The Dollar Financing and Trade: Evidence from Chile

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Abstract

Given the rising use of the US dollar in international trade, this paper examines how dollar financing affects firms' trade behaviors from the perspective of cross-currency basis (CCB), a country-specific indicator of dollar borrowing cost for firms outside the United States (US). Using a multi-dimensional fixed effect model and two Bartik-like instrument identifications, I take advantage of the disaggregated firm level trade data from Chile between 2009 and 2022, and find that easier access to dollar liquidity increases both firms' imports and exports, highlighting the important role that dollar liquidity plays in shaping firms' trading behaviors after the global financial crisis. When probing further, I find that CCB works as a better dollar liquidity indicator than the intensively studied broad dollar index. An additional analysis with China echoes the finding from Chile, providing further evidence on the effect of dollar liquidity on trade beyond the scope of Chile. The findings are robust to model specification and variable measurement.

KEYWORDS: dollar financing, cross-currency basis, international trade

1 Introduction

In the interconnected realm of international trade, currencies serve as critical enablers of cross-border transactions. Chief among these currencies is the US dollar, boasting the status of the world's primary reserve currency and commanding a significant portion of global trade and transaction settlements. According to SWIFT, the payment messaging service between banks, over 83% of cross-border payments associated with credit-related activity is denominated in US dollars (ICC (2018)). Recently, there is a rise in the use of the dollar, and fall of the use in the euro and other currencies not only in international trade but international finance as well (Maggiori, Neiman, and Schreger 2019). In addition, imports in many countries are invoiced in the US dollar even though their imports from the US make up a very small percentage of their total imports (Gopinath 2015). As US dollar financing remains pervasive, its impact on the world economy, businesses, and financial markets becomes increasingly profound.

One recent study by Bruno and Shin (2023) using firm level data finds exporters that are more reliant on dollar-funded bank credit suffer a greater decline in credit and slowdown in exports following a dollar appreciation. This result reflects the important role that dollar financing plays in determining firms' exporting behaviors. Similarly, access to dollar financing might also have an impact on firms' imports. Figure A.3 plots the evolution of Chilean imports[1] and cross-currency basis of Chilean Peso against the US dollar[2], a measure of funding cost for dollar liquidity confronted by Chilean firms. Obviously, the two fluctuate in the same direction during the sample period, implying that Chile's imports vary as the cost of dollar financing changes. When the US dollar is at a lower cost for Chilean borrowers, Chile imports more from the rest of the world, and *vice versa*. In fact, this phenomenon persists for other countries as well, as shown in Figure A.4.

This paper looks into the intersection of the US dollar's role in financial globalization and international trade from the perspective of cross-currency basis. Using firm level

[1] I also look into exports, which exhibits similar relationship. This graph is available upon request.

[2] An increase in cross-currency basis indicates an improvement of dollar financing condition or easier access to dollar liquidity.

data from Chile with multi-dimensional fixed effects, I explore how the access to dollar liquidity affects firms' trade activities. The empirical results confirm the role that the US dollar plays in the determination of firms' trade pattern–easier access to the US dollar boosts both firms' imports and exports–a finding not only validates in Chile but applies to China as well.

This work contributes to the literature by providing the impact of cross-currency basis or covered interest parity (CIP) deviations on real economic activities instead of focusing on the causes of deviations from CIP, such as increased counterparty risk (Baba and Packer 2009; Hui, Genberg, and Chung 2011), the associated rise in demand for dollar hedges (Borio, McCauley, McGuire, and Sushko 2016; Liao and Zhang 2020), a stronger demand for dollar assets (Avdjiev, Du, Koch, and Shin 2019; Cerutti, Obstfeld, and Zhou 2021), greater illiquidity in the foreign exchange market (Cerutti et al. 2021; Pinnington and Shamloo 2016) , and rising transactions costs of various kinds (Cenedese, Della Corte, and Wang 2021; Du, Tepper, and Verdelhan 2018; Liao 2020; Rime, Schrimpf, and Syrstad 2022).

This paper is also related to the strand of literature on the importance of finance on trade (Amiti and Weinstein 2011; Asmundson, Dorsey, Khachatryan, Niculcea, and Saito 2011; Schmidt-Eisenlohr 2013), the dominant currency paradigm (Gopinath, Boz, Casas, Díez, Gourinchas, and Plagborg-Møller 2020), and theoretical modelling on how a single dominant currency emerges for the purpose to finance international trade (Chahrour and Valchev 2022). This work differentiates the above literature by providing empirical evidence on a single dominant currency in international trade from the perspective of a micro firm level analysis.

