
	(0.0047)	(0.0067)
Adjusted R^2	0.0371	0.0371
Observations	1843620	1843620
Aggregate $\times\Delta_\tau E_{KRW/\$,t}$	Yes	Yes
Standard Errors	Robust	Clustered

Notes: In all specifications, we include sector, country by year, main bank by year fixed effects. In Column (1), robust standard errors are reported in the parentheses. In Column (2), clustered standard errors are reported in the parentheses. The cluster is at the country by year. We control for FC Debt Ratio$_{f,t}\times ln(VIX_t)$, FC Debt Ratio$_{f,t}\times\Delta_\tau ln(Y_t)$, and $\Delta_\tau ln(Y_t)$, where Y_t is the world real GDP and the Korean real GDP in year t. The estimates on other variables are included in Table 33. * p<0.1, ** p<0.05, *** p<0.01.

Fourth, we adopt an alternative measure of foreign currency debt exposure. We define it as the ratio of foreign currency debt to total assets. The results are summarized in Tables 34 and 35. The empirical findings do not change qualitatively under an alternative definition of foreign currency debt exposure. Fifth, some argue that large firms may react differently to the balance sheet deterioration following the exchange rate depreciation not because they are not financially constrained, but because they hold a large market share. To address this concern, we control for FC Debt Ratio$_{f,t}\times\Delta_\tau E_{KRW/\$,t}\times$ Sale Share$_{f,t}$ and FC Debt Ratio$_{f,t}\times$ Sale Share$_{f,t}$when estimating Equation (6). The results are summarized in Tables 36 and 37. As clearly shown in the two tables, the findings remain consistent qualitatively and quantitatively. Lastly, we include the debt to sales ratio as an additional control variable in $X_{f,t}$ on top of controlling for the leverage ratio measured as the debt to total assets ratio. We control for Debt to Sales Ratio$_{f,t}$, Debt to Sales Ratio$_{f,t}\times\Delta_\tau E_{KRW/\$,t}$, Debt to Sales Ratio$_{f,t}\times\Delta_\tau E_{KRW/\$,t}\times$ Size$_{f,t}$ when estimating Equation (6). The results are reported in Tables 38 and 39. We see that estimates are significant and close quantitatively to what we had in the baseline estimations.

Overall, our panel regressions with more recent sample periods reaffirm the relevance of the balance sheet channel of dollar debt in shaping the exchange rate pass-through to export quantities

and prices.

6 Conclusion

This paper analyzes the role of dollar debt and firm heterogeneity in shaping the response of exporters to exchange rate fluctuations. We exploit a large devaluation in Korea in 1997 and leverage a unique dataset merging Korean firm-level balance sheet data with transaction-level Korean customs data to identify the balance sheet effect of foreign currency debt on exporters.

Our analysis reveals heterogeneous responses across firms, depending on their exposure to foreign currency debt and their size. Exporters with higher levels of foreign currency debt tend to reduce export quantities more than those with lower exposure. These firms increase their prices relatively more, exhibiting a more incomplete exchange rate pass-through to prices in the destination markets. In contrast, very large exporters indebted in foreign currency increase their export quantities more and charge relatively lower prices, compared to those with low exposure to foreign currency debt, indicating a higher exchange rate pass-through to prices in the destination markets.

Small firms with substantial foreign currency debt burdens experience a greater decline in net worth and working capital following the devaluation. This balance sheet deterioration constrains their production capacity, resulting in lower output and higher prices relative to firms with lower foreign currency debt exposure. In contrast, large firms, despite their significant foreign currency debt exposure, may *not* encounter constraints on their working capital and hence production. Consequently, among large firms, those with higher foreign currency debt exposure expand their exports more than firms with lower exposure to generate additional cash flows.

Panel data analysis covering 2001–2020 further confirms that the effect of dollar debt on export quantities and prices persists in more recent periods.

Our findings suggest that exporters are not naturally hedged, and therefore actively adjust their production and pricing in response to increased debt burden following depreciation. Currency depreciation can lead to production disruptions for smaller, indebted firms, while large firms could

expand their overseas sales more in response to liquidity shortages. This heterogeneity in firm-level responses to depreciation can result in an unexpected reallocation of resources toward very large exporters. We believe that the insights offered here are of significant relevance to policymakers in emerging markets, where sudden depreciations against the U.S. dollar are common and firm-level liabilities are often heavily dollarized.

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Appendix

A Simple Two-Period Model

This section presents a simple model that rationalizes our empirical findings. A simple two-period model illustrates how firms may react differently to the depreciation of the domestic currency, depending on their firm size and foreign currency debt exposure. Specifically, after the devaluation, for smaller firms, higher foreign currency debt leads to lower export quantities and higher prices, whereas for large firms, it results in higher export quantities and lower prices.

Exporters live two periods, 1 and 2. At the beginning of period 1, each firm starts with the capital stock k, debt level d and cash holding T. λ fraction of d is denominated in dollars and the rest are in domestic currency. There are two types of exporters – small and large. A small exporter owns a lower level of capital stock than a large exporter: $k_{small} < k_{large}$. We assume that both small and large exporters have the same debt to capital and cash to capital ratios ($\frac{d}{k}$ and $\frac{T}{k}$, respectively). That is, their initial cash holdings T and debt d are proportional to their initial levels of capital stock k. Therefore, consistent with the empirical findings, our analysis explores the effect of the currency composition of debt (λ) on firms' production of output and their output prices, conditional on their leverage and cash to asset ratios.

After an exchange rate shock is realized, i.e., $\xi > 1$, firms need to pay back their debt and use the remaining cash to purchase domestic inputs, i.e., $wn \leq T - d(\xi\lambda + 1 - \lambda)$. This assumption captures the idea that the balance sheet deterioration due to the large depreciation restricts the firm's production capacity through the working capital channel (Drenik and Perez (2021) and Kim and Lee (2024)). Firms can also produce more by borrowing $a \geq 0$ to acquire additional capital stock at the interest rate, r. In period 1, firms consume what they produce and export and any cash holdings left after paying back their debt and wage bills.

In period 2, firms pay the cost of borrowing for the additional capital stock, $(1+r)a$ and consume the remaining capital stock $k+a-(1+r)a = k-ra$. Hence, in order to compensate their liquidity shortage, each firm can generate extra cash flows in period 1 at the expense of the cash

flow in the following period. This feature is in line with the inventory adjustment channel (for instance, Kim (2021)), where firms experiencing a liquidity shortage increase today's cash flows by liquidating inventories at the expense of tomorrow's cash flows. We normalize the price of final consumption goods in both periods to one.

Small and large firms solve the following problem given k, d, T and exchange rate ξ:

$$max_{c_1,c_2,y,a,n}\ U_1(c_1)+U_2(c_2)$$

$$s.t.\ c_1 = \xi p(y)y - d(\lambda\xi+(1-\lambda)) - wn + T, \quad c_2 = k - ra$$

$$y = z(k+a)^{\alpha}n^{1-\alpha}, \quad y = Dp^{-\eta}, \quad wn \leq T - d(\xi\lambda + 1 - \lambda)$$

We assume that utility functions for periods 1 and 2 are $U_1(c) = ln(c), U_2(c) = \nu c$, respectively.[35] In line with the previous studies, the elasticity parameter η is set to 4 (see Gopinath and Itskhoki (2010) and Kim and Lee (2024), for example), and the net interest rate r and ξ is set to 0.08 and 2.0 to match the data counterparts, respectively. The capital share α is set to 0.33. Without loss of generality, we assume $z = 1$, $D = 1$, and $w = 1$. The initial values of capital stock for small and large firms $k_{small} < k_{large}$ are set such that small firms face binding working capital constraint, but large firms do not. Small and large firm have the same cash to capital and debt-to-capital ratios.[36]

Large Exporter. Assuming that working capital constraints are not binding, a large firm's optimal decision of a satisfy the following equation:

$$\Phi_1(k+a)^{\frac{\theta-1}{1-\theta(1-\alpha)}}U_1'(c_1) = rU_2'(c_2) \tag{8}$$

[35]The assumption of a linear utility in period 2 is not necessary but imposed for algebraic simplicity.

[36]We arbitrarily set $T = k$, $d = 0.2k$, and $\nu = 0.3$ such that it shows the mechanism that we would like to show clearly. We set $k_{small} = 0.5\bar{k}$ and $k_{small} = 2.0\bar{k}$, where $\bar{k} = \frac{\theta\alpha}{r}$ and $\theta = \frac{\eta-1}{\eta}$.

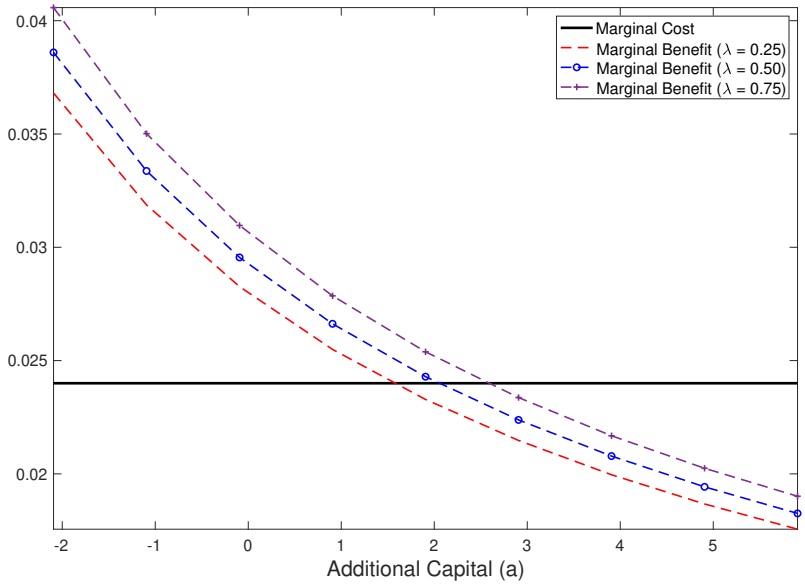
$$\Rightarrow \frac{\Phi_1 (k+a)^{\frac{\theta-1}{1-\theta(1-\alpha)}}}{\Phi_2 (k+a)^{\frac{\theta\alpha}{1-\theta(1-\alpha)}} + T - d(\xi\lambda + 1 - \lambda)} = \nu r$$

, where $\Phi_1 = \frac{\alpha}{1-\alpha}\left(\theta(1-\alpha)\xi\right)^{\frac{1}{1-\theta(1-\alpha)}}$, $\Phi_2 = \frac{1-\theta(1-\alpha)}{\theta(1-\alpha)}\left(\theta(1-\alpha)\xi\right)^{\frac{1}{1-\theta(1-\alpha)}}$, and $\theta = \frac{\eta-1}{\eta}$.

The left-hand side of Equation (8) represents the marginal benefit of an additional borrowing a, while the right-hand side reflects the marginal cost of doing so. The marginal benefit decreases as a rises, due to (1) decreasing marginal product of capital and (2) decreasing marginal utility of consumption. In addition, the marginal utility of consumption increases with a larger foreign currency debt burden λ, capturing a greater degree of liquidity shortage due to the increase in debt burden. This leads to an increase in borrowing a, thereby increasing production in order to generate extra cash flows. On the other hand, the marginal cost of borrowing is constant at νr due to our assumption of quasi-linear utility function.

The graphical illustration of the marginal benefits with different level of λ and marginal cost as a function of additional capital a, is depicted in Figure 3. As λ increases, the marginal benefit of additional a is larger and hence, firms acquire more capital and increase their production.

Figure 3: Marginal Benefit and Marginal Cost of Additional a

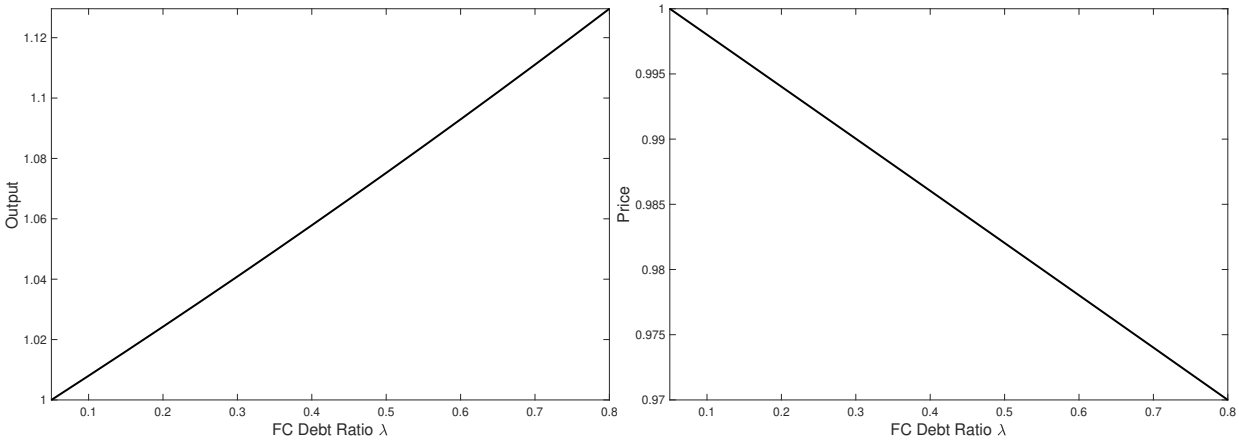


Notes: The black horizontal line depicts the RHS of Equation (8) against additional capital a. The three curves depict the LHS of Equation (8) against additional capital a for different values of λ.

Figure 4 shows a complete picture of how a large firm's decisions vary by its foreign currency

debt ratio λ. As illustrated above, large exporters produce more and charge lower prices as their foreign currency debt ratio increases. This result arises from the facts that (i) large firms are less affected by the balance sheet deterioration compared to smaller firms, so their production capacity is not restricted and (ii) they would like to produce more to generate additional cash flows when facing liquidity shortages due to higher debt burden.

Figure 4: Effect of FC debt on Export Quantity and Price for Large Firms



Notes: For the presentation purpose, we have normalized the price and the quantity equal to one when λ =0.

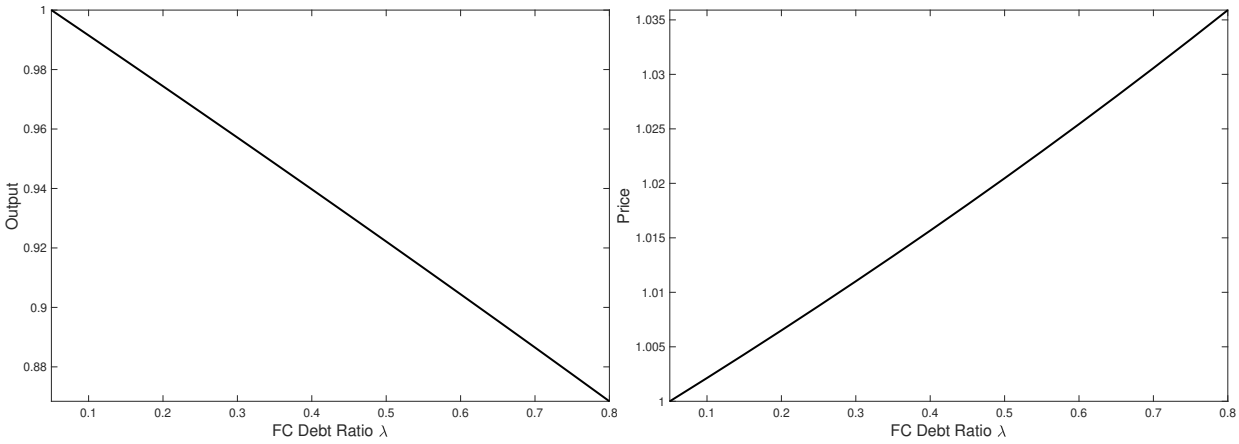
Small Exporter Assuming that working capital constraint are binding, a small firm's optimal decisions can be expressed as following closed form solutions:

$$n = T - d(\xi\lambda + 1 - \lambda),\ a = \frac{2\alpha\theta}{r} - k,$$

$$\text{and } y = (\frac{2\alpha\theta}{r})^{\alpha}(T - d(\xi\lambda + 1 - \lambda))^{1-\alpha}$$

As a firm's foreign currency debt burden λ increases, the amount of inputs that can be employed is directly affected due to the working capital constraint. This lower working capital reduces domestic input used, and subsequently leads to a decrease in the production of small exporters. Figure 5 illustrates how a small firm's output and price vary with its foreign currency debt ratio λ.

Figure 5: Effect of FC debt on Export Quantity and Price for Small Firms



Notes: For the presentation purpose, we have normalized the price and the quantity equal to one when $\lambda = 0$.

In contrast to the response of large exporters, small exporters produce less and charge higher prices as their foreign currency debt ratio increases. Although they both face higher debt burden due to their foreign currency debt exposure, small firms are not able to expand their export sales as they have limited amount of working capital to start with. Therefore, the increased debt burden imposes an even tighter working capital constraint on smaller firms, forcing them to produce less. As a result, in response to the devaluation, small exporters with high foreign currency debt produce less output and sell at higher prices.

In sum, our simple two-period model successfully explains how and why an increase in debt burden, resulting from foreign currency debt exposure after domestic currency depreciation, affects small and large firms differently. During the large devaluation period, small and large exporters with higher foreign currency debt both face higher debt burden and shortage of liquidity. However, large firms with higher foreign currency debt could expand their export sales and generate higher cashflows today as they do not face constraints on their production capacity. In contrast, smaller exporters with higher foreign currency debt are severely affected by the balance sheet deterioration, which restricts their production capacity, forcing them to reduce export sales.