This analysis also corresponds to the literature emphasizing that the US dollar works as a global factor in economic and financial activities (Bruno and Shin 2015; Gourinchas 2021) and that the US dollar exchange rate functions as a global risk factor (Avdjiev, Bruno, Koch, and Shin 2019; Cerutti et al. 2021; Lilley, Maggiori, Neiman, and Schreger 2022).

The remainder of this paper is organized as follows. Section 2 provides theoretical

background on cross-currency basis (or CCB), as a measure of dollar liquidity, arises from CIP deviations. I also discuss the implication for CCB, econometric methodology and data in this section. The empirical regression results are documented in Section 3, where I also consider a series of robustness check. In Section 4, I conduct a falsification test, investigate heterogeneity of dollar's effect on trade, and explore how dollar liquidity access affects trade behaviors of firms in China. Section 5 concludes.

2 Theoretical background and methodology

2.1 Cross-currency basis as a measure for dollar liquidity

Covered interest parity is a non-arbitrage condition in international finance, which states that the returns from two different cash markets for the same tenor should be equal, after hedging exchange rate risk via a forward contract. For a country i facing continuously compounded interest rates at time t with an n-period tenor, CIP may be expressed as:

$$e^{n \cdot r^*_{t,t+n}} = e^{n \cdot r_{it,i(t+n)}} \cdot \frac{S_{it}}{F_{it,i(t+n)}} \tag{1}$$

where $\mathbf{r}_{it,i(t+n)}$ ($\mathbf{r}^*_{t,t+n}$) represents the interest rate for the currency of country i (US dollar), and $\mathbf{S}_{it}$ and $\mathbf{F}_{it,i(t+n)}$ are the directly quoted[3] spot and forward exchange rates, respectively.

With perfect arbitrage, (1) will hold with equality at all times. However, deviations from CIP may emerge, and this is expressed as the cross-currency basis $\mathbf{x}_{it,i(t+n)}$,[4] which captures the difference between the dollar interest rate and the *synthetic* dollar rate. Incorporating $\mathbf{x}_{it,i(t+n)}$ into equation (1) yields:

$$e^{n \cdot r^*_{t,t+n}} = e^{n \cdot \left(r_{it,i(t+n)} + x_{it,i(t+n)}\right)} \cdot \frac{S_{it}}{F_{it,i(t+n)}} \tag{2}$$

[3]That is, the price in local currency per US dollar, such that an increase amounts to a depreciation.

[4]We follow Du et al. (2018) and measure the cross-currency basis in terms of the currency of country i against the US dollar. As such, a negative basis implies a dollar shortage for investors outside of the US, which is the opposite of other studies that measure the cross-currency basis of the dollar vis-à-vis a foreign currency (see, for example,Baba and Packer (2009); Fukuda and Tanaka (2017); Levich (2012)).

By taking logarithms and solving (2) for $\mathbf{x}_{it,i(t+n)}$, we obtain the expression for the cross-currency basis for country i:

$$x_{it,i(t+n)} = r^*_{t,t+n} - \left[r_{it,i(t+n)} - \frac{1}{n} \left(f_{it,i(t+n)} - s_{it} \right) \right] \tag{3}$$

where $\mathbf{f}_{it,i(t+n)}$ ($\mathbf{s}_{it}$) are the log-equivalent terms for the forward (spot) exchange rate. Equation (3) expresses the CCB as the difference between the direct and synthetic dollar interest rates (the term in the square brackets), the latter of which is obtained by borrowing domestic currency first, before swapping it for dollars in the FX market with a forward contract, to hedge exchange rate risk.

From the perspective of dollar borrowers, the two rates illustrate the funding cost of borrowing dollars for American investors and foreign investors, respectively. The sign of $\mathbf{x}_{it,i(t+n)}$ indicates the direction of CIP deviations. When $\mathbf{x}_{it,i(t+n)} < 0$, it is cheaper to borrow dollars directly from the dollar cash market, as opposed to the cross-currency swap market (and *vice versa* when $\mathbf{x}_{it,i(t+n)} > 0$). Thus, the negative basis implies relative a dollar shortage for investors outside of the United States, and decreases suggest a worsening of this liquidity condition. This is the typical squeeze faced by non-US banks when they are in need of dollars to finance lending (or to hedge their other dollar liabilities such as offshore bonds), but are unable to secure them in money markets.

Conversely, a dollar *surplus*—when the CCB is positive—means that investors outside the US can borrow dollars at a lower cost. This, in turn, suggests that dollar assets become more competitive, since they can be financed cheaply. However, in the case for Chilean Peso, CCB_Chile is normally negative across the sample period from 2003 to 2012, indicating dollar scarcity faced by Chilean firms.

2.2 Empirical identification

Firm level trade data from the National Customs Service of Chile allows me to study the fluctuations in trade at the country-firm-product-currency-unit level, and therefore focus on the role that dollar financing condition faced by firms in Chile plays in their trade

pattern determination at a disaggregated level. In particular, the baseline specification is:

$$\Delta Y_{fpciut} = \alpha \Delta CCB\_Chile_{t-1} + \beta_{fpc} + \varepsilon_{fpciut} \tag{4}$$

where ΔY_{fpciut} is the yearly logarithm change in the value or volume of firm f's import[5] of product p from country c invoiced in currency i measured in unit u in year t, ΔCCB_{t-1} is the change of cross-currency basis of Chilean Peso against the US dollar with a one-year lag, β_{fpc} is the firm-country-product level fixed effect, and ε_{fpcit} is the error term, respectively.

As discussed in subsection 2.1, the CCB in Chile is a macro-variable determined by both interest and exchange rates, which is supposed to be exogenous to any firms since an individual firm obviously has little influence on the determination of either component and therefore the CCB itself. However, if one ambitiously perceives that the overall better trade performance in a country could in return improves its overall dollar funding condition, the simultaneity issue might exist[6]. In addition, it takes time before the dollar liquidity has an effect on real economic activities since trade has already started at the moment when firms observe the variation in their dollar liquidity access. Therefore, I regress the variations in firms' trade on the changes in CCB of Chile with a lag in specification (4) to mitigate the endogeneity problem, as is usually conducted in the literature (Amiti and Weinstein 2011; Bruno and Shin 2023; Kim, Lim, and Yun 2024).

For imports[7], the multi-level firm-country-product fixed effect enables me to explore the variation within a firm's imports of the same product from a same country over time, therefore capturing its demand for a product[8] from a specific country and thereby providing a framework to examine how dollar liquidity access to Chilean firms affects

[5]For simplicity, I describe this equation from the perspective of imports, which also applies to exports as well. Put it another way, there are four candidates for the dependent variable, imports value, imports volume, exports value and exports volume, all in logarithm first differenced terms.

[6]While this is less likely happening at the firm level, it could still be the case for certain period when the overall trade performance improves a lot in the country, decreasing the cost of borrowing dollars for all firms in the country given their tremendous enhancement in trade.

[7]In the case of exports, it helps to extract the demand shock for the same product from the same destination country. Comparatively, one might also regard this as the supply shock across firms at the country and product level.

[8]Without loss of generality, I look at the HS 2-digit level for the product classification.

their imports growth (demand) at a narrowly defined firm-product-country level. The standard error is clustered at the firm and year level.

Noticeably, neither do I control the currency or unit fixed effect. Currency fixed effect allows one to examine the effect of dollar liquidity on all the variations within the same invoicing currency over time. As a dominant currency in international trade, the US dollar dominates in the invoicing currency of trade activities of Chilean firms[9], making it less necessary to control currency fixed effect. Besides, as a vehicle currency, the US dollar is also extensively used in trade flows not directly involving the US (Goldberg and Tille 2008), suggesting that the US dollar could be the currency people need for emergency funding and central bank uses for intervention purpose. Put it another way, firms might still be affected by dollar liquidity shocks on top of the invoicing channel. Therefore, I prefer not to control the currency fixed effect in the baseline but leave it as a robust check[10]. As for unit fixed effect, there is no evidence on how dollar liquidity differently affects a firm's trade in goods measured in different units of measurement. So I consider it as a robust check as well.