Data Sources

Table 12: Data Sources

Dataset	Frequency	Sources
Korean Customs Data in Section 4	Quarterly Annual	Korea Trade Statistics Promotion Institute (1996 - 1998b) Korea Trade Statistics Promotion Institute (1996 - 1998a)
Korean Customs Data in Section 5	Annual	Korea Trade Statistics Promotion Institute (2001 - 2020)
KISVALUE Dataset	Annual	NICE (1996 - 2020)
World and Korean Real GDP Growth	Annual	WEO (2001 - 2020)
VIX	Daily	FRED (2001 - 2020)

Additional Tables and Figures for Section 3

FC Debt in 2000 – 2019

Table 13: FC Borrowing Among Exporters vs. Non-Exporters (2000-2019)

Year	Non-Exporters			Exporters		
	Share of Firms with FC Debt	FC Debt Ratios	FC Debt Ratio (>0)	Share of Firms with FC Debt	FC Debt Ratios	FC Debt Ratio (>0)
2000	13.2%	3.5%	26.8%	42.6%	11.8%	27.6%
2001	11.4%	3.1%	27.5%	38.6%	11.0%	28.5%
2002	12.8%	4.1%	32.4%	43.4%	13.9%	32.0%
2003	14.1%	4.6%	32.7%	46.8%	16.8%	36.0%
2004	12.5%	3.6%	29.2%	47.1%	16.6%	35.3%
2005	12.5%	3.8%	30.4%	44.6%	14.6%	32.8%
2006	13.0%	3.8%	29.3%	42.6%	13.5%	31.6%
2007	11.0%	3.5%	31.6%	37.6%	11.6%	30.9%
2008	10.2%	3.4%	33.6%	37.6%	13.1%	34.8%
2009	10.8%	3.6%	33.2%	37.1%	12.1%	32.5%
2010	9.9%	3.4%	34.4%	36.3%	12.6%	34.6%
2011	9.0%	3.1%	34.5%	33.0%	11.6%	35.3%
2012	8.3%	2.7%	31.9%	30.1%	9.8%	32.6%
2013	6.3%	1.9%	29.5%	26.1%	7.8%	29.9%
2014	5.9%	1.6%	28.0%	23.6%	7.2%	30.5%
2015	4.9%	1.4%	28.1%	21.7%	6.5%	29.9%
2016	4.5%	1.2%	27.1%	19.3%	6.0%	31.0%
2017	3.9%	1.0%	25.6%	17.7%	5.1%	28.8%
2018	3.6%	1.0%	26.6%	16.2%	4.9%	30.0%
2019	3.3%	1.0%	28.9%	15.1%	4.3%	28.6%

Notes: FC debt ratio is the foreign currency debt to total debt ratio. Exporters are the firms with positive exports in each year. All variables are their values in each year. The columns with "FC Debt Ratio (>0)" shows the average foreign currency debt ratio conditional on holding a positive amount of foreign currency debt.

Table 14: Export and Import Share Among FC Borrowers vs. Non-FC Borrowers (2000-2019)

Year	Export Share	
	Positive FC debt	Zero FC debt
2000	19%	21%
2001	20%	21%
2002	20%	21%
2003	20%	19%
2004	21%	19%
2005	20%	18%
2006	20%	18%
2007	19%	18%
2008	20%	20%
2009	21%	20%
2010	21%	20%
2011	21%	20%
2012	22%	20%
2013	22%	20%
2014	21%	20%
2015	22%	21%
2016	22%	21%
2017	22%	22%
2018	21%	22%
2019	21%	23%

Notes: This table shows the average export and import shares among exporters with and without foreign currency debt. Export share is the export to sales ratio. Import share is the share of imported inputs to total variable costs.

Table 15: Firm-Level Correlations between FC debt and Other Firm-level Characteristics (2000-2019)

(1) Firm-Level Correlations with FC Debt Ratio

Year	Import Share	Export Share	Sales Share	Size	Leverage	Short-term Debt Ratio	Cash Ratio	FC Cash Ratio
2000	0.13	-0.02	0.06	0.26	0.02	-0.14	-0.03	0.04
2001	0.13	-0.02	0.01	0.21	-0.02	-0.12	0.01	0.04
2002	0.13	-0.01	0.04	0.17	-0.02	-0.07	0.05	0.02
2003	0.11	0.03	0.00	0.16	-0.02	-0.04	0.05	0.05
2004	0.10	0.04	0.04	0.19	-0.08	0.03	0.07	0.05
2005	0.12	0.05	0.06	0.20	-0.09	0.06	0.04	0.04
2006	0.14	0.03	0.04	0.19	-0.09	0.08	0.04	0.06
2007	0.14	0.02	0.06	0.24	-0.08	0.09	0.04	0.06
2008	0.19	0.01	0.04	0.19	0.00	0.07	0.07	0.05
2009	0.17	0.01	0.01	0.18	-0.02	0.09	0.07	-0.01
2010	0.21	0.00	0.02	0.18	-0.06	0.14	0.08	0.07
2011	0.20	0.01	0.02	0.14	-0.06	0.14	0.10	0.09
2012	0.18	0.02	0.03	0.13	-0.09	0.13	0.07	0.09
2013	0.18	0.01	0.03	0.16	-0.10	0.15	0.06	0.09
2014	0.20	0.01	0.04	0.17	-0.11	0.16	0.09	0.08
2015	0.21	0.00	0.02	0.17	-0.11	0.15	0.09	0.08
2016	0.21	-0.01	0.02	0.18	-0.10	0.15	0.09	0.06
2017	0.20	-0.01	0.03	0.16	-0.11	0.15	0.08	0.00
2018	0.20	-0.03	0.04	0.16	-0.10	0.16	0.05	0.00
2019	0.17	-0.04	0.02	0.16	-0.08	0.14	0.03	0.02

Notes: The table shows how the foreign currency debt to total debt ratios are correlated with firm-level characteristics. Firm-level variables in each year include import share (the share of imported inputs to total variable costs); export to sales ratio; average sales share (the export sales of firm f selling HS10 product i to country d, divided by the total exports of Korean firms to the corresponding HS4-destination market); size (log of sales); leverage (total debt to total assets ratio); short-term debt ratio (short-term debt to total debt ratio); cash ratio (cash to total assets ratio); and FC cash ratio (FC cash to total cash ratio).

Continued Table 15

(2) Firm-Level Correlations with FC Debt Ratio > 0

Year	Import Share	Export Share	Sales Share	Size	Leverage	Short-term Debt Ratio	Cash Ratio	FC Cash Ratio
2000	0.27	0.00	0.06	0.09	-0.13	-0.22	0.15	0.03
2001	0.22	-0.02	-0.01	0.06	-0.23	-0.21	0.18	0.05
2002	0.18	-0.01	0.04	0.03	-0.20	-0.11	0.23	0.03
2003	0.15	0.03	0.02	0.05	-0.26	-0.02	0.25	0.03
2004	0.13	0.03	0.04	0.12	-0.34	0.06	0.25	0.04
2005	0.15	0.04	0.07	0.15	-0.37	0.06	0.21	0.04
2006	0.14	0.00	0.07	0.16	-0.37	0.11	0.21	0.01
2007	0.15	0.01	0.10	0.19	-0.33	0.10	0.22	0.00
2008	0.18	0.01	0.04	0.10	-0.22	0.07	0.25	0.00
2009	0.15	-0.01	0.02	0.09	-0.26	0.10	0.24	0.02
2010	0.18	-0.05	0.03	0.10	-0.32	0.18	0.26	-0.01
2011	0.16	-0.03	-0.01	0.06	-0.32	0.18	0.30	0.02
2012	0.17	-0.02	0.03	0.06	-0.38	0.16	0.28	0.02
2013	0.17	-0.04	0.04	0.11	-0.40	0.27	0.30	0.06
2014	0.18	-0.03	0.04	0.13	-0.42	0.24	0.38	0.06
2015	0.19	-0.04	0.02	0.15	-0.43	0.24	0.37	0.03
2016	0.21	-0.05	-0.02	0.16	-0.45	0.23	0.42	0.01
2017	0.16	-0.05	0.01	0.09	-0.42	0.27	0.38	0.00
2018	0.17	-0.06	0.04	0.10	-0.40	0.28	0.37	0.05
2019	0.13	-0.09	-0.03	0.12	-0.39	0.26	0.30	0.03

Notes: The table shows how the foreign currency debt to total debt ratios, conditional on borrowing in foreign currency, are correlated with regressors in the regressions presented in Section 4. Regressors are their values in each year and include import share (the share of imported inputs to total variable costs); export to sales ratio; average sales share (the export sales of firm f selling HS10 product i to country d, divided by the total exports of Korean firms to the corresponding HS4-destination market); size (log of sales); leverage (total debt to total assets ratio); ST debt ratio (short-term debt to total debt ratio); cash ratio (cash to total assets ratio); and FC cash ratio (FC cash to total cash ratio).

Panel Regression: Challenging Natural Hedging Motives

Table 16: Exports and Currency Composition of Firm Borrowing in 2001–2020

	Dependent Variable: FC Debt to Total Debt Ratio					
	All Samples			Positive FC Debt		
	(1)	(2)	(3)	(4)	(5)	(6)
Export Share	0.0081*	0.0047		-0.0079	-0.0127	
	(0.0043)	(0.0042)		(0.0076)	(0.0077)	
Import Share		0.1365***			0.1428***	
		(0.0054)			(0.0086)	
Net Export to Sale Ratio			-0.0561***			-0.0833***
			(0.0035)			(0.0079)
Sales Share	-0.0020	-0.0032	0.0112***	0.0090	0.0075	0.0236***
	(0.0037)	(0.0036)	(0.0037)	(0.0078)	(0.0078)	(0.0078)
Size	0.0227***	0.0219***	0.0220***	-0.0044*	-0.0033	-0.0043
	(0.0016)	(0.0017)	(0.0016)	(0.0025)	(0.0025)	(0.0025)
Leverage	-0.0070	-0.0066	-0.0067	-0.3191***	-0.3217***	-0.3221***
	(0.0075)	(0.0071)	(0.0073)	(0.0209)	(0.0205)	(0.0207)
Short-term Debt Ratio	0.0456***	0.0439***	0.0468***	0.0776**	0.0713**	0.0751**
	(0.0094)	(0.0096)	(0.0096)	(0.0299)	(0.0298)	(0.0298)
Cash Ratio	0.1917***	0.1757***	0.1949***	0.9774***	0.9407***	0.9647***
	(0.0185)	(0.0174)	(0.0188)	(0.0544)	(0.0549)	(0.0541)
FC Cash Ratio	0.0001	0.0001	0.0002	0.0152***	0.0197***	0.0239***
	(0.0002)	(0.0002)	(0.0002)	(0.0042)	(0.0044)	(0.0040)
Adjusted R^2	0.1442	0.1571	0.1484	0.2495	0.2579	0.2543
Observations	90331	90331	90331	27343	27343	27343

Notes: The observation is at firm f x year t. We include sector and main bank by year fixed effects. The sample period is from 2001 – 2020. Columns 1, 2 and 3 present estimates based on the full sample of firms. Columns 4, 5 and 6 report estimates based on a subsample limited to firms with a positive amount of foreign currency debt.

Table 17: Exports and Currency Composition of Firm Borrowing in 2001–2020 – Normalized by Total Assets

	Dependent Variable: FC Debt to Total Assets					
	All Samples			Positive FC Debt		
	(1)	(2)	(3)	(4)	(5)	(6)
Exports to Total Assets	-0.0026***	-0.0046***		0.0025	-0.0024	
	(0.0007)	(0.0009)		(0.0020)	(0.0025)	
Imports to Total Assets		0.0302***			0.0462***	
		(0.0017)			(0.0034)	
Net Exports to Total Assets			-0.0131***			-0.0225***
			(0.0010)			(0.0024)
Sales Share	0.0005	0.0010	0.0030***	0.0036	0.0037	0.0094***
	(0.0010)	(0.0010)	(0.0010)	(0.0024)	(0.0024)	(0.0024)
Size	0.0057***	0.0046***	0.0056***	-0.0014	-0.0027*	-0.0012
	(0.0005)	(0.0004)	(0.0005)	(0.0016)	(0.0015)	(0.0016)
Leverage	0.0832***	0.0820***	0.0831***	0.2289***	0.2234***	0.2272***
	(0.0100)	(0.0099)	(0.0100)	(0.0216)	(0.0211)	(0.0216)
Short-term Debt Ratio	0.0087***	0.0073**	0.0088***	0.0059	0.0004	0.0047
	(0.0028)	(0.0028)	(0.0028)	(0.0083)	(0.0083)	(0.0083)
Cash Ratio	0.0525***	0.0455***	0.0541***	0.2174***	0.1924***	0.2149***
	(0.0087)	(0.0079)	(0.0089)	(0.0259)	(0.0257)	(0.0258)
FC Cash Ratio	0.0001	0.0001	0.0001	0.0083***	0.0099***	0.0121***
	(0.0001)	(0.0001)	(0.0001)	(0.0019)	(0.0019)	(0.0019)
Adjusted R^2	0.1551	0.1677	0.1612	0.2764	0.2924	0.2837
Observations	90331	90331	90331	27343	27343	27343

Notes: The observation is at firm f x year t. We include sector and main bank by year fixed effects. The sample period is from 2001 – 2020. Columns 1, 2 and 3 present estimates based on the full sample of firms. Columns 4, 5 and 6 report estimates based on a subsample limited to firms with a positive amount of foreign currency debt.

Additional Tables and Figures for Section 4

Table 18: Summary Statistics: Exports

	Observations	Mean	Std
Export Quantity Change ($h = 4$)	11,151	-0.082	1.360
Export Price Change ($h = 4$)	11,151	-0.048	0.261
FC Debt Ratio	11,151	0.204	0.204
Import Share	11,151	0.178	0.168
Export Share	11,151	0.346	0.246
Sales Share	11,151	0.307	0.339
Size	11,151	18.604	1.968
Leverage	11,151	0.324	0.150
Short-term (ST) Debt Ratio	11,151	0.670	0.219
Cash Ratio	11,151	0.087	0.081
FC Cash Ratio	11,151	0.033	0.102

Notes: The table shows the summary statistics for the data used in regressions in Section 4.1. Regressors are their values in 1996. The export price and the quantity change is from 1997Q3 to 1998Q3.

Table 19: Summary Statistics: Inputs

	Observations	Mean	Std
$\Delta Networth$ (1996-1997)	2,353	0.027	0.109
$\Delta Cash$ (1996-1997)	2,340	0.146	1.00
$\Delta Capital$ (1996-1997)	2,356	0.038	0.310
$\Delta Networth$ (1996-1998)	2,262	0.102	0.222
$\Delta Cash$ (1996-1998)	2,266	0.051	1.285
$\Delta Capital$ (1996-1998)	2,284	0.073	0.501
FC Debt Ratio	2,356	0.123	0.185
Import Share	2,356	0.164	0.203
Export Share	2,356	0.143	0.213
Size	2,356	17.167	1.435
Leverage	2,356	0.372	0.213
Short-term (ST) Debt Ratio	2,356	0.648	0.260
Cash Ratio	2,356	0.093	0.087
FC Cash Ratio	2,356	0.012	0.070

Notes: The table shows the summary statistics for the data used in regressions in Section 4.2. Regressors are their values in 1996.

Table 20: Summary Statistics: Imports

	1996-1997			1996-1998		
	Observations	Mean	Std	Observations	Mean	Std
Import Value Change	44,075	-0.138	1.459	26,271	-0.493	1.594
Import Quantity Change	44,075	0.078	1.532	26,271	-0.373	1.636
FC Debt Ratio	44,075	0.182	0.222	26,271	0.186	0.225
Import Share	44,075	0.287	0.222	26,271	0.300	0.222
Export Share	44,075	0.168	0.211	26,271	0.176	0.217
Sales Share	44,075	0.105	0.229	26,271	0.109	0.229
Size	44,075	18.551	1.962	26,271	18.495	1.959
Leverage	44,075	0.325	0.184	26,271	0.322	0.182
Short-term (ST) Debt Ratio	44,075	0.697	0.228	26,271	0.696	0.229
Cash Ratio	44,075	0.082	0.078	26,271	0.084	0.080
FC Cash Ratio	44,075	0.034	0.128	26,271	0.033	0.125

Notes: The table shows the summary statistics for the data used in regressions in Section 4.2. Regressors are their values in 1996.

Table 21: Dynamic Responses of Export Quantities

	h=-4	h=-3	h=-2	h=-1	h=1	h=2	h=3	h=4	h=5
FC Debt Ratio	-0.6134	-0.0079	-0.5955	1.0250	-1.0167	-1.9384*	-1.7870	-5.5760***	-2.8357**
	(1.0237)	(1.0549)	(1.0322)	(0.8905)	(0.9375)	(1.1733)	(1.2639)	(1.2976)	(1.3303)
FC Debt Ratio× Size	0.0304	-0.0025	0.0302	-0.0543	0.0510	0.0944	0.0994	0.3056***	0.1418*
	(0.0566)	(0.0583)	(0.0571)	(0.0492)	(0.0518)	(0.0649)	(0.0708)	(0.0725)	(0.0735)
Sales Share	0.0482	0.0792	-0.2929	0.0922	0.0299	-0.1714	0.3402	-0.3468	-0.1425
	(0.3217)	(0.3375)	(0.3152)	(0.2813)	(0.2804)	(0.3325)	(0.3644)	(0.3938)	(0.4210)
Import Share	-1.0583	-0.0032	0.0829	0.0993	1.5207*	2.5423**	1.3691	2.6761**	0.4492
	(1.0303)	(1.0538)	(0.9922)	(0.8710)	(0.9141)	(1.0850)	(1.1258)	(1.2472)	(1.3406)
Size	-0.0297	0.0143	0.0744	0.0660	-0.0300	0.0623	-0.0504	-0.0780	-0.0370
	(0.0482)	(0.0504)	(0.0478)	(0.0415)	(0.0431)	(0.0541)	(0.0569)	(0.0586)	(0.0615)
Leverage	0.5359	2.3796*	2.4617*	2.5291**	0.3153	1.3354	-2.5990*	-2.3294	-3.2660*
	(1.3364)	(1.3693)	(1.3816)	(1.1728)	(1.1926)	(1.5316)	(1.5288)	(1.7086)	(1.7465)
ST Debt Ratio	-0.1641	0.2402	0.5347	0.1879	-0.7016	0.3239	-0.2056	0.3629	0.5670
	(0.8113)	(0.8333)	(0.7923)	(0.6860)	(0.7332)	(0.9103)	(0.9871)	(1.0005)	(1.0935)
Cash Ratio	-0.0675	-0.2496	0.0342	-0.1217	-0.3434*	-0.4520**	-0.5604**	-0.5386**	-0.5629**
	(0.2065)	(0.2197)	(0.2085)	(0.1752)	(0.1828)	(0.2222)	(0.2428)	(0.2587)	(0.2602)
FC Cash Ratio	-2.1836	-3.5251**	-1.3340	-1.6059	1.7948	3.4975*	-0.7088	4.4807**	1.3183
	(1.4490)	(1.4913)	(1.5165)	(1.2814)	(1.3467)	(1.8513)	(1.7694)	(1.7528)	(1.9878)
Export Share	-0.9556	-1.4718*	0.7497	-0.6843	-1.2859	-0.0981	-0.5701	-1.2785	0.6062
	(0.7867)	(0.8826)	(0.8749)	(0.7353)	(0.8045)	(0.8793)	(1.0202)	(1.0928)	(1.1955)
Import Share × Size	0.0558	-0.0047	-0.0123	-0.0128	-0.0799	-0.1306**	-0.0699	-0.1550**	-0.0281
	(0.0571)	(0.0584)	(0.0549)	(0.0485)	(0.0507)	(0.0601)	(0.0623)	(0.0693)	(0.0742)
Leverage × Size	-0.0273	-0.1391*	-0.1458*	-0.1549**	-0.0253	-0.0734	0.1464*	0.1305	0.1828*
	(0.0763)	(0.0779)	(0.0787)	(0.0666)	(0.0680)	(0.0875)	(0.0877)	(0.0974)	(0.0994)
ST Debt Ratio × Size	0.0070	-0.0099	-0.0307	-0.0154	0.0328	-0.0276	0.0070	-0.0226	-0.0328
	(0.0458)	(0.0467)	(0.0446)	(0.0386)	(0.0411)	(0.0513)	(0.0559)	(0.0564)	(0.0615)
FC Cash Ratio × Size	0.1165	0.1921**	0.0680	0.0892	-0.0959	-0.1926**	0.0187	-0.2624***	-0.0798
	(0.0779)	(0.0784)	(0.0796)	(0.0675)	(0.0713)	(0.0957)	(0.0955)	(0.0964)	(0.1065)
Export Share × Size	0.0684	0.0937*	-0.0326	0.0460	0.0767*	0.0009	0.0245	0.0703	-0.0397
	(0.0448)	(0.0500)	(0.0497)	(0.0417)	(0.0454)	(0.0501)	(0.0579)	(0.0619)	(0.0673)
Sale Share × Size	0.0188	0.0103	0.0217	-0.0030	-0.0017	0.0044	-0.0253	0.0075	0.0004
	(0.0173)	(0.0181)	(0.0169)	(0.0151)	(0.0150)	(0.0177)	(0.0196)	(0.0213)	(0.0225)
Adjusted R^2	0.0182	0.0243	0.0210	0.0147	0.0173	0.0290	0.0241	0.0287	0.0004
Observations	16,204	13,856	13,663	14,346	13,528	11,844	11,627	11,151	(0.0225)

Table 22: Dynamic Responses of Export Prices

	h=-4	h=-3	h=-2	h=-1	h=1	h=2	h=3	h=4	h=5
FC Debt Ratio	0.0587	-0.1025	-0.1797	0.1149	-0.0615	0.2517	0.5169**	0.5063**	0.3990*
	(0.1815)	(0.1843)	(0.1741)	(0.1561)	(0.1719)	(0.2131)	(0.2219)	(0.2215)	(0.2407)
FC Debt Ratio× Size	-0.0030	0.0047	0.0097	-0.0071	0.0040	-0.0137	-0.0284**	-0.0270**	-0.0210
	(0.0100)	(0.0102)	(0.0096)	(0.0086)	(0.0095)	(0.0118)	(0.0123)	(0.0123)	(0.0133)
Sales Share	-0.0056	-0.0487	-0.0558	-0.0033	-0.0095	-0.0022	-0.0111	0.0589	0.0111
	(0.0571)	(0.0587)	(0.0557)	(0.0532)	(0.0543)	(0.0655)	(0.0676)	(0.0743)	(0.0763)
Import Share	0.3804**	0.1288	0.0475	0.0054	-0.0676	0.6552***	0.1994	0.1400	0.3788*
	(0.1707)	(0.1749)	(0.1664)	(0.1465)	(0.1466)	(0.1766)	(0.1965)	(0.2115)	(0.2298)
Size	0.0100	0.0052	-0.0301***	0.0012	-0.0043	0.0024	0.0029	0.0021	0.0078
	(0.0086)	(0.0089)	(0.0081)	(0.0070)	(0.0078)	(0.0093)	(0.0097)	(0.0106)	(0.0114)
Leverage	0.0737	-0.0656	-0.5277**	-0.1544	0.0686	0.1708	0.6657**	0.5354*	0.7575**
	(0.2281)	(0.2362)	(0.2140)	(0.1919)	(0.2055)	(0.2528)	(0.2612)	(0.2851)	(0.3097)
ST Debt Ratio	0.1538	0.1237	-0.4370***	0.0954	-0.0692	-0.2289	-0.3191*	-0.3735**	-0.1104
	(0.1385)	(0.1462)	(0.1348)	(0.1136)	(0.1278)	(0.1491)	(0.1659)	(0.1793)	(0.1968)
Cash Ratio	-0.0132	0.0450	-0.0315	-0.0057	-0.0270	0.0410	0.1074***	0.0488	0.0629
	(0.0352)	(0.0362)	(0.0348)	(0.0315)	(0.0325)	(0.0411)	(0.0406)	(0.0444)	(0.0469)
FC Cash Ratio	-0.3213	-0.4121	-0.4023	0.1209	0.0401	-0.0584	-0.4105	-0.0037	-0.2354
	(0.2793)	(0.2762)	(0.2528)	(0.2492)	(0.2671)	(0.3310)	(0.3226)	(0.3659)	(0.4067)
Export Share	-0.1733	-0.1817	-0.0712	-0.3266***	-0.0516	-0.0570	0.0362	0.4337**	0.0853
	(0.1413)	(0.1442)	(0.1383)	(0.1236)	(0.1332)	(0.1575)	(0.1591)	(0.1735)	(0.1889)
Import Share × Size	-0.0200**	-0.0053	-0.0014	0.0008	0.0050	-0.0350***	-0.0105	-0.0048	-0.0187
	(0.0094)	(0.0096)	(0.0091)	(0.0081)	(0.0080)	(0.0097)	(0.0108)	(0.0117)	(0.0127)
Leverage × Size	-0.0046	0.0030	0.0291**	0.0091	-0.0053	-0.0118	-0.0377**	-0.0328**	-0.0427**
	(0.0129)	(0.0133)	(0.0121)	(0.0108)	(0.0116)	(0.0143)	(0.0148)	(0.0162)	(0.0176)
ST Debt Ratio × Size	-0.0103	-0.0094	0.0229***	-0.0069	0.0031	0.0137	0.0180*	0.0221**	0.0055
	(0.0078)	(0.0082)	(0.0075)	(0.0063)	(0.0071)	(0.0084)	(0.0093)	(0.0101)	(0.0111)
FC Cash Ratio × Size	0.0158	0.0201	0.0233*	-0.0039	-0.0001	0.0054	0.0246	0.0043	0.0177
	(0.0148)	(0.0148)	(0.0136)	(0.0132)	(0.0142)	(0.0175)	(0.0174)	(0.0193)	(0.0211)
Export Share × Size	0.0092	0.0090	0.0034	0.0189***	0.0024	0.0027	-0.0020	-0.0250**	-0.0056
	(0.0080)	(0.0082)	(0.0078)	(0.0070)	(0.0075)	(0.0089)	(0.0090)	(0.0098)	(0.0107)
Sale Share × Size	-0.0002	0.0022	0.0028	-0.0002	0.0008	0.0003	0.0007	-0.0022	-0.0010
	(0.0030)	(0.0031)	(0.0030)	(0.0028)	(0.0029)	(0.0035)	(0.0036)	(0.0040)	(0.0041)
Adjusted R^2	0.0877	0.0927	0.0702	0.0616	0.1174	0.1305	0.121	0.1754	0.1628
Observations	16,204	13,856	13,663	14,346	13,528	11,844	11,627	11,151	10,558

Table 23: FC Debt and Other Inputs – Other Control Variables

	$\Delta Networth$		$\Delta Cash$		$\Delta Capital$	
	(1) 96-97	(2) 96-98	(3) 96-97	(4) 96-98	(5) 96-97	(6) 96-98
FC Debt Ratio	-0.2427*	-0.7951***	-2.1015*	-4.4445**	-0.9611**	-1.7649***
	(0.1405)	(0.2852)	(1.1856)	(1.7601)	(0.4711)	(0.6808)
FC Debt Ratio × Size	0.0129	0.0448***	0.1204*	0.2556***	0.0496*	0.0910**
	(0.0079)	(0.0160)	(0.0670)	(0.0984)	(0.0267)	(0.0383)
Import Share	0.2343	0.6795*	0.5752	1.2776	0.0362	0.6111
	(0.2012)	(0.3567)	(1.5606)	(2.1425)	(0.6038)	(1.0367)
Size	0.0062	0.0104	0.0428	-0.1555*	-0.0222	0.0033
	(0.0072)	(0.0140)	(0.0624)	(0.0865)	(0.0271)	(0.0364)
Leverage	0.0210	0.5993	-1.8118	-3.4443	-1.4706**	-1.6167*
	(0.1701)	(0.3846)	(1.5221)	(2.1126)	(0.6115)	(0.8689)
ST Debt Ratio	0.2179*	0.1792	0.3996	-1.7061	0.2675	0.2068
	(0.1160)	(0.2402)	(1.0239)	(1.4064)	(0.4524)	(0.6065)
Cash Ratio	0.1527***	0.2802***	-3.4405***	-4.3594***	0.1950*	0.4574***
	(0.0282)	(0.0622)	(0.2694)	(0.3732)	(0.1016)	(0.1645)
FC Cash Ratio	0.4226	1.8976**	0.4983	-0.8591	0.5598	2.9467
	(0.3055)	(0.7532)	(2.6127)	(4.9565)	(1.0491)	(1.9808)
Export Share	0.1504	-0.3433	4.0510**	4.7858**	1.2894*	0.9085
	(0.1823)	(0.4324)	(1.6713)	(2.0478)	(0.7191)	(0.9286)
Import Share × Size	-0.0139	-0.0399*	-0.0329	-0.0482	0.0026	-0.0342
	(0.0117)	(0.0209)	(0.0909)	(0.1240)	(0.0349)	(0.0601)
Leverage × Size	-0.0044	-0.0316	0.0692	0.1487	0.0827**	0.0978*
	(0.0101)	(0.0225)	(0.0896)	(0.1234)	(0.0359)	(0.0508)
ST Debt Ratio × Size	-0.0136**	-0.0116	-0.0377	0.0909	-0.0168	-0.0076
	(0.0068)	(0.0143)	(0.0605)	(0.0823)	(0.0263)	(0.0355)
FC Cash Ratio × Size	-0.0248	-0.1075***	-0.0497	0.0381	-0.0266	-0.1562
	(0.0163)	(0.0400)	(0.1392)	(0.2591)	(0.0537)	(0.1039)
Export Share × Size	-0.0063	0.0276	-0.2242**	-0.2407**	-0.0775*	-0.0510
	(0.0108)	(0.0256)	(0.0981)	(0.1205)	(0.0417)	(0.0542)
Adjusted R2	0.1373	0.1062	0.1197	0.1152	0.0435	0.0549
Observations	2353	2262	2340	2266	2356	2284

Notes: Robust standard errors are reported in the parentheses. * p<0.1, ** p<0.05, *** p<0.01.

Table 24: FC Debt and Other Inputs *Before* Devaluation – Other Control Variables

	$\Delta Networth$		$\Delta Cash$		$\Delta Capital$	
	(1) 95-96	(2) 94-96	(3) 95-96	(4) 94-96	(5) 95-96	(6) 94-96
FC Debt Ratio	0.0922	-0.1733	0.1882	-1.9265	0.3731	0.7428
	(0.0879)	(0.1484)	(1.2188)	(1.6535)	(0.5709)	(0.8072)
FC Debt Ratio × Size	-0.0054	0.0089	-0.0170	0.1121	-0.0229	-0.0418
	(0.0049)	(0.0081)	(0.0685)	(0.0925)	(0.0321)	(0.0450)
Import Share	-0.0074	-0.2441	-2.3380*	-3.7349**	-0.0945	-0.8560
	(0.1103)	(0.1794)	(1.3914)	(1.7277)	(0.5734)	(0.8757)
Size	0.0008	-0.0108	-0.0133	-0.0794	0.0454*	0.0413
	(0.0048)	(0.0086)	(0.0617)	(0.0891)	(0.0266)	(0.0411)
Leverage	0.1071	0.0633	-0.2006	-3.6811*	0.1427	0.0442
	(0.1292)	(0.2064)	(1.6073)	(2.0477)	(0.5158)	(0.8694)
ST Debt Ratio	0.0143	-0.0361	-0.4342	0.8859	1.0393**	2.1204***
	(0.0787)	(0.1446)	(1.0213)	(1.5071)	(0.4635)	(0.7372)
Cash Ratio	-0.1042***	-0.1692***	-3.2389***	-4.5069***	0.1385	0.1884
	(0.0199)	(0.0318)	(0.2698)	(0.3328)	(0.0850)	(0.1286)
FC Cash Ratio	-0.3598**	0.0052	-6.4378***	-1.3396	1.3792*	-0.8537
	(0.1779)	(0.2253)	(1.9709)	(2.7028)	(0.7719)	(1.4467)
Export Share	-0.0533	0.0049	0.4366	0.8351	0.4646	0.2383
	(0.1105)	(0.1924)	(1.4944)	(1.6364)	(0.5627)	(1.1577)
Import Share × Size	-0.0015	0.0116	0.1202	0.1891*	-0.0017	0.0366
	(0.0064)	(0.0103)	(0.0796)	(0.0979)	(0.0329)	(0.0499)
Leverage × Size	-0.0017	0.0038	-0.0018	0.1822	-0.0066	-0.0024
	(0.0077)	(0.0119)	(0.0946)	(0.1160)	(0.0297)	(0.0501)
ST Debt Ratio × Size	0.0010	0.0047	0.0318	-0.0378	-0.0528*	-0.1004**
	(0.0046)	(0.0083)	(0.0601)	(0.0866)	(0.0270)	(0.0424)
FC Cash Ratio × Size	0.0216**	0.0050	0.2895***	0.0049	-0.0698*	0.0599
	(0.0100)	(0.0124)	(0.1054)	(0.1464)	(0.0403)	(0.0734)
Export Share × Size	0.0043	0.0023	-0.0193	-0.0242	-0.0232	-0.0056
	(0.0064)	(0.0111)	(0.0867)	(0.0948)	(0.0328)	(0.0673)
Adjusted R2	0.1571	0.1965	0.1121	0.1473	0.0828	0.1152
Observations	2153	1814	2149	1823	2167	1830

Notes: Robust standard errors are reported in the parentheses. * p<0.1, ** p<0.05, *** p<0.01.