While the specification (4) examines the effects of dollar liquidity access on firms' trade behaviours as a whole, one might think that firms could be differentiated in their dollar exposure, making a difference of the effect of dollar liquidity on their trade. A straightforward impression is that firms with transactions more heavily invoiced in the US dollar will generally be more sensitive to variations in the dollar liquidity condition. However, as the "hegemon" currency in international trade (Gourinchas 2021), the vehicle currency nature of the US dollar makes it matter for trade through the medium of exchange as well besides unit of account (invoicing). That said, other invoicing currencies used in trade could be regarded as competitors of the US dollar, and the frequency of their use for invoicing purpose reflects the corresponding exposure to the common dollar liquidity shock. Therefore, I take advantage of the invoicing currency for each individual transaction, construct a currency exposure variable at the firm-product level and exploit

[9]See Figure A.1for details

[10]The results where the currency together with the country-firm-product fixed effects are controlled are qualitatively consistent with the baseline findings. A full set result table is available upon request.

the specification below as an alternative baseline:

$$\Delta Y_{fpciut} = \alpha' Currency\ exposure_{fpct} \cdot \Delta CCB\_Chile_{t-1} + \beta'_{fpc} + \varepsilon'_{fpciut} \tag{5}$$

where $Currency\ exposure_{fpct}$ is a variable that is the share of the transactions invoiced in currency c over all the transactions for product p in firm f of year t. Taken together, the coefficient of $Currency\ exposure_{fpct} \cdot \Delta CCB\_Chile_{t-1}$ captures the average sensitivity of firm f to fluctuations in the overall US dollar liquidity in the presence of a various invoicing currency, a more accurate proxy of the effects of dollar financing on firms' trade behaviors[11]. Again, specification (5) applies to both imports and exports, and a positive coefficient is expected on α'.

While I hesitate to characterize this as a shift-share design—unlike a genuine Bartik instrument, the sum of the weighted shifts does not decompose into an identity in this case—the notion of using exogenous shares to weight differential exposure to common shocks as a means of identification (Goldsmith-Pinkham, Sorkin, and Swift 2020) is in the same spirit.

One could still feel unconvinced with the identifications above since the dollar liquidity condition is assumed to be the same for all the firms rather than specific to each. The access of dollar liquidity for firms might vary depending on the risk-taking ability of banks that they rely on for external finance (Amiti and Weinstein 2011; Bruno and Shin 2023; Kim et al. 2024), however, the focus of this paper is to examine how the overall dollar liquidity condition in the country affects firms' trade when they have to tap the FX market for liquidity needs. As another alternative, I apply one more Bartik-like instrument methodology where instruments are used, which differentiates from the specification (5).

Different sectors vary in liquidity needs, and therefore has different dollar liquidity

[11]Despite dollar's vehicle currency nature, one might still argue that the US dollar exposure matters more than the currency exposure when firms are experiencing dollar liquidity shocks. Therefore, estimations with the US dollar exposure are considered as a robustness check.

exposure[12]. For an importing firm f, its importing intensity in a certain sector[13] s relative to all firms in the sector plausibly reflects its dollar exposure in this particular sector, and can be measured as:

$$Sector\ intensity_{fst} = \frac{Y_{fst}}{Y_{st}} \tag{6}$$

where Y_{fst} represents the imports value for sector s of firm f in year t, and Y_{it} denotes the total imports value for the whole sector s in year t, respectively. In particular, this variable measures the dollar exposure share of a firm across sectors over time and sums up to 1 by firm, constituting the component of the "seemingly shift share" part of a Bartik instrument. Thereby, the empirical specification follows:

$$\Delta Y_{fpciut} = \gamma Sector\ intensity_{fst} \cdot \Delta CCB\_Chile_{t-1} + \theta_{fpc} + \epsilon_{fpciut} \tag{7}$$

The coefficient—r—captures the effects of the dollar liquidity shock on the firm' trade in terms of its shifting dollar exposure in different sectors. Likewise, an exporting sector intensity can be constructed and the specification above applies to firms' exports as well.

Although the Bartik instrument identification does not necessarily require a real instrument, another concern—the potential endogeneity of the share variable — arises since it is directly generated from the firm's trade value. Therefore, I instrument the firm level sector intensity with a one-year lag sector intensity at the more macro sector level to resolve the endogeneity concern, in line with the spirit of Autor, Dorn, and Hanson (2013) who instrument their shift-share Bartik variable—the US labor market exposure to Chinese import—with a non-US exposure to Chinese imports constructed with a decade lag in its local employment level.

The sector intensity at the sector level is an overall indicator for firm's sector intensity, which obviously indicates the two are closely associated. With a one-year lag, the overall

[12]A sector that relies intensively on importing inputs either raw materials or intermediate products might be more dependent on dollar availability for working capital purpose, while a firm with a larger trade intensity in a certain sector is likely to be affected more by dollar financing due to a higher probability of its dollar exposure.