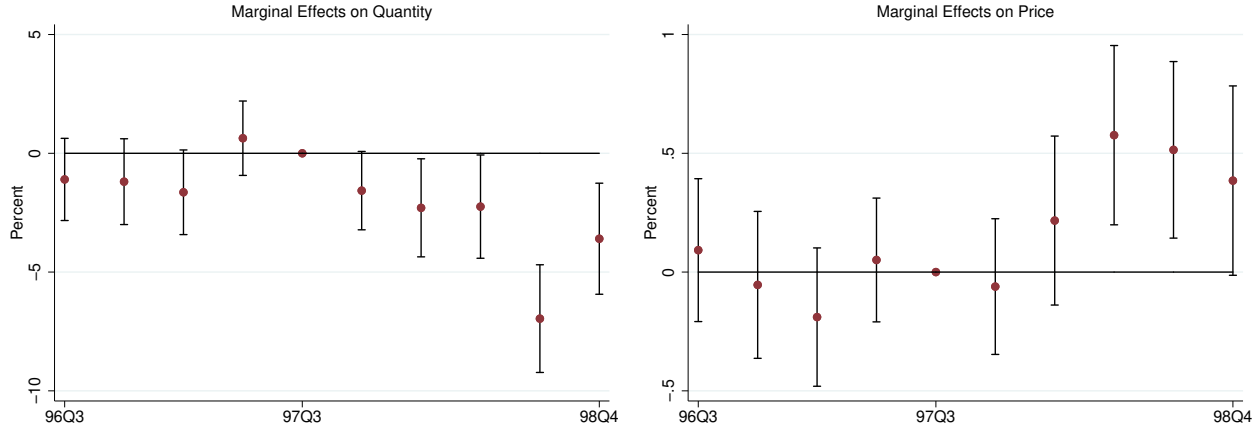
Table 25: FC Debt, and Import Quantities and Values: Other Control Variables

Import	$\Delta Quantity$		$\Delta Value$	
	(1) 96-97	(2) 96-98	(3) 96-97	(4) 96-98
FC Debt Ratio	0.3690	-1.3640*	0.6456	-1.4548**
	(0.5007)	(0.7007)	(0.4778)	(0.6876)
FC Debt Ratio × Size	-0.0111	0.0767**	-0.0278	0.0806**
	(0.0273)	(0.0385)	(0.0260)	(0.0377)
Sales Share	-0.7372***	-0.8891***	-0.5782***	-0.8850***
	(0.0336)	(0.0486)	(0.0323)	(0.0478)
Import Share	-1.2960**	-0.9890	-1.3434***	-1.0723
	(0.5396)	(0.7181)	(0.5072)	(0.7005)
Size	-0.0371	-0.0927**	-0.0515**	-0.0942**
	(0.0274)	(0.0376)	(0.0262)	(0.0367)
Leverage	0.5276	0.7294	0.7417	0.6798
	(0.6546)	(0.9285)	(0.6368)	(0.9100)
ST Debt Ratio	-0.4475	-1.6632**	-0.5960	-1.7970***
	(0.4487)	(0.6566)	(0.4318)	(0.6416)
Cash Ratio	-0.1008	-0.0887	-0.0790	-0.0326
	(0.1167)	(0.1631)	(0.1134)	(0.1608)
FC Cash Ratio	-1.7885*	0.3753	-1.6079	0.6880
	(1.0495)	(1.1551)	(1.0007)	(1.1425)
Export Share	0.8572	1.0037	0.7129	0.6902
	(0.6293)	(0.8818)	(0.6053)	(0.8596)
Import Share × Size	0.0637**	0.0385	0.0647**	0.0431
	(0.0307)	(0.0407)	(0.0288)	(0.0397)
Leverage × Size	-0.0312	-0.0438	-0.0450	-0.0421
	(0.0377)	(0.0534)	(0.0365)	(0.0523)
ST Debt Ratio × Size	0.0276	0.0878**	0.0349	0.0946**
	(0.0256)	(0.0376)	(0.0246)	(0.0368)
FC Cash Ratio × Size	0.0925*	-0.0197	0.0831	-0.0372
	(0.0539)	(0.0610)	(0.0514)	(0.0601)
Export Share × Size	-0.0538	-0.0354	-0.0445	-0.0167
	(0.0365)	(0.0509)	(0.0351)	(0.0496)
Adjusted R2	0.0197	0.0446	0.0219	0.0480
Observations	44075	44075	26271	26271

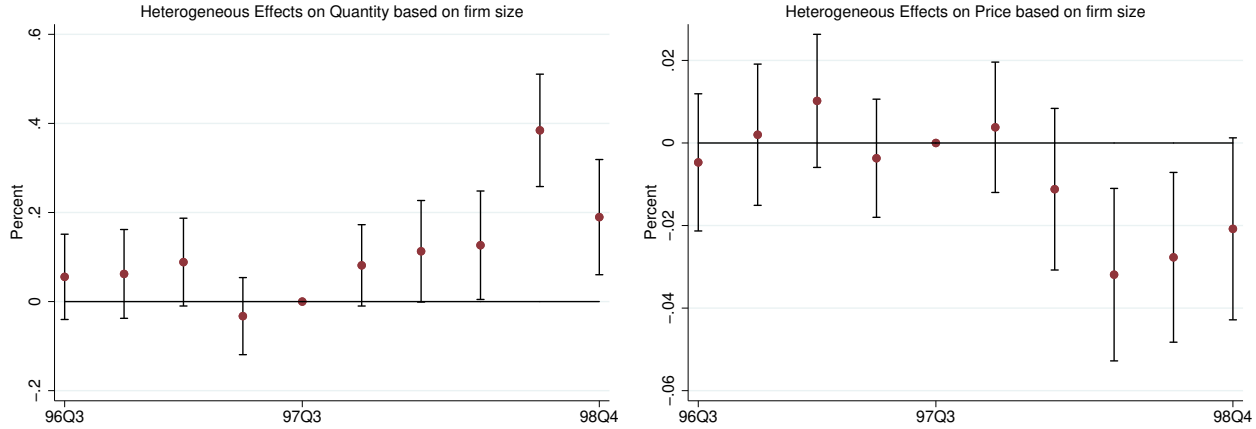
Notes: Robust standard errors are reported in the parentheses. * p<0.1, ** p<0.05, *** p<0.01.

Figure 6: Dynamic Effects of FC Debt on Export Price and Quantity
– Currency Fixed Effects

Upper Panel: Dynamic Effects of FC Debt on Export Price and Quantity



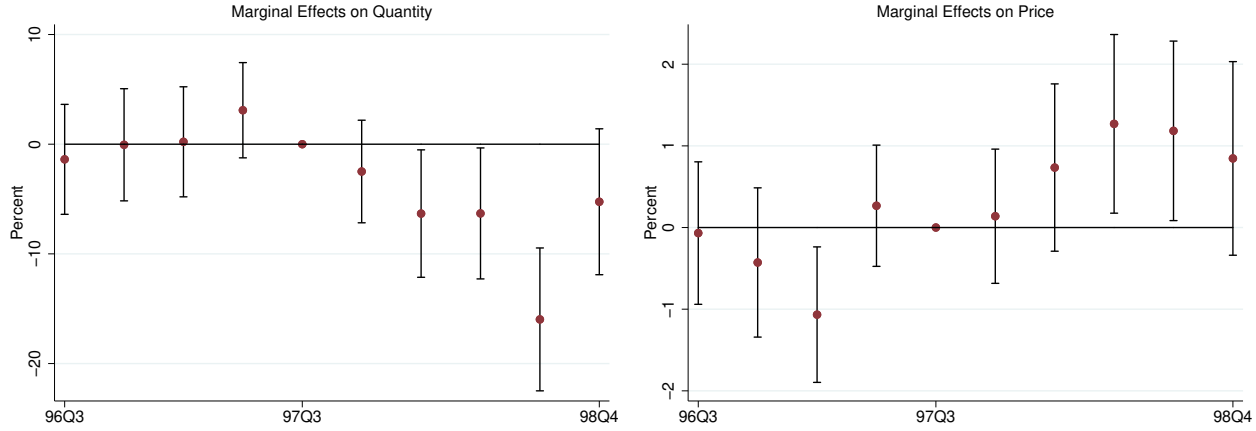
Lower Panel: Heterogeneity Across Firm Size



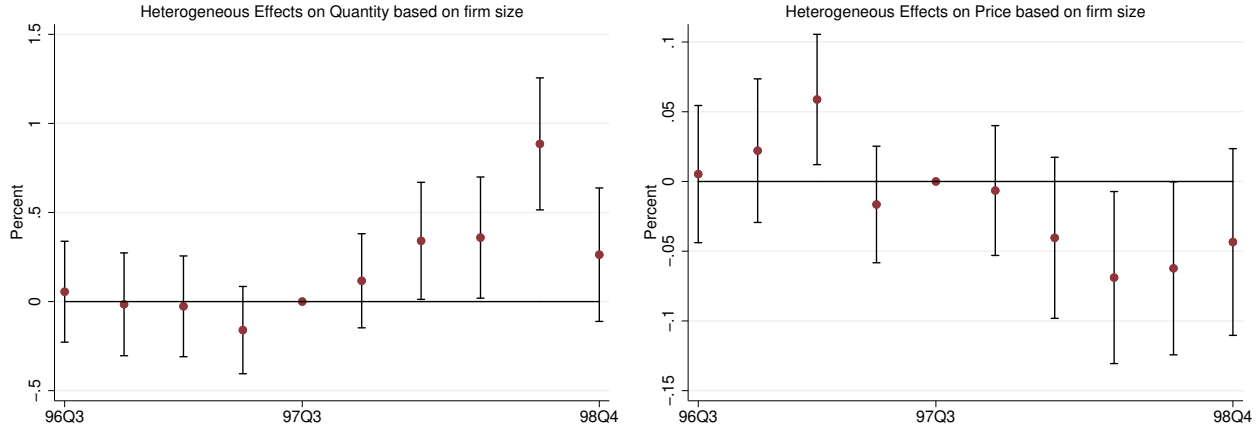
Notes: The dependent variable is the log change in the export quantity and price relative to 1997Q3 level. The top panels plot $\beta_{0,h}$, and the bottom panels plot $\beta_{1,h}$ estimated in Equation (2). The figures on the left are the estimates of changes in the export quantity, and those on the right are the estimates of changes in the export price. The bars represent the 90% confidence interval with robust standard errors.

Figure 7: Dynamic Effects of FC Debt on Export Price and Quantity
– FC Debt to Total Assets

Upper Panel: Dynamic Effects on Export Price and Quantity



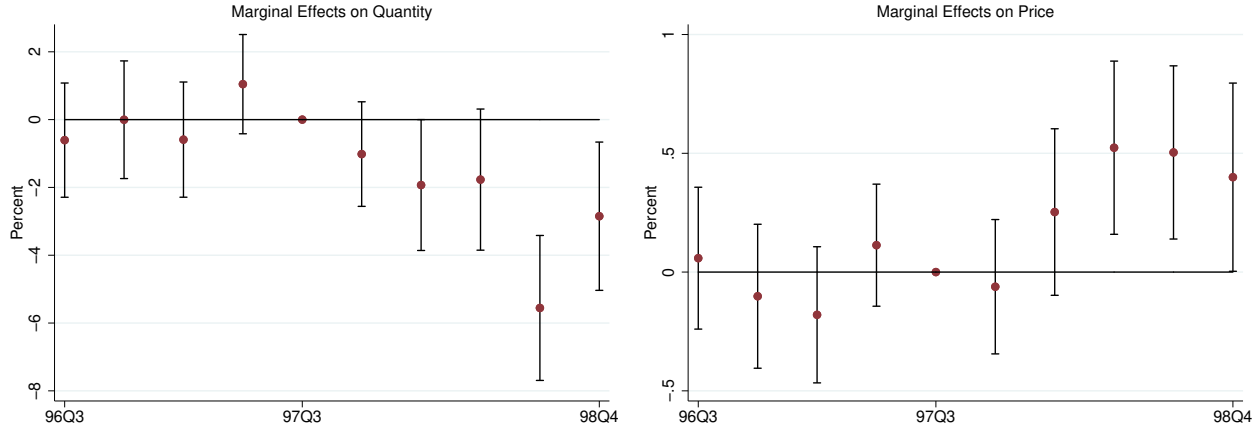
Lower Panel: Heterogeneity Across Firm Size



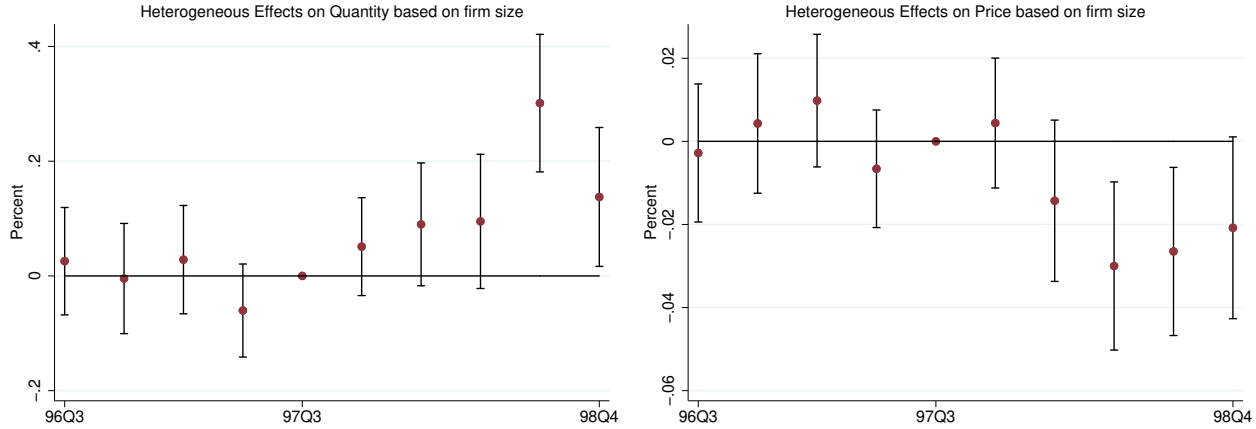
Notes: The dependent variable is the log change in the export quantity and price relative to 1997Q3 level. The top panels plot $\beta_{0,h}$, and the bottom panels plot $\beta_{1,h}$ estimated in Equation (2). The figures on the left are the estimates of changes in the export quantity, and those on the right are the estimates of changes in the export price. The bars represent the 90% confidence interval with robust standard errors.

Figure 8: Dynamic Effects of FC Debt on Export Price and Quantity
– FC Debt × Sales Share

Upper Panel: Dynamic Effects on Export Price and Quantity



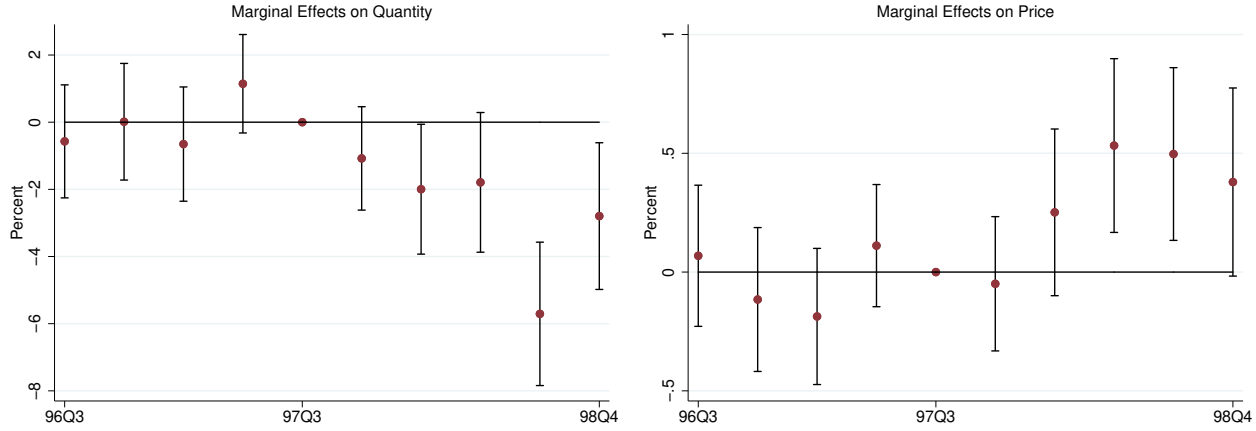
Lower Panel: Heterogeneity Across Firm Size



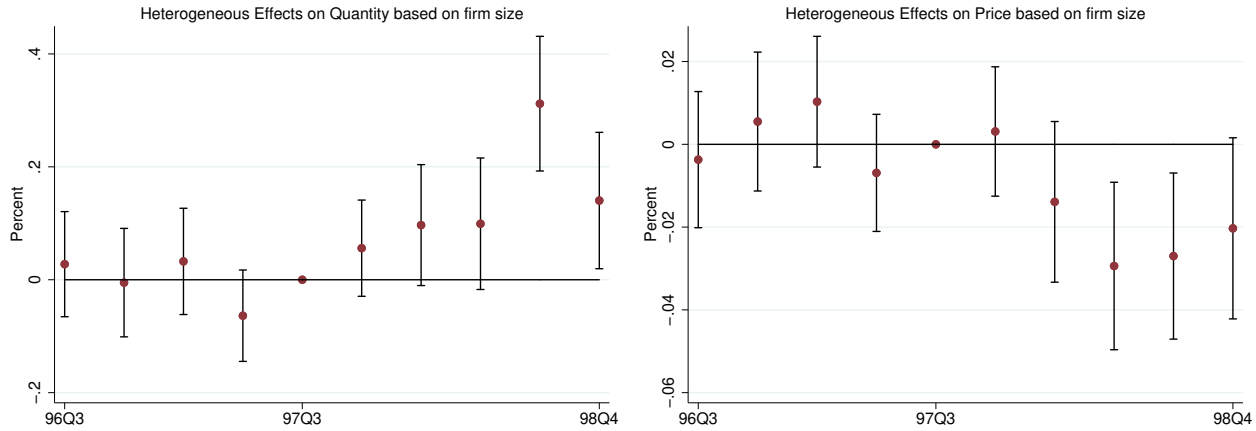
Notes: The dependent variable is the log change in the export quantity and price relative to 1997Q3 level. The top panels plot $\beta_{0,h}$, and the bottom panels plot $\beta_{1,h}$ estimated in Equation (2). The figures on the left are the estimates of changes in the export quantity, and those on the right are the estimates of changes in the export price. The bars represent the 90% confidence interval with robust standard errors.

Figure 9: Dynamic Effects of FC Debt on Export Price and Quantity
– Debt to Sales Ratio

Upper Panel: Dynamic Effects on Export Price and Quantity



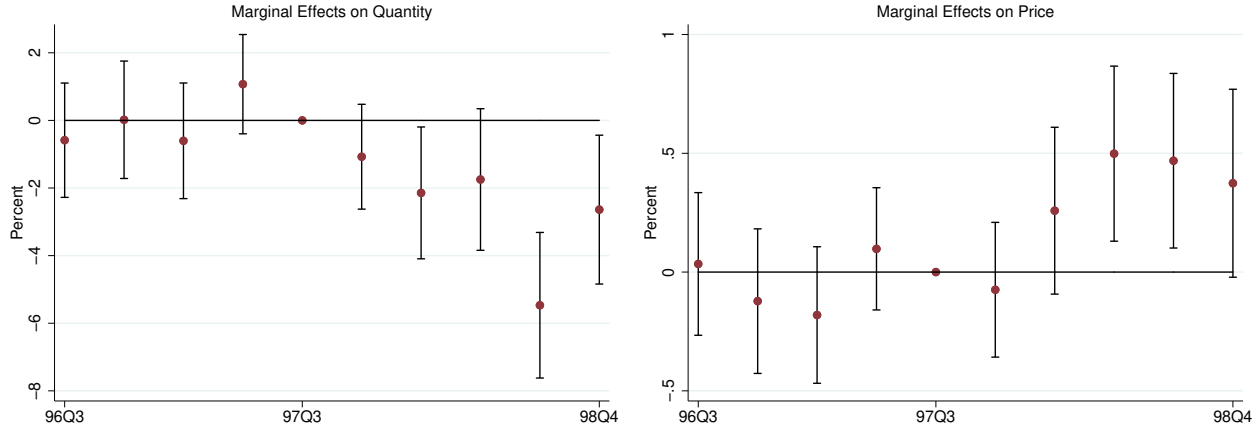
Lower Panel: Heterogeneity Across Firm Size



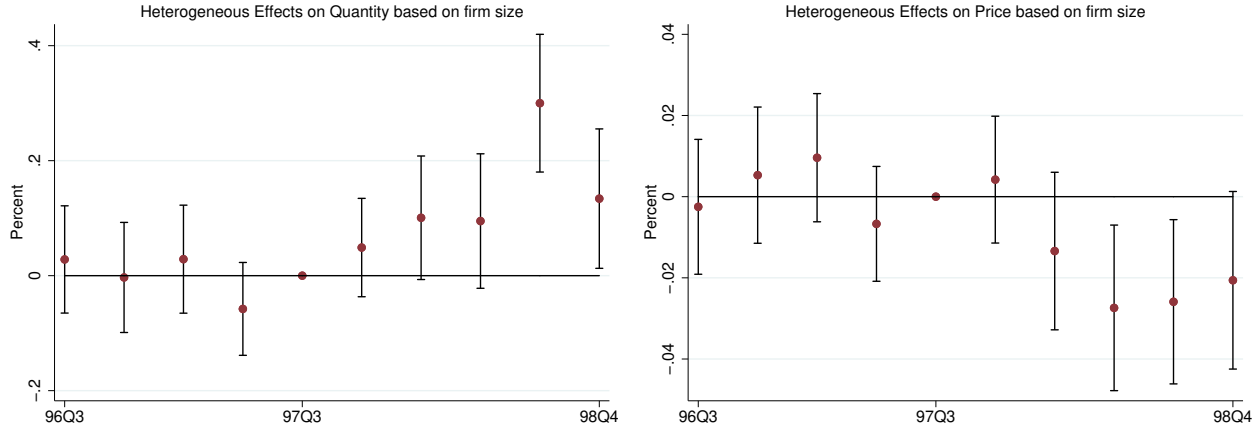
Notes: The dependent variable is the log change in the export quantity and price relative to 1997Q3 level. The top panels plot $\beta_{0,h}$, and the bottom panels plot $\beta_{1,h}$ estimated in Equation (2). The figures on the left are the estimates of changes in the export quantity, and those on the right are the estimates of changes in the export price. The bars represent the 90% confidence interval with robust standard errors.

Figure 10: Dynamic Effects of FC Debt on Export Price and Quantity
– FC Debt Ratio× Destination Country Dummies

Upper Panel: Dynamic Effects on Export Price and Quantity



Lower Panel: Heterogeneity Across Firm Size



Notes: The dependent variable is the log change in the export quantity and price relative to 1997Q3 level. The top panels plot $\beta_{0,h}$, and the bottom panels plot $\beta_{1,h}$ estimated in Equation (2). The figures on the left are the estimates of changes in the export quantity, and those on the right are the estimates of changes in the export price. The bars represent the 90% confidence interval with robust standard errors.

Additional Tables and Figures for Section 5

Table 26: Summary Statistics: Panel Regressions – Export Quantity and Price

	Observations	Mean	Std
Quantity Change	1,947,779	0.01	1.50
Price Change	1,947,779	0.02	0.27
Exchange Rate Change	1,947,779	0.00	0.07
FC Debt Ratio	1,947,779	0.13	0.25
Import Share	1,947,779	0.17	0.18
Sales Share	1,947,779	0.16	0.29
Size	1,947,779	18.97	2.39
Leverage	1,947,779	0.25	0.19
Short-term (ST) Debt Ratio	1,947,779	0.74	0.30
Cash Ratio	1,947,779	0.05	0.06
FC Cash Ratio	1,947,779	0.23	2.22
Export Share	1,947,779	0.36	0.26

Notes: The table shows the summary statistics for the panel data used in regressions in Section 5.

Table 27: Panel Regression of Export Quantity Changes on FC Debt — Other Variables

Dependent Variable:	Export Quantity	
	(1)	(2)
FC Debt Ratio	-0.1670***	-0.1670**
	(0.0453)	(0.0668)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	-1.3839**	-1.3839**
	(0.5447)	(0.6805)
$\Delta E_{KRW/\$}$	-3.0097***	-3.0097***
	(0.6176)	(0.8138)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	0.0660**	0.0660*
	(0.0280)	(0.0359)
FC Debt Ratio $\times$Size	0.0075***	0.0075**
	(0.0023)	(0.0036)
Import Share	-0.0512	-0.0512
	(0.0695)	(0.1029)
Sales Share	0.2518***	0.2518***
	(0.0305)	(0.0379)
Size	-0.0002	-0.0002
	(0.0024)	(0.0040)
Leverage	0.4703***	0.4703***
	(0.0690)	(0.0977)
ST Debt Ratio	-0.2111***	-0.2111***
	(0.0334)	(0.0513)
Cash Ratio	0.5959***	0.5959*
	(0.2050)	(0.3361)
FC Cash Ratio	-0.0568***	-0.0568***
	(0.0157)	(0.0209)
Export Share	0.0080	0.0080
	(0.0555)	(0.0831)
Import Share$\times\Delta E_{KRW/\$}$	-5.2304***	-5.2304***
	(0.9250)	(1.2115)
Sales Share$\times\Delta E_{KRW/\$}$	-0.4750	-0.4750
	(0.4519)	(0.5137)
Size$\times\Delta E_{KRW/\$}$	0.1471***	0.1471***
	(0.0330)	(0.0440)
Leverage$\times\Delta E_{KRW/\$}$	-1.2184	-1.2184
	(0.9610)	(1.2843)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	2.5648***	2.5648***
	(0.4983)	(0.6493)
Cash Ratio$\times\Delta E_{KRW/\$}$	-2.5152	-2.5152
	(2.9334)	(4.2288)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.5675***	-0.5675**
	(0.1867)	(0.2356)
Export Share $\times\Delta E_{KRW/\$}$	7.8709***	7.8709***
	(0.6328)	(0.9242)

Continued Table 27

Dependent Variable:	Export Quantity	
	(1)	(2)
Import Share$\times\Delta E_{KRW/\$}\times$Size	0.3026***	0.3026***
	(0.0506)	(0.0670)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	0.0326	0.0326
	(0.0244)	(0.0278)
Leverage$\times\Delta E_{KRW/\$}\times$Size	0.0873	0.0873
	(0.0541)	(0.0736)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.1364***	-0.1364***
	(0.0264)	(0.0352)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.1908	0.1908
	(0.1624)	(0.2372)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0321***	0.0321**
	(0.0101)	(0.0130)
Export Share$\times\Delta E_{KRW/\$}\times$Size	-0.4464***	-0.4464***
	(0.0346)	(0.0509)
Import Share$\times$Size	0.0046	0.0046
	(0.0038)	(0.0057)
Sales Share$\times$Size	-0.0384***	-0.0384***
	(0.0016)	(0.0020)
Leverage$\times$Size	-0.0314***	-0.0314***
	(0.0039)	(0.0056)
ST Debt Ratio$\times$Size	0.0090***	0.0090***
	(0.0018)	(0.0028)
Cash Ratio$\times$Size	-0.0284**	-0.0284
	(0.0114)	(0.0189)
FC Cash Ratio$\times$Size	0.0032***	0.0032***
	(0.0009)	(0.0012)
Export Share$\times$Size	-0.0070**	-0.0070
	(0.0031)	(0.0046)
Adjusted R^2	0.0161	0.0161
Observations	1863541	1863541
Standard Errors	Robust	Clustered

Table 28: Panel Regression of Export Price Changes on FC Debt – Other Variables

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
FC Debt Ratio	0.0049	0.0049	0.0045	0.0045
	(0.0076)	(0.0101)	(0.0077)	(0.0102)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	0.4699***	0.4699***	0.3810***	0.3810***
	(0.0928)	(0.1229)	(0.0936)	(0.1259)
$\Delta E_{KRW/\$}$	-0.3729***	-0.3729***	-0.4769***	-0.4769***
	(0.1031)	(0.1205)	(0.1044)	(0.1404)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	-0.0277***	-0.0277***	-0.0215***	-0.0215***
	(0.0047)	(0.0066)	(0.0047)	(0.0067)
FC Debt Ratio $\times$Size	-0.0002	-0.0002	-0.0002	-0.0002
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Import Share	0.0775***	0.0775***	0.0862***	0.0862***
	(0.0120)	(0.0136)	(0.0121)	(0.0139)
Sales Share	-0.0029	-0.0029	-0.0089	-0.0089
	(0.0054)	(0.0059)	(0.0054)	(0.0060)
Size	0.0022***	0.0022***	0.0021***	0.0021***
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Leverage	0.0729***	0.0729***	0.0699***	0.0699***
	(0.0116)	(0.0152)	(0.0117)	(0.0153)
ST Debt Ratio	0.0402***	0.0402***	0.0421***	0.0421***
	(0.0059)	(0.0073)	(0.0059)	(0.0075)
Cash Ratio	0.0435	0.0435	0.0371	0.0371
	(0.0355)	(0.0463)	(0.0358)	(0.0468)
FC Cash Ratio	-0.0089**	-0.0089**	-0.0096***	-0.0096**
	(0.0035)	(0.0041)	(0.0036)	(0.0043)
Export Share	-0.0499***	-0.0499***	-0.0554***	-0.0554***
	(0.0096)	(0.0114)	(0.0097)	(0.0116)
Import Share$\times\Delta E_{KRW/\$}$	1.7729***	1.7729***	2.0008***	2.0008***
	(0.1545)	(0.1827)	(0.1563)	(0.1908)
Sales Share$\times\Delta E_{KRW/\$}$	0.2176***	0.2176**	0.1604**	0.1604*
	(0.0776)	(0.0897)	(0.0787)	(0.0954)
Size$\times\Delta E_{KRW/\$}$	0.0207***	0.0207***	0.0154***	0.0154**
	(0.0054)	(0.0064)	(0.0055)	(0.0066)
Leverage$\times\Delta E_{KRW/\$}$	2.0591***	2.0591***	2.1088***	2.1088***
	(0.1560)	(0.2496)	(0.1569)	(0.2534)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	0.5264***	0.5264***	0.6465***	0.6465***
	(0.0848)	(0.0999)	(0.0859)	(0.1017)
Cash Ratio$\times\Delta E_{KRW/\$}$	4.9655***	4.9655***	4.3664***	4.3664***
	(0.4958)	(0.6430)	(0.5020)	(0.6601)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.0859**	-0.0859*	-0.1011**	-0.1011**
	(0.0397)	(0.0460)	(0.0412)	(0.0480)
Export Share $\times\Delta E_{KRW/\$}$	-0.7020***	-0.7020***	-0.7998***	-0.7998***
	(0.1053)	(0.1213)	(0.1067)	(0.1274)

Continued Table 28

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
Import Share$\times\Delta E_{KRW/\$}\times$Size	-0.0965***	-0.0965***	-0.1085***	-0.1085***
	(0.0084)	(0.0101)	(0.0084)	(0.0105)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	-0.0121***	-0.0121**	-0.0101**	-0.0101**
	(0.0041)	(0.0047)	(0.0042)	(0.0049)
Leverage$\times\Delta E_{KRW/\$}\times$Size	-0.1267***	-0.1267***	-0.1295***	-0.1295***
	(0.0087)	(0.0144)	(0.0088)	(0.0146)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.0320***	-0.0320***	-0.0382***	-0.0382***
	(0.0044)	(0.0054)	(0.0045)	(0.0055)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.2869***	-0.2869***	-0.2547***	-0.2547***
	(0.0271)	(0.0359)	(0.0274)	(0.0368)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0050**	0.0050**	0.0057**	0.0057**
	(0.0022)	(0.0025)	(0.0022)	(0.0026)
Export Share$\times\Delta E_{KRW/\$}\times$Size	0.0428***	0.0428***	0.0464***	0.0464***
	(0.0057)	(0.0066)	(0.0057)	(0.0070)
Import Share$\times$Size	-0.0046***	-0.0046***	-0.0051***	-0.0051***
	(0.0006)	(0.0007)	(0.0007)	(0.0008)
Sales Share$\times$Size	0.0003	0.0003	0.0007**	0.0007**
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Leverage$\times$Size	-0.0045***	-0.0045***	-0.0044***	-0.0044***
	(0.0006)	(0.0009)	(0.0006)	(0.0009)
ST Debt Ratio$\times$Size	-0.0021***	-0.0021***	-0.0022***	-0.0022***
	(0.0003)	(0.0004)	(0.0003)	(0.0004)
Cash Ratio$\times$Size	-0.0036*	-0.0036	-0.0032	-0.0032
	(0.0019)	(0.0026)	(0.0020)	(0.0026)
FC Cash Ratio$\times$Size	0.0005***	0.0005**	0.0006***	0.0006**
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Export Share$\times$Size	0.0025***	0.0025***	0.0029***	0.0029***
	(0.0005)	(0.0006)	(0.0005)	(0.0006)
Adjusted R^2	0.0360	0.0360	0.0337	0.0337
Observations	1863541	1863541	1863541	1863541
Standard Errors	Robust	Clustered	Robust	Clustered

Table 29: Panel Regression of Export Quantity Changes on FC Debt – Currency Fixed Effects

Dependent Variable:	Export Quantity			
	(1)	(2)	(3)	(4)
FC Debt Ratio	-0.1468***	-0.1468**	-0.1475***	-0.1475**
	(0.0450)	(0.0674)	(0.0450)	(0.0674)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	-1.3015**	-1.3015*	-1.2963**	-1.2963*
	(0.5423)	(0.6816)	(0.5423)	(0.6815)
$\Delta E_{KRW/\$}$	-3.1501***	-3.1501***	-3.1494***	-3.1494***
	(0.6109)	(0.7851)	(0.6109)	(0.7848)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	0.0621**	0.0621*	0.0618**	0.0618*
	(0.0279)	(0.0360)	(0.0279)	(0.0360)
FC Debt Ratio $\times$Size	0.0065***	0.0065*	0.0065***	0.0065*
	(0.0023)	(0.0036)	(0.0023)	(0.0036)
Import Share	-0.0553	-0.0553	-0.0589	-0.0589
	(0.0690)	(0.1021)	(0.0690)	(0.1019)
Sales Share	0.2305***	0.2305***	0.2330***	0.2330***
	(0.0306)	(0.0381)	(0.0306)	(0.0382)
Size	-0.0021	-0.0021	-0.0022	-0.0022
	(0.0024)	(0.0039)	(0.0024)	(0.0039)
Leverage	0.3718***	0.3718***	0.3682***	0.3682***
	(0.0691)	(0.0982)	(0.0691)	(0.0981)
ST Debt Ratio	-0.1939***	-0.1939***	-0.1904***	-0.1904***
	(0.0330)	(0.0522)	(0.0330)	(0.0523)
Cash Ratio	0.4783**	0.4783	0.4668**	0.4668
	(0.2031)	(0.3369)	(0.2031)	(0.3369)
FC Cash Ratio	-0.0515***	-0.0515**	-0.0514***	-0.0514**
	(0.0153)	(0.0211)	(0.0153)	(0.0210)
Export Share	0.0102	0.0102	0.0125	0.0125
	(0.0551)	(0.0827)	(0.0551)	(0.0825)
Import Share$\times\Delta E_{KRW/\$}$	-5.0024***	-5.0024***	-4.9930***	-4.9930***
	(0.9186)	(1.2084)	(0.9186)	(1.2081)
Sales Share$\times\Delta E_{KRW/\$}$	-0.1802	-0.1802	-0.1814	-0.1814
	(0.4533)	(0.5203)	(0.4533)	(0.5202)
Size$\times\Delta E_{KRW/\$}$	0.1546***	0.1546***	0.1546***	0.1546***
	(0.0327)	(0.0425)	(0.0327)	(0.0425)
Leverage$\times\Delta E_{KRW/\$}$	-1.1937	-1.1937	-1.1868	-1.1868
	(0.9359)	(1.1981)	(0.9357)	(1.1971)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	2.7672***	2.7672***	2.7647***	2.7647***
	(0.4937)	(0.6540)	(0.4937)	(0.6541)
Cash Ratio$\times\Delta E_{KRW/\$}$	-2.1967	-2.1967	-2.2288	-2.2288
	(2.8991)	(4.1293)	(2.8991)	(4.1283)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.5161***	-0.5161**	-0.5150***	-0.5150**
	(0.1822)	(0.2359)	(0.1822)	(0.2353)
Export Share $\times\Delta E_{KRW/\$}$	7.6167***	7.6167***	7.6180***	7.6180***
	(0.6289)	(0.9407)	(0.6289)	(0.9410)

Continued Table 29

Dependent Variable:	Export Quantity			
	(1)	(2)	(3)	(4)
Import Share$\times\Delta E_{KRW/\$}\times$Size	0.2860***	0.2860***	0.2855***	0.2855***
	(0.0502)	(0.0667)	(0.0502)	(0.0667)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	0.0169	0.0169	0.0170	0.0170
	(0.0244)	(0.0281)	(0.0244)	(0.0281)
Leverage$\times\Delta E_{KRW/\$}\times$Size	0.0874*	0.0874	0.0870*	0.0870
	(0.0528)	(0.0688)	(0.0528)	(0.0688)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.1487***	-0.1487***	-0.1486***	-0.1486***
	(0.0262)	(0.0355)	(0.0262)	(0.0355)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.1671	0.1671	0.1688	0.1688
	(0.1606)	(0.2316)	(0.1606)	(0.2315)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0292***	0.0292**	0.0291***	0.0291**
	(0.0099)	(0.0130)	(0.0099)	(0.0130)
Export Share$\times\Delta E_{KRW/\$}\times$Size	-0.4300***	-0.4300***	-0.4300***	-0.4300***
	(0.0344)	(0.0520)	(0.0344)	(0.0520)
Import Share$\times$Size	0.0048	0.0048	0.0050	0.0050
	(0.0038)	(0.0057)	(0.0038)	(0.0057)
Sales Share$\times$Size	-0.0380***	-0.0380***	-0.0381***	-0.0381***
	(0.0016)	(0.0020)	(0.0016)	(0.0020)
Leverage$\times$Size	-0.0258***	-0.0258***	-0.0256***	-0.0256***
	(0.0039)	(0.0056)	(0.0039)	(0.0056)
ST Debt Ratio$\times$Size	0.0083***	0.0083***	0.0081***	0.0081***
	(0.0017)	(0.0029)	(0.0017)	(0.0029)
Cash Ratio$\times$Size	-0.0219*	-0.0219	-0.0213*	-0.0213
	(0.0113)	(0.0189)	(0.0113)	(0.0189)
FC Cash Ratio$\times$Size	0.0029***	0.0029**	0.0029***	0.0029**
	(0.0009)	(0.0012)	(0.0009)	(0.0012)
Export Share$\times$Size	-0.0069**	-0.0069	-0.0070**	-0.0070
	(0.0031)	(0.0046)	(0.0031)	(0.0046)
Adjusted R^2	0.0161	0.0161	0.0161	0.0161
Currency FE	No	No	Yes	Yes
Observations	1905754	1905754	1905754	1905754

Table 30: Panel Regression of Export Price Changes on FC Debt – Currency Fixed Effects

Dependent Variable:	Export Price in Destination Currency			
	(1)	(2)	(3)	(4)
FC Debt Ratio	0.0084	0.0084	0.0079	0.0079
	(0.0075)	(0.0098)	(0.0076)	(0.0099)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	0.5082***	0.5082***	0.4137***	0.4137***
	(0.0917)	(0.1194)	(0.0927)	(0.1227)
$\Delta E_{KRW/\$}$	-0.3712***	-0.3712***	-0.4556***	-0.4556***
	(0.1018)	(0.1220)	(0.1032)	(0.1388)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	-0.0295***	-0.0295***	-0.0229***	-0.0229***
	(0.0047)	(0.0064)	(0.0047)	(0.0065)
FC Debt Ratio $\times$Size	-0.0004	-0.0004	-0.0004	-0.0004
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Import Share	0.0854***	0.0854***	0.0927***	0.0927***
	(0.0118)	(0.0133)	(0.0119)	(0.0136)
Sales Share	-0.0049	-0.0049	-0.0106*	-0.0106*
	(0.0054)	(0.0058)	(0.0054)	(0.0059)
Size	0.0022***	0.0022***	0.0020***	0.0020***
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Leverage	0.0784***	0.0784***	0.0747***	0.0747***
	(0.0115)	(0.0148)	(0.0116)	(0.0149)
ST Debt Ratio	0.0323***	0.0323***	0.0341***	0.0341***
	(0.0058)	(0.0076)	(0.0058)	(0.0078)
Cash Ratio	0.0615*	0.0615	0.0550	0.0550
	(0.0350)	(0.0463)	(0.0353)	(0.0468)
FC Cash Ratio	-0.0081**	-0.0081**	-0.0090**	-0.0090**
	(0.0035)	(0.0041)	(0.0036)	(0.0043)
Export Share	-0.0468***	-0.0468***	-0.0514***	-0.0514***
	(0.0095)	(0.0116)	(0.0096)	(0.0118)
Import Share$\times\Delta E_{KRW/\$}$	1.8603***	1.8603***	2.1008***	2.1008***
	(0.1525)	(0.1796)	(0.1544)	(0.1891)
Sales Share$\times\Delta E_{KRW/\$}$	0.2037***	0.2037**	0.1403*	0.1403
	(0.0779)	(0.0894)	(0.0789)	(0.0952)
Size$\times\Delta E_{KRW/\$}$	0.0211***	0.0211***	0.0146***	0.0146**
	(0.0054)	(0.0065)	(0.0054)	(0.0066)
Leverage$\times\Delta E_{KRW/\$}$	2.0049***	2.0049***	2.0104***	2.0104***
	(0.1533)	(0.2439)	(0.1550)	(0.2491)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	0.5447***	0.5447***	0.6597***	0.6597***
	(0.0837)	(0.1037)	(0.0849)	(0.1057)
Cash Ratio$\times\Delta E_{KRW/\$}$	4.7489***	4.7489***	4.0736***	4.0736***
	(0.4908)	(0.6554)	(0.4962)	(0.6752)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.0793**	-0.0793*	-0.0960**	-0.0960**
	(0.0390)	(0.0458)	(0.0406)	(0.0480)
Export Share $\times\Delta E_{KRW/\$}$	-0.7208***	-0.7208***	-0.8328***	-0.8328***
	(0.1042)	(0.1222)	(0.1054)	(0.1289)

Continued Table 30

Dependent Variable:	Export Price in Destination Currency			
	(1)	(2)	(3)	(4)
Import Share×$\Delta E_{KRW/\$}$×Size	-0.1004***	-0.1004***	-0.1130***	-0.1130***
	(0.0082)	(0.0100)	(0.0083)	(0.0105)
Sales Share×$\Delta E_{KRW/\$}$×Size	-0.0115***	-0.0115**	-0.0091**	-0.0091*
	(0.0041)	(0.0047)	(0.0042)	(0.0049)
Leverage×$\Delta E_{KRW/\$}$×Size	-0.1238***	-0.1238***	-0.1240***	-0.1240***
	(0.0086)	(0.0141)	(0.0087)	(0.0144)
ST Debt Ratio×$\Delta E_{KRW/\$}$×Size	-0.0333***	-0.0333***	-0.0391***	-0.0391***
	(0.0044)	(0.0056)	(0.0044)	(0.0057)
Cash Ratio×$\Delta E_{KRW/\$}$×Size	-0.2748***	-0.2748***	-0.2385***	-0.2385***
	(0.0268)	(0.0365)	(0.0271)	(0.0376)
FC Cash Ratio×$\Delta E_{KRW/\$}$×Size	0.0046**	0.0046*	0.0054**	0.0054**
	(0.0021)	(0.0025)	(0.0022)	(0.0026)
Export Share×$\Delta E_{KRW/\$}$×Size	0.0437***	0.0437***	0.0479***	0.0479***
	(0.0056)	(0.0067)	(0.0057)	(0.0071)
Import Share×Size	-0.0050***	-0.0050***	-0.0055***	-0.0055***
	(0.0006)	(0.0007)	(0.0006)	(0.0007)
Sales Share×Size	0.0003	0.0003	0.0007***	0.0007**
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Leverage×Size	-0.0049***	-0.0049***	-0.0046***	-0.0046***
	(0.0006)	(0.0008)	(0.0006)	(0.0008)
ST Debt Ratio×Size	-0.0017***	-0.0017***	-0.0018***	-0.0018***
	(0.0003)	(0.0004)	(0.0003)	(0.0004)
Cash Ratio×Size	-0.0046**	-0.0046*	-0.0042**	-0.0042
	(0.0019)	(0.0026)	(0.0019)	(0.0026)
FC Cash Ratio×Size	0.0005**	0.0005**	0.0005***	0.0005**
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Export Share×Size	0.0023***	0.0023***	0.0027***	0.0027***
	(0.0005)	(0.0006)	(0.0005)	(0.0007)
Adjusted R^2	0.0360	0.0360	0.0336	0.0336
Currency FE	No	No	Yes	Yes
Observations	1905754	1905754	1905754	1905754

Table 31: Panel Regression of Export Price Changes in USD on FC Debt – Currency Fixed Effects

Dependent Variable:	Export Price in USD			
	(1)	(2)	(3)	(4)
FC Debt Ratio	0.0084	0.0084	0.0079	0.0079
	(0.0075)	(0.0098)	(0.0076)	(0.0099)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	0.5079***	0.5079***	0.4134***	0.4134***
	(0.0917)	(0.1193)	(0.0927)	(0.1226)
$\Delta E_{KRW/\$}$	-0.3704***	-0.3704***	-0.4546***	-0.4546***
	(0.1018)	(0.1220)	(0.1032)	(0.1388)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	-0.0295***	-0.0295***	-0.0229***	-0.0229***
	(0.0047)	(0.0064)	(0.0047)	(0.0065)
FC Debt Ratio $\times$Size	-0.0004	-0.0004	-0.0004	-0.0004
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Import Share	0.0856***	0.0856***	0.0930***	0.0930***
	(0.0118)	(0.0133)	(0.0119)	(0.0136)
Sales Share	-0.0049	-0.0049	-0.0105*	-0.0105*
	(0.0054)	(0.0058)	(0.0054)	(0.0059)
Size	0.0022***	0.0022***	0.0020***	0.0020***
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Leverage	0.0787***	0.0787***	0.0751***	0.0751***
	(0.0115)	(0.0149)	(0.0116)	(0.0149)
ST Debt Ratio	0.0324***	0.0324***	0.0343***	0.0343***
	(0.0058)	(0.0076)	(0.0058)	(0.0078)
Cash Ratio	0.0615*	0.0615	0.0549	0.0549
	(0.0351)	(0.0463)	(0.0353)	(0.0469)
FC Cash Ratio	-0.0081**	-0.0081**	-0.0089**	-0.0089**
	(0.0035)	(0.0041)	(0.0036)	(0.0043)
Export Share	-0.0460***	-0.0460***	-0.0504***	-0.0504***
	(0.0095)	(0.0116)	(0.0096)	(0.0118)
Import Share$\times\Delta E_{KRW/\$}$	1.8623***	1.8623***	2.1034***	2.1034***
	(0.1525)	(0.1795)	(0.1544)	(0.1891)
Sales Share$\times\Delta E_{KRW/\$}$	0.2032***	0.2032**	0.1397*	0.1397
	(0.0779)	(0.0894)	(0.0789)	(0.0952)
Size$\times\Delta E_{KRW/\$}$	0.0211***	0.0211***	0.0146***	0.0146**
	(0.0054)	(0.0065)	(0.0054)	(0.0066)
Leverage$\times\Delta E_{KRW/\$}$	2.0056***	2.0056***	2.0113***	2.0113***
	(0.1532)	(0.2439)	(0.1550)	(0.2491)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	0.5430***	0.5430***	0.6577***	0.6577***
	(0.0837)	(0.1036)	(0.0849)	(0.1055)
Cash Ratio$\times\Delta E_{KRW/\$}$	4.7534***	4.7534***	4.0789***	4.0789***
	(0.4908)	(0.6558)	(0.4962)	(0.6755)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.0786**	-0.0786*	-0.0951**	-0.0951**
	(0.0389)	(0.0457)	(0.0405)	(0.0480)
Export Share $\times\Delta E_{KRW/\$}$	-0.7210***	-0.7210***	-0.8330***	-0.8330***
	(0.1042)	(0.1223)	(0.1054)	(0.1290)

Continued Table 31

Dependent Variable:	Export Price in USD			
	(1)	(2)	(3)	(4)
Import Share×$\Delta E_{KRW/\$}$×Size	-0.1006***	-0.1006***	-0.1132***	-0.1132***
	(0.0082)	(0.0100)	(0.0083)	(0.0105)
Sales Share×$\Delta E_{KRW/\$}$×Size	-0.0114***	-0.0114**	-0.0091**	-0.0091*
	(0.0041)	(0.0047)	(0.0042)	(0.0049)
Leverage×$\Delta E_{KRW/\$}$×Size	-0.1238***	-0.1238***	-0.1240***	-0.1240***
	(0.0086)	(0.0141)	(0.0087)	(0.0144)
ST Debt Ratio×$\Delta E_{KRW/\$}$×Size	-0.0332***	-0.0332***	-0.0390***	-0.0390***
	(0.0044)	(0.0056)	(0.0044)	(0.0057)
Cash Ratio×$\Delta E_{KRW/\$}$×Size	-0.2751***	-0.2751***	-0.2388***	-0.2388***
	(0.0268)	(0.0366)	(0.0271)	(0.0376)
FC Cash Ratio×$\Delta E_{KRW/\$}$×Size	0.0045**	0.0045*	0.0054**	0.0054**
	(0.0021)	(0.0025)	(0.0022)	(0.0026)
Export Share×$\Delta E_{KRW/\$}$×Size	0.0437***	0.0437***	0.0480***	0.0480***
	(0.0056)	(0.0067)	(0.0057)	(0.0071)
Import Share×Size	-0.0050***	-0.0050***	-0.0055***	-0.0055***
	(0.0006)	(0.0007)	(0.0006)	(0.0008)
Sales Share×Size	0.0003	0.0003	0.0007***	0.0007**
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Leverage×Size	-0.0049***	-0.0049***	-0.0047***	-0.0047***
	(0.0006)	(0.0008)	(0.0006)	(0.0009)
ST Debt Ratio×Size	-0.0017***	-0.0017***	-0.0018***	-0.0018***
	(0.0003)	(0.0004)	(0.0003)	(0.0004)
Cash Ratio×Size	-0.0046**	-0.0046*	-0.0042**	-0.0042
	(0.0019)	(0.0026)	(0.0019)	(0.0026)
FC Cash Ratio×Size	0.0005**	0.0005**	0.0005***	0.0005**
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Export Share×Size	0.0023***	0.0023***	0.0026***	0.0026***
	(0.0005)	(0.0006)	(0.0005)	(0.0007)
Adjusted R^2	0.0360	0.0360	0.0336	0.0336
Currency FE	No	No	Yes	Yes
Observations	1905754	1905754	1905754	1905754

Table 32: Panel Regression of Export Quantity Changes on FC Debt – FC Debt Ratio × Aggregate

Dependent Variable:	Export Quantity	
	(1)	(2)
FC Debt Ratio	-0.4800***	-0.4800***
	(0.0726)	(0.0975)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	-1.3083**	-1.3083*
	(0.5474)	(0.6884)
$\Delta E_{KRW/\$}$	-3.0056***	-3.0056***
	(0.6194)	(0.8063)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	0.0653**	0.0653*
	(0.0281)	(0.0363)
FC Debt Ratio ×Size	0.0053**	0.0053
	(0.0024)	(0.0035)
Import Share	-0.0264	-0.0264
	(0.0705)	(0.1021)
Sales Share	0.2557***	0.2557***
	(0.0306)	(0.0379)
Size	-0.0033	-0.0033
	(0.0024)	(0.0040)
Leverage	0.4198***	0.4198***
	(0.0693)	(0.0986)
ST Debt Ratio	-0.2274***	-0.2274***
	(0.0335)	(0.0511)
Cash Ratio	0.3800*	0.3800
	(0.2068)	(0.3326)
FC Cash Ratio	-0.0509***	-0.0509**
	(0.0152)	(0.0204)
Export Share	-0.1099*	-0.1099
	(0.0563)	(0.0812)
Import Share$\times\Delta E_{KRW/\$}$	-5.3503***	-5.3503***
	(0.9357)	(1.2132)
Sales Share$\times\Delta E_{KRW/\$}$	-0.5037	-0.5037
	(0.4530)	(0.5129)
Size$\times\Delta E_{KRW/\$}$	0.1438***	0.1438***
	(0.0331)	(0.0438)
Leverage$\times\Delta E_{KRW/\$}$	-1.3129	-1.3129
	(0.9661)	(1.2831)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	2.2707***	2.2707***
	(0.4995)	(0.6420)
Cash Ratio$\times\Delta E_{KRW/\$}$	-2.8072	-2.8072
	(2.9446)	(4.2290)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.4999***	-0.4999**
	(0.1805)	(0.2293)
Export Share $\times\Delta E_{KRW/\$}$	8.3468***	8.3468***
	(0.6368)	(0.9325)

Continued Table 32

Dependent Variable:	Export Quantity	
	(1)	(2)
Import Share$\times\Delta E_{KRW/\$}\times$Size	0.3118***	0.3118***
	(0.0512)	(0.0671)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	0.0346	0.0346
	(0.0244)	(0.0277)
Leverage$\times\Delta E_{KRW/\$}\times$Size	0.0935*	0.0935
	(0.0544)	(0.0736)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.1195***	-0.1195***
	(0.0265)	(0.0348)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.2118	0.2118
	(0.1630)	(0.2368)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0284***	0.0284**
	(0.0098)	(0.0127)
Export Share$\times\Delta E_{KRW/\$}\times$Size	-0.4731***	-0.4731***
	(0.0348)	(0.0514)
Import Share$\times$Size	0.0029	0.0029
	(0.0038)	(0.0057)
Sales Share$\times$Size	-0.0388***	-0.0388***
	(0.0016)	(0.0020)
Leverage$\times$Size	-0.0285***	-0.0285***
	(0.0039)	(0.0056)
ST Debt Ratio$\times$Size	0.0100***	0.0100***
	(0.0018)	(0.0028)
Cash Ratio$\times$Size	-0.0160	-0.0160
	(0.0115)	(0.0187)
FC Cash Ratio$\times$Size	0.0028***	0.0028**
	(0.0009)	(0.0012)
Export Share$\times$Size	-0.0004	-0.0004
	(0.0031)	(0.0045)
FC Debt Ratio $\times\Delta RGDP_{World}$	0.8909**	0.8909*
	(0.3586)	(0.4742)
FC Debt Ratio $\times\Delta RGDP_{KOR}$	-0.8569*	-0.8569
	(0.5006)	(0.6619)
FC Debt Ratio $\times ln(VIX)$	0.1141***	0.1141***
	(0.0191)	(0.0269)
$\Delta RGDP_{World}$	-1.3445***	-1.3445***
	(0.2486)	(0.3122)
$\Delta RGDP_{KOR}$	1.6527***	1.6527***
	(0.3735)	(0.4787)
Adjusted R^2	0.0163	0.0163
Observations	1843620	1843620

Table 33: Panel Regression of Export Price Changes on FC Debt – FC Debt Ratio × Aggregate

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
FC Debt Ratio	0.0282**	0.0282*	0.0221*	0.0221
	(0.0119)	(0.0166)	(0.0121)	(0.0172)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	0.4453***	0.4453***	0.3829***	0.3829***
	(0.0932)	(0.1252)	(0.0940)	(0.1268)
$\Delta E_{KRW/\$}$	-0.3644***	-0.3644***	-0.5226***	-0.5226***
	(0.1033)	(0.1200)	(0.1049)	(0.1375)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	-0.0251***	-0.0251***	-0.0205***	-0.0205***
	(0.0047)	(0.0067)	(0.0048)	(0.0068)
FC Debt Ratio ×Size	-0.0001	-0.0001	-0.0000	-0.0000
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Import Share	0.0786***	0.0786***	0.0864***	0.0864***
	(0.0121)	(0.0139)	(0.0122)	(0.0142)
Sales Share	-0.0031	-0.0031	-0.0094*	-0.0094
	(0.0054)	(0.0059)	(0.0054)	(0.0060)
Size	0.0022***	0.0022***	0.0021***	0.0021***
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Leverage	0.0730***	0.0730***	0.0692***	0.0692***
	(0.0117)	(0.0156)	(0.0117)	(0.0157)
ST Debt Ratio	0.0419***	0.0419***	0.0421***	0.0421***
	(0.0059)	(0.0074)	(0.0060)	(0.0075)
Cash Ratio	0.0396	0.0396	0.0439	0.0439
	(0.0358)	(0.0465)	(0.0361)	(0.0466)
FC Cash Ratio	-0.0104***	-0.0104**	-0.0106***	-0.0106**
	(0.0037)	(0.0043)	(0.0037)	(0.0043)
Export Share	-0.0489***	-0.0489***	-0.0543***	-0.0543***
	(0.0097)	(0.0114)	(0.0098)	(0.0115)
Import Share$\times\Delta E_{KRW/\$}$	1.7551***	1.7551***	1.8923***	1.8923***
	(0.1554)	(0.1875)	(0.1571)	(0.1930)
Sales Share$\times\Delta E_{KRW/\$}$	0.2082***	0.2082**	0.1539*	0.1539
	(0.0777)	(0.0889)	(0.0788)	(0.0944)
Size$\times\Delta E_{KRW/\$}$	0.0209***	0.0209***	0.0165***	0.0165**
	(0.0054)	(0.0065)	(0.0055)	(0.0066)
Leverage$\times\Delta E_{KRW/\$}$	2.0947***	2.0947***	2.1776***	2.1776***
	(0.1567)	(0.2499)	(0.1580)	(0.2541)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	0.5261***	0.5261***	0.6541***	0.6541***
	(0.0849)	(0.0998)	(0.0861)	(0.1023)
Cash Ratio$\times\Delta E_{KRW/\$}$	5.1721***	5.1721***	4.4936***	4.4936***
	(0.4979)	(0.6425)	(0.5043)	(0.6552)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.1049**	-0.1049**	-0.1053**	-0.1053**
	(0.0415)	(0.0478)	(0.0413)	(0.0482)
Export Share $\times\Delta E_{KRW/\$}$	-0.7144***	-0.7144***	-0.8198***	-0.8198***
	(0.1058)	(0.1228)	(0.1073)	(0.1273)

Continued Table 33

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
Import Share$\times\Delta E_{KRW/\$}\times$Size	-0.0963***	-0.0963***	-0.1029***	-0.1029***
	(0.0084)	(0.0104)	(0.0085)	(0.0107)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	-0.0115***	-0.0115**	-0.0095**	-0.0095*
	(0.0041)	(0.0047)	(0.0042)	(0.0049)
Leverage$\times\Delta E_{KRW/\$}\times$Size	-0.1287***	-0.1287***	-0.1334***	-0.1334***
	(0.0087)	(0.0144)	(0.0088)	(0.0147)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.0322***	-0.0322***	-0.0383***	-0.0383***
	(0.0044)	(0.0054)	(0.0045)	(0.0055)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.2989***	-0.2989***	-0.2613***	-0.2613***
	(0.0272)	(0.0359)	(0.0275)	(0.0365)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0060***	0.0060**	0.0061***	0.0061**
	(0.0023)	(0.0026)	(0.0023)	(0.0027)
Export Share$\times\Delta E_{KRW/\$}\times$Size	0.0434***	0.0434***	0.0480***	0.0480***
	(0.0057)	(0.0067)	(0.0058)	(0.0069)
Import Share$\times$Size	-0.0046***	-0.0046***	-0.0051***	-0.0051***
	(0.0007)	(0.0008)	(0.0007)	(0.0008)
Sales Share$\times$Size	0.0003	0.0003	0.0007**	0.0007**
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Leverage$\times$Size	-0.0045***	-0.0045***	-0.0043***	-0.0043***
	(0.0006)	(0.0009)	(0.0007)	(0.0009)
ST Debt Ratio$\times$Size	-0.0022***	-0.0022***	-0.0022***	-0.0022***
	(0.0003)	(0.0004)	(0.0003)	(0.0004)
Cash Ratio$\times$Size	-0.0034*	-0.0034	-0.0035*	-0.0035
	(0.0020)	(0.0026)	(0.0020)	(0.0026)
FC Cash Ratio$\times$Size	0.0006***	0.0006**	0.0006***	0.0006**
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Export Share$\times$Size	0.0025***	0.0025***	0.0028***	0.0028***
	(0.0005)	(0.0006)	(0.0005)	(0.0006)
FC Debt Ratio$\times\Delta RGDP_{World}$	-0.1028*	-0.1028	-0.0651	-0.0651
	(0.0563)	(0.0668)	(0.0577)	(0.0702)
FC Debt Ratio$\times\Delta RGDP_{KOR}$	0.3089***	0.3089***	0.3047***	0.3047***
	(0.0796)	(0.0930)	(0.0812)	(0.0972)
FC Debt Ratio$\times ln(VIX)$	-0.0109***	-0.0109***	-0.0102***	-0.0102**
	(0.0032)	(0.0039)	(0.0032)	(0.0041)
$\Delta RGDP_{World}$	0.1671***	0.1671***	-0.9725***	-0.9725***
	(0.0382)	(0.0623)	(0.0400)	(0.1061)
$\Delta RGDP_{KOR}$	-0.0377	-0.0377	1.4378***	1.4378***
	(0.0573)	(0.0937)	(0.0601)	(0.1721)
Adjusted R^2	0.0371	0.0371	0.0346	0.0346
Observations	1843620	1843620	1843620	1843620

Table 34: Panel Regression of Export Quantity Changes on FC Debt — FC Debt to Total Assets

Dependent Variable:	Export Quantity	
	(1)	(2)
FC Debt Ratio	-0.6356***	-0.6356**
	(0.2047)	(0.2939)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	-10.0654***	-10.0654***
	(2.4624)	(3.2561)
$\Delta E_{KRW/\$}$	-2.4107***	-2.4107***
	(0.5536)	(0.7007)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	0.5286***	0.5286***
	(0.1323)	(0.1791)
FC Debt Ratio $\times$Size	0.0299***	0.0299*
	(0.0110)	(0.0162)
Import Share	-0.0604	-0.0604
	(0.0681)	(0.1019)
Sales Share	0.2581***	0.2581***
	(0.0300)	(0.0374)
Size	0.0006	0.0006
	(0.0022)	(0.0036)
Leverage	0.4768***	0.4768***
	(0.0691)	(0.0957)
ST Debt Ratio	-0.1964***	-0.1964***
	(0.0317)	(0.0468)
Cash Ratio	0.5810***	0.5810*
	(0.2009)	(0.3245)
FC Cash Ratio	-0.0665***	-0.0665***
	(0.0163)	(0.0214)
Export Share	0.0137	0.0137
	(0.0544)	(0.0807)
Import Share$\times\Delta E_{KRW/\$}$	-6.0003***	-6.0003***
	(0.8776)	(1.1112)
Sales Share$\times\Delta E_{KRW/\$}$	-0.4595	-0.4595
	(0.4341)	(0.4928)
Size$\times\Delta E_{KRW/\$}$	0.1151***	0.1151***
	(0.0291)	(0.0371)
Leverage$\times\Delta E_{KRW/\$}$	-0.7639	-0.7639
	(0.9899)	(1.2696)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	2.4814***	2.4814***
	(0.4493)	(0.5665)
Cash Ratio$\times\Delta E_{KRW/\$}$	-3.5668	-3.5668
	(2.8712)	(4.0340)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.6791***	-0.6791***
	(0.1935)	(0.2427)
Export Share $\times\Delta E_{KRW/\$}$	7.1932***	7.1932***
	(0.6202)	(0.8950)

Continued Table 34

Dependent Variable:	Export Quantity	
	(1)	(2)
Import Share$\times\Delta E_{KRW/\$}\times$Size	0.3449***	0.3449***
	(0.0477)	(0.0608)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	0.0331	0.0331
	(0.0232)	(0.0264)
Leverage$\times\Delta E_{KRW/\$}\times$Size	0.0600	0.0600
	(0.0558)	(0.0728)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.1325***	-0.1325***
	(0.0234)	(0.0299)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.2383	0.2383
	(0.1586)	(0.2254)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0383***	0.0383***
	(0.0105)	(0.0134)
Export Share$\times\Delta E_{KRW/\$}\times$Size	-0.4068***	-0.4068***
	(0.0338)	(0.0491)
Import Share$\times$Size	0.0050	0.0050
	(0.0037)	(0.0057)
Sales Share$\times$Size	-0.0388***	-0.0388***
	(0.0016)	(0.0020)
Leverage$\times$Size	-0.0315***	-0.0315***
	(0.0039)	(0.0055)
ST Debt Ratio$\times$Size	0.0083***	0.0083***
	(0.0017)	(0.0025)
Cash Ratio$\times$Size	-0.0278**	-0.0278
	(0.0111)	(0.0182)
FC Cash Ratio$\times$Size	0.0037***	0.0037***
	(0.0009)	(0.0012)
Export Share$\times$Size	-0.0073**	-0.0073
	(0.0030)	(0.0045)
Adjusted R^2	0.0161	0.0161
Observations	1890914	1890914

Table 35: Panel Regression of Export Price Changes on FC Debt — FC Debt to Total Assets

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
FC Debt Ratio	-0.0368	-0.0368	-0.0420	-0.0420
	(0.0348)	(0.0452)	(0.0350)	(0.0463)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	5.0007***	5.0007***	4.7136***	4.7136***
	(0.4284)	(0.6295)	(0.4329)	(0.6384)
$\Delta E_{KRW/\$}$	0.2107**	0.2107*	0.0520	0.0520
	(0.0919)	(0.1195)	(0.0932)	(0.1434)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	-0.2897***	-0.2897***	-0.2680***	-0.2680***
	(0.0227)	(0.0355)	(0.0230)	(0.0359)
FC Debt Ratio $\times$Size	0.0025	0.0025	0.0027	0.0027
	(0.0018)	(0.0024)	(0.0018)	(0.0025)
Import Share	0.0332***	0.0332**	0.0392***	0.0392***
	(0.0118)	(0.0133)	(0.0119)	(0.0136)
Sales Share	-0.0022	-0.0022	-0.0079	-0.0079
	(0.0053)	(0.0058)	(0.0053)	(0.0059)
Size	0.0023***	0.0023***	0.0022***	0.0022***
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Leverage	0.0800***	0.0800***	0.0791***	0.0791***
	(0.0115)	(0.0149)	(0.0116)	(0.0150)
ST Debt Ratio	0.0444***	0.0444***	0.0469***	0.0469***
	(0.0056)	(0.0072)	(0.0057)	(0.0073)
Cash Ratio	0.0479	0.0479	0.0463	0.0463
	(0.0348)	(0.0447)	(0.0350)	(0.0452)
FC Cash Ratio	-0.0134***	-0.0134***	-0.0144***	-0.0144***
	(0.0038)	(0.0043)	(0.0039)	(0.0045)
Export Share	-0.0257***	-0.0257**	-0.0307***	-0.0307***
	(0.0094)	(0.0111)	(0.0094)	(0.0114)
Import Share$\times\Delta E_{KRW/\$}$	1.6773***	1.6773***	1.8737***	1.8737***
	(0.1471)	(0.1950)	(0.1487)	(0.2002)
Sales Share$\times\Delta E_{KRW/\$}$	0.2023***	0.2023**	0.1410*	0.1410
	(0.0749)	(0.0872)	(0.0759)	(0.0929)
Size$\times\Delta E_{KRW/\$}$	-0.0122**	-0.0122**	-0.0142***	-0.0142**
	(0.0048)	(0.0062)	(0.0048)	(0.0065)
Leverage$\times\Delta E_{KRW/\$}$	0.9409***	0.9409***	1.1126***	1.1126***
	(0.1550)	(0.1925)	(0.1564)	(0.1997)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	-0.0278	-0.0278	0.1323*	0.1323
	(0.0766)	(0.0888)	(0.0777)	(0.0909)
Cash Ratio$\times\Delta E_{KRW/\$}$	4.9677***	4.9677***	4.4337***	4.4337***
	(0.4855)	(0.5989)	(0.4917)	(0.6198)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.1360***	-0.1360***	-0.1545***	-0.1545***
	(0.0426)	(0.0482)	(0.0446)	(0.0509)
Export Share $\times\Delta E_{KRW/\$}$	-0.7529***	-0.7529***	-0.8684***	-0.8684***
	(0.1033)	(0.1230)	(0.1046)	(0.1286)

Continued Table 35

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
Import Share$\times\Delta E_{KRW/\$}\times$Size	-0.0906***	-0.0906***	-0.1007***	-0.1007***
	(0.0079)	(0.0109)	(0.0080)	(0.0111)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	-0.0109***	-0.0109**	-0.0086**	-0.0086*
	(0.0039)	(0.0045)	(0.0040)	(0.0047)
Leverage$\times\Delta E_{KRW/\$}\times$Size	-0.0605***	-0.0605***	-0.0710***	-0.0710***
	(0.0087)	(0.0110)	(0.0088)	(0.0114)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.0013	-0.0013	-0.0096**	-0.0096**
	(0.0039)	(0.0046)	(0.0040)	(0.0048)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.2870***	-0.2870***	-0.2585***	-0.2585***
	(0.0265)	(0.0334)	(0.0268)	(0.0344)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0078***	0.0078***	0.0087***	0.0087***
	(0.0023)	(0.0027)	(0.0024)	(0.0028)
Export Share$\times\Delta E_{KRW/\$}\times$Size	0.0458***	0.0458***	0.0504***	0.0504***
	(0.0055)	(0.0067)	(0.0056)	(0.0070)
Import Share$\times$Size	-0.0020***	-0.0020***	-0.0024***	-0.0024***
	(0.0006)	(0.0007)	(0.0006)	(0.0007)
Sales Share$\times$Size	0.0002	0.0002	0.0006**	0.0006**
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Leverage$\times$Size	-0.0050***	-0.0050***	-0.0049***	-0.0049***
	(0.0006)	(0.0008)	(0.0006)	(0.0008)
ST Debt Ratio$\times$Size	-0.0024***	-0.0024***	-0.0025***	-0.0025***
	(0.0003)	(0.0004)	(0.0003)	(0.0004)
Cash Ratio$\times$Size	-0.0038**	-0.0038	-0.0037*	-0.0037
	(0.0019)	(0.0025)	(0.0019)	(0.0025)
FC Cash Ratio$\times$Size	0.0008***	0.0008***	0.0008***	0.0008***
	(0.0002)	(0.0002)	(0.0002)	(0.0003)
Export Share$\times$Size	0.0011**	0.0011*	0.0014***	0.0014**
	(0.0005)	(0.0006)	(0.0005)	(0.0006)
Adjusted R^2	0.0365	0.0365	0.0346	0.0346
Observations	1890914	1890914	1890914	1890914

Table 36: Panel Regression of Export Quantity Changes on FC Debt — Market Share × FC Debt

Dependent Variable:	Export Quantity	
	(1)	(2)
FC Debt Ratio	-0.1668***	-0.1668**
	(0.0453)	(0.0666)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	-1.3620**	-1.3620**
	(0.5455)	(0.6819)
$\Delta E_{KRW/\$}$	-2.9835***	-2.9835***
	(0.6188)	(0.8144)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	0.0667**	0.0667*
	(0.0280)	(0.0360)
FC Debt Ratio ×Size	0.0075***	0.0075**
	(0.0023)	(0.0036)
Import Share	-0.0514	-0.0514
	(0.0695)	(0.1029)
Sales Share	0.2500***	0.2500***
	(0.0307)	(0.0382)
Size	-0.0002	-0.0002
	(0.0024)	(0.0040)
Leverage	0.4700***	0.4700***
	(0.0690)	(0.0977)
ST Debt Ratio	-0.2113***	-0.2113***
	(0.0334)	(0.0513)
Cash Ratio	0.5946***	0.5946*
	(0.2050)	(0.3361)
FC Cash Ratio	-0.0571***	-0.0571***
	(0.0157)	(0.0209)
Export Share	0.0080	0.0080
	(0.0555)	(0.0831)
Import Share$\times\Delta E_{KRW/\$}$	-5.2294***	-5.2294***
	(0.9251)	(1.2119)
Sales Share$\times\Delta E_{KRW/\$}$	-0.5883	-0.5883
	(0.4641)	(0.5223)
Size$\times\Delta E_{KRW/\$}$	0.1453***	0.1453***
	(0.0331)	(0.0441)
Leverage$\times\Delta E_{KRW/\$}$	-1.2271	-1.2271
	(0.9611)	(1.2845)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	2.5621***	2.5621***
	(0.4983)	(0.6494)
Cash Ratio$\times\Delta E_{KRW/\$}$	-2.5149	-2.5149
	(2.9336)	(4.2290)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.5702***	-0.5702**
	(0.1869)	(0.2359)
Export Share $\times\Delta E_{KRW/\$}$	7.8682***	7.8682***
	(0.6328)	(0.9241)

Continued Table 36

Dependent Variable:	Export Quantity	
	(1)	(2)
Import Share$\times\Delta E_{KRW/\$}\times$Size	0.3026***	0.3026***
	(0.0506)	(0.0670)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	0.0405	0.0405
	(0.0255)	(0.0288)
Leverage$\times\Delta E_{KRW/\$}\times$Size	0.0878	0.0878
	(0.0541)	(0.0736)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.1362***	-0.1362***
	(0.0264)	(0.0352)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.1910	0.1910
	(0.1624)	(0.2372)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0323***	0.0323**
	(0.0101)	(0.0130)
Export Share$\times\Delta E_{KRW/\$}\times$Size	-0.4462***	-0.4462***
	(0.0346)	(0.0509)
Import Share$\times$Size	0.0046	0.0046
	(0.0038)	(0.0057)
Sales Share$\times$Size	-0.0383***	-0.0383***
	(0.0016)	(0.0021)
Leverage$\times$Size	-0.0314***	-0.0314***
	(0.0039)	(0.0056)
ST Debt Ratio$\times$Size	0.0090***	0.0090***
	(0.0018)	(0.0028)
Cash Ratio$\times$Size	-0.0283**	-0.0283
	(0.0114)	(0.0189)
FC Cash Ratio$\times$Size	0.0032***	0.0032***
	(0.0009)	(0.0012)
Export Share$\times$Size	-0.0070**	-0.0070
	(0.0031)	(0.0046)
FC Debt Ratio$\times\Delta E_{KRW/\$}\times$Sales Share	-0.1968	-0.1968
	(0.1933)	(0.2033)
FC Debt Ratio$\times$Sales Share	-0.0044	-0.0044
	(0.0145)	(0.0168)
Adjusted R^2	0.0161	0.0161
Observations	1863541	1863541

Table 37: Panel Regression of Export Price Changes on FC Debt — Market Share × FC Debt

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
FC Debt Ratio	0.0047	0.0047	0.0043	0.0043
	(0.0076)	(0.0100)	(0.0077)	(0.0102)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	0.4751***	0.4751***	0.3871***	0.3871***
	(0.0929)	(0.1223)	(0.0937)	(0.1255)
$\Delta E_{KRW/\$}$	-0.3681***	-0.3681***	-0.4711***	-0.4711***
	(0.1032)	(0.1208)	(0.1045)	(0.1409)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	-0.0275***	-0.0275***	-0.0213***	-0.0213***
	(0.0047)	(0.0066)	(0.0047)	(0.0068)
FC Debt Ratio $\times$Size	-0.0002	-0.0002	-0.0002	-0.0002
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Import Share	0.0775***	0.0775***	0.0861***	0.0861***
	(0.0120)	(0.0136)	(0.0121)	(0.0139)
Sales Share	-0.0027	-0.0027	-0.0087	-0.0087
	(0.0054)	(0.0059)	(0.0054)	(0.0060)
Size	0.0022***	0.0022***	0.0021***	0.0021***
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Leverage	0.0729***	0.0729***	0.0699***	0.0699***
	(0.0116)	(0.0152)	(0.0117)	(0.0153)
ST Debt Ratio	0.0402***	0.0402***	0.0422***	0.0422***
	(0.0059)	(0.0073)	(0.0059)	(0.0075)
Cash Ratio	0.0432	0.0432	0.0369	0.0369
	(0.0355)	(0.0463)	(0.0358)	(0.0468)
FC Cash Ratio	-0.0089**	-0.0089**	-0.0096***	-0.0096**
	(0.0035)	(0.0041)	(0.0036)	(0.0043)
Export Share	-0.0499***	-0.0499***	-0.0554***	-0.0554***
	(0.0096)	(0.0114)	(0.0097)	(0.0116)
Import Share$\times\Delta E_{KRW/\$}$	1.7740***	1.7740***	2.0020***	2.0020***
	(0.1545)	(0.1827)	(0.1563)	(0.1908)
Sales Share$\times\Delta E_{KRW/\$}$	0.1955**	0.1955**	0.1341*	0.1341
	(0.0793)	(0.0894)	(0.0805)	(0.0959)
Size$\times\Delta E_{KRW/\$}$	0.0204***	0.0204***	0.0150***	0.0150**
	(0.0054)	(0.0065)	(0.0055)	(0.0066)
Leverage$\times\Delta E_{KRW/\$}$	2.0582***	2.0582***	2.1076***	2.1076***
	(0.1560)	(0.2497)	(0.1569)	(0.2536)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	0.5260***	0.5260***	0.6460***	0.6460***
	(0.0848)	(0.0999)	(0.0859)	(0.1018)
Cash Ratio$\times\Delta E_{KRW/\$}$	4.9688***	4.9688***	4.3697***	4.3697***
	(0.4958)	(0.6429)	(0.5021)	(0.6601)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.0864**	-0.0864*	-0.1017**	-0.1017**
	(0.0397)	(0.0460)	(0.0412)	(0.0481)
Export Share $\times\Delta E_{KRW/\$}$	-0.7027***	-0.7027***	-0.8007***	-0.8007***
	(0.1053)	(0.1213)	(0.1067)	(0.1274)

Continued Table 37

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
Import Share×$\Delta E_{KRW/\$}$×Size	-0.0965***	-0.0965***	-0.1085***	-0.1085***
	(0.0084)	(0.0101)	(0.0084)	(0.0105)
Sales Share×$\Delta E_{KRW/\$}$×Size	-0.0105**	-0.0105**	-0.0082*	-0.0082
	(0.0043)	(0.0048)	(0.0043)	(0.0050)
Leverage×$\Delta E_{KRW/\$}$×Size	-0.1266***	-0.1266***	-0.1294***	-0.1294***
	(0.0087)	(0.0144)	(0.0088)	(0.0147)
ST Debt Ratio×$\Delta E_{KRW/\$}$×Size	-0.0320***	-0.0320***	-0.0381***	-0.0381***
	(0.0044)	(0.0054)	(0.0045)	(0.0055)
Cash Ratio×$\Delta E_{KRW/\$}$×Size	-0.2870***	-0.2870***	-0.2548***	-0.2548***
	(0.0271)	(0.0359)	(0.0274)	(0.0368)
FC Cash Ratio×$\Delta E_{KRW/\$}$×Size	0.0050**	0.0050**	0.0058**	0.0058**
	(0.0022)	(0.0025)	(0.0023)	(0.0026)
Export Share×$\Delta E_{KRW/\$}$×Size	0.0428***	0.0428***	0.0464***	0.0464***
	(0.0057)	(0.0066)	(0.0057)	(0.0070)
Import Share×Size	-0.0046***	-0.0046***	-0.0051***	-0.0051***
	(0.0006)	(0.0007)	(0.0007)	(0.0008)
Sales Share×Size	0.0002	0.0002	0.0007**	0.0007**
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Leverage×Size	-0.0045***	-0.0045***	-0.0044***	-0.0044***
	(0.0006)	(0.0009)	(0.0006)	(0.0009)
ST Debt Ratio×Size	-0.0021***	-0.0021***	-0.0022***	-0.0022***
	(0.0003)	(0.0004)	(0.0003)	(0.0004)
Cash Ratio×Size	-0.0036*	-0.0036	-0.0032	-0.0032
	(0.0019)	(0.0026)	(0.0020)	(0.0026)
FC Cash Ratio×Size	0.0005***	0.0005**	0.0006***	0.0006**
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Export Share×Size	0.0025***	0.0025***	0.0029***	0.0029***
	(0.0005)	(0.0006)	(0.0005)	(0.0006)
FC Debt Ratio×$\Delta E_{KRW/\$}$×Sales Share	-0.0435	-0.0435	-0.0508	-0.0508
	(0.0326)	(0.0363)	(0.0330)	(0.0369)
FC Debt Ratio×Sales Share	0.0023	0.0023	0.0021	0.0021
	(0.0025)	(0.0027)	(0.0025)	(0.0027)
Adjusted R^2	0.0360	0.0360	0.0337	0.0337
Observations	1863541	1863541	1863541	1863541

Table 38: Panel Regression of Export Quantity Changes on FC Debt — Debt to Sales Ratio

Dependent Variable:	Export Quantity	
	(1)	(2)
FC Debt Ratio	-0.1695***	-0.1695**
	(0.0453)	(0.0669)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	-1.3686**	-1.3686**
	(0.5446)	(0.6793)
$\Delta E_{KRW/\$}$	-3.0050***	-3.0050***
	(0.6163)	(0.8090)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	0.0653**	0.0653*
	(0.0280)	(0.0359)
FC Debt Ratio $\times$Size	0.0076***	0.0076**
	(0.0023)	(0.0036)
Import Share	-0.0488	-0.0488
	(0.0695)	(0.1029)
Sales Share	0.2531***	0.2531***
	(0.0305)	(0.0379)
Size	-0.0001	-0.0001
	(0.0024)	(0.0040)
Leverage	0.4208***	0.4208***
	(0.0695)	(0.0988)
ST Debt Ratio	-0.2065***	-0.2065***
	(0.0334)	(0.0512)
Cash Ratio	0.6205***	0.6205*
	(0.2051)	(0.3359)
FC Cash Ratio	-0.0567***	-0.0567***
	(0.0157)	(0.0209)
Export Share	0.0007	0.0007
	(0.0556)	(0.0832)
Import Share$\times\Delta E_{KRW/\$}$	-5.2754***	-5.2754***
	(0.9252)	(1.2112)
Sales Share$\times\Delta E_{KRW/\$}$	-0.4869	-0.4869
	(0.4519)	(0.5140)
Size$\times\Delta E_{KRW/\$}$	0.1478***	0.1478***
	(0.0330)	(0.0438)
Leverage$\times\Delta E_{KRW/\$}$	-0.9945	-0.9945
	(0.9564)	(1.2797)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	2.5221***	2.5221***
	(0.4983)	(0.6494)
Cash Ratio$\times\Delta E_{KRW/\$}$	-2.5606	-2.5606
	(2.9333)	(4.2266)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.5704***	-0.5704**
	(0.1867)	(0.2355)
Export Share $\times\Delta E_{KRW/\$}$	7.9637***	7.9637***
	(0.6335)	(0.9178)

Continued Table 38

Dependent Variable:	Export Quantity	
	(1)	(2)
Import Share$\times\Delta E_{KRW/\$}\times$Size	0.3058***	0.3058***
	(0.0506)	(0.0670)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	0.0334	0.0334
	(0.0244)	(0.0278)
Leverage$\times\Delta E_{KRW/\$}\times$Size	0.0887*	0.0887
	(0.0538)	(0.0729)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.1353***	-0.1353***
	(0.0264)	(0.0352)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.1901	0.1901
	(0.1624)	(0.2370)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0322***	0.0322**
	(0.0101)	(0.0130)
Export Share$\times\Delta E_{KRW/\$}\times$Size	-0.4514***	-0.4514***
	(0.0347)	(0.0505)
Import Share$\times$Size	0.0044	0.0044
	(0.0038)	(0.0057)
Sales Share$\times$Size	-0.0385***	-0.0385***
	(0.0016)	(0.0020)
Leverage$\times$Size	-0.0304***	-0.0304***
	(0.0039)	(0.0056)
ST Debt Ratio$\times$Size	0.0088***	0.0088***
	(0.0018)	(0.0028)
Cash Ratio$\times$Size	-0.0294***	-0.0294
	(0.0114)	(0.0189)
FC Cash Ratio$\times$Size	0.0032***	0.0032***
	(0.0009)	(0.0012)
Export Share$\times$Size	-0.0066**	-0.0066
	(0.0031)	(0.0047)
Debt to Sales Ratio	-0.0319***	-0.0319***
	(0.0079)	(0.0099)
Debt to Sales Ratio$\times\Delta E_{KRW/\$}$	0.3582***	0.3582**
	(0.1361)	(0.1656)
Debt to Sales Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.0344***	-0.0344**
	(0.0116)	(0.0141)
Debt to Sales Ratio$\times$Size	0.0034***	0.0034***
	(0.0008)	(0.0009)
Adjusted R^2	0.0162	0.0162
Observations	1863541	1863541

Table 39: Panel Regression of Export Price Changes on FC Debt — Debt to Sales Ratio

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
FC Debt Ratio	0.0042	0.0042	0.0040	0.0040
	(0.0076)	(0.0100)	(0.0077)	(0.0102)
FC Debt Ratio $\times\Delta E_{KRW/\$}$	0.4535***	0.4535***	0.3695***	0.3695***
	(0.0928)	(0.1226)	(0.0936)	(0.1256)
$\Delta E_{KRW/\$}$	-0.3686***	-0.3686***	-0.4751***	-0.4751***
	(0.1030)	(0.1203)	(0.1043)	(0.1401)
FC Debt Ratio $\times\Delta E_{KRW/\$}\times$Size	-0.0268***	-0.0268***	-0.0208***	-0.0208***
	(0.0047)	(0.0066)	(0.0047)	(0.0067)
FC Debt Ratio $\times$Size	-0.0002	-0.0002	-0.0002	-0.0002
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Import Share	0.0774***	0.0774***	0.0861***	0.0861***
	(0.0120)	(0.0136)	(0.0121)	(0.0139)
Sales Share	-0.0027	-0.0027	-0.0088	-0.0088
	(0.0054)	(0.0059)	(0.0054)	(0.0060)
Size	0.0022***	0.0022***	0.0020***	0.0020***
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
Leverage	0.0727***	0.0727***	0.0700***	0.0700***
	(0.0116)	(0.0155)	(0.0117)	(0.0156)
ST Debt Ratio	0.0402***	0.0402***	0.0422***	0.0422***
	(0.0059)	(0.0073)	(0.0059)	(0.0075)
Cash Ratio	0.0424	0.0424	0.0365	0.0365
	(0.0355)	(0.0462)	(0.0358)	(0.0467)
FC Cash Ratio	-0.0089**	-0.0089**	-0.0096***	-0.0096**
	(0.0035)	(0.0041)	(0.0036)	(0.0043)
Export Share	-0.0509***	-0.0509***	-0.0562***	-0.0562***
	(0.0096)	(0.0114)	(0.0097)	(0.0117)
Import Share$\times\Delta E_{KRW/\$}$	1.7857***	1.7857***	2.0098***	2.0098***
	(0.1545)	(0.1830)	(0.1563)	(0.1911)
Sales Share$\times\Delta E_{KRW/\$}$	0.2202***	0.2202**	0.1616**	0.1616*
	(0.0776)	(0.0898)	(0.0787)	(0.0955)
Size$\times\Delta E_{KRW/\$}$	0.0201***	0.0201***	0.0151***	0.0151**
	(0.0054)	(0.0064)	(0.0055)	(0.0066)
Leverage$\times\Delta E_{KRW/\$}$	2.0552***	2.0552***	2.1202***	2.1202***
	(0.1552)	(0.2483)	(0.1565)	(0.2532)
ST Debt Ratio$\times\Delta E_{KRW/\$}$	0.5465***	0.5465***	0.6619***	0.6619***
	(0.0849)	(0.0999)	(0.0859)	(0.1018)
Cash Ratio$\times\Delta E_{KRW/\$}$	4.9167***	4.9167***	4.3278***	4.3278***
	(0.4958)	(0.6415)	(0.5021)	(0.6584)
FC Cash Ratio$\times\Delta E_{KRW/\$}$	-0.0847**	-0.0847*	-0.1004**	-0.1004**
	(0.0395)	(0.0459)	(0.0410)	(0.0480)
Export Share $\times\Delta E_{KRW/\$}$	-0.7469***	-0.7469***	-0.8322***	-0.8322***
	(0.1058)	(0.1218)	(0.1069)	(0.1277)

Continued Table 39

Dependent Variable:	Export Price in Destination Currency		Export Price in USD	
	(1)	(2)	(3)	(4)
Import Share$\times\Delta E_{KRW/\$}\times$Size	-0.0975***	-0.0975***	-0.1092***	-0.1092***
	(0.0084)	(0.0101)	(0.0085)	(0.0106)
Sales Share$\times\Delta E_{KRW/\$}\times$Size	-0.0123***	-0.0123***	-0.0102**	-0.0102**
	(0.0041)	(0.0047)	(0.0042)	(0.0049)
Leverage$\times\Delta E_{KRW/\$}\times$Size	-0.1316***	-0.1316***	-0.1338***	-0.1338***
	(0.0087)	(0.0145)	(0.0088)	(0.0147)
ST Debt Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.0327***	-0.0327***	-0.0387***	-0.0387***
	(0.0044)	(0.0054)	(0.0045)	(0.0055)
Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	-0.2826***	-0.2826***	-0.2514***	-0.2514***
	(0.0271)	(0.0358)	(0.0274)	(0.0367)
FC Cash Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0049**	0.0049*	0.0057**	0.0057**
	(0.0022)	(0.0025)	(0.0022)	(0.0026)
Export Share$\times\Delta E_{KRW/\$}\times$Size	0.0452***	0.0452***	0.0481***	0.0481***
	(0.0057)	(0.0067)	(0.0058)	(0.0070)
Import Share$\times$Size	-0.0046***	-0.0046***	-0.0051***	-0.0051***
	(0.0006)	(0.0007)	(0.0007)	(0.0008)
Sales Share$\times$Size	0.0002	0.0002	0.0007**	0.0007**
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Leverage$\times$Size	-0.0047***	-0.0047***	-0.0045***	-0.0045***
	(0.0006)	(0.0009)	(0.0006)	(0.0009)
ST Debt Ratio$\times$Size	-0.0021***	-0.0021***	-0.0022***	-0.0022***
	(0.0003)	(0.0004)	(0.0003)	(0.0004)
Cash Ratio$\times$Size	-0.0035*	-0.0035	-0.0031	-0.0031
	(0.0019)	(0.0026)	(0.0020)	(0.0026)
FC Cash Ratio$\times$Size	0.0005***	0.0005**	0.0006***	0.0006**
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Export Share$\times$Size	0.0025***	0.0025***	0.0029***	0.0029***
	(0.0005)	(0.0006)	(0.0005)	(0.0006)
Debt to Sales Ratio	-0.0062***	-0.0062***	-0.0047***	-0.0047***
	(0.0018)	(0.0021)	(0.0015)	(0.0018)
Debt to Sales Ratio$\times\Delta E_{KRW/\$}$	-0.2067***	-0.2067***	-0.1527***	-0.1527***
	(0.0429)	(0.0450)	(0.0339)	(0.0372)
Debt to Sales Ratio$\times\Delta E_{KRW/\$}\times$Size	0.0170***	0.0170***	0.0125***	0.0125***
	(0.0036)	(0.0038)	(0.0028)	(0.0031)
Debt to Sales Ratio$\times$Size	0.0005***	0.0005**	0.0004***	0.0004**
	(0.0002)	(0.0002)	(0.0001)	(0.0002)
Adjusted R^2	0.0361	0.0361	0.0337	0.0337
Observations	1863541	1863541	1863541	1863541