[13]Sectors are categorized at a two-digit HS code according to the classification from the World Integrated Trade Solution (WITS). The detailed sector classification is reported in Table A.5 in the appendix.

sector intensity remains a good proxy for the contemporaneous firm level sector intensity since the former does not vary much within a short period, which satisfies the relevance condition. However, there is no evidence that the Chile's sector intensity level in trade one year ago should affect its current transactions with the rest of the world at the firm level, validating the exclusion restriction condition. Furthermore, I construct an instrument set comprising of the one-year lag sector intensity together with the ten-year lag indicator for estimation where I denote as the two-stage-least-square (2SLS) specification in comparison with the IV specification where the mere one-year lag sector intensity indicator is employed.

More generally, the instrument (set) constitutes the first stage regression:

$$Sector\ intensity_{fst} = \psi Z_{st-1} + \upsilon_{fst} \tag{8}$$

$$Sector\ intensity_{fst} = \psi_1 Z_{st-1} + \psi_2 Z_{st-10} + \upsilon'_{fst} \tag{9}$$

where $\upsilon_{fst} \sim IID\left(0, \sigma_{\upsilon}^2\right)$ and $\upsilon'_{fst} \sim IID\left(0, \sigma_{\upsilon'}^2\right)$ are idiosyncratic error terms. Estimates of (8) and (9) correspond to the first stage of the IV and 2SLS specifications, respectively.

2.3 Sample choice and data

Why Chile? Chile serves as an ideal country to explore the spillover effect of the US dollar on its trade for several reasons. Firstly, it is a small open economy with a deep integration into international trade but a relatively limited ability to affect world prices and international interest rates, relieving the concern on potential endogeneity issue that a large country might have the ability to adjust its dollar financing cost by affecting international interest rate through trade.

Secondly, the country conducts a flexible exchange rate regime and does not restrict any capital flows, providing a perfect precondition for this analysis. Thirdly, Chile provides public access to detailed records of trade activities for both imports and exports at the firm level, providing concrete micro data to study this issue. Fourthly, both exports and imports in Chile are highly invoiced in the US dollars, suggesting that dollar access

should at least have an effect on shaping firms' trade activities within the country. As illustrated in Figure A.1, almost 80% of the total importing activities is denominated in the US dollar in Chile, followed by Euros accounting for around 10% in the most recent decade. This figure, however, is even larger for exports with approximately 90% transactions settling in the US dollar.

The firm level trade data for both imports and exports is acquired from Chile's National Customs Service, which provides records of trade activities including highly disaggregated product details at the eight-digit Harmonized System (HS) code with the acceptance of date, counterparty country, different units of measurement, invoicing currency, trade volume and trade values[14]. Therefore, I can collapse it into the country-firm-product-currency-unit level at a yearly basis, as described in section 2.2. Due to the availability of data, I focus on the period from 2009 to 2022[15]. The descriptive statistics at the dis-aggregated level of the firms is shown in Table **??** in the appendix. Generally speaking, the imports data is more compact than exports data, given that the number of importing firms is far larger than that of exporting firms. The product level is based on a two-digit HS code, which is a standard application in the literature (Gopinath et al. 2020; Ma and Schmidt-Eisenlohr 2023).

As for the dollar financing access indicator—the three-month tenor cross-currency basis of Chilean Peso vis-à-vis the US dollar (CCB_Chile) —I compute it according to equation (3) with relevant data[16] from Bloomberg and Chilean Benchmark Facility. The daily frequency three-month CCB_Chile between 2002 and 2020 is illustrated in Figure 1. Evidently, the basis has been fluctuating throughout the whole sample period, with negative values for the majority of the time, indicating that Chilean firms in general are in disadvantage in borrowing US dollars from the FX market in the most recent decade.

With regard to the firm data from China, it is collected from the Customs of the

[14]I use FOB value for exports and CIF value for imports in the analysis.

[15]While the National Customs Service provides firm's exports data since 2007, it has only records of imports data from 2009. To avoid potential biases from the Global Financial Crisis (GFC) period and conduct consistent estimations for both imports and exports, I restrict the sample period between 2009 and 2022.

[16]The 3-month LIBOR interest rate for the US dollar, spot and 3-month forward exchange rates of CLP against USD are collected from Bloomberg, while the 3-month inter-bank interest rate for CLP comes from Chilean Benchmark Facility.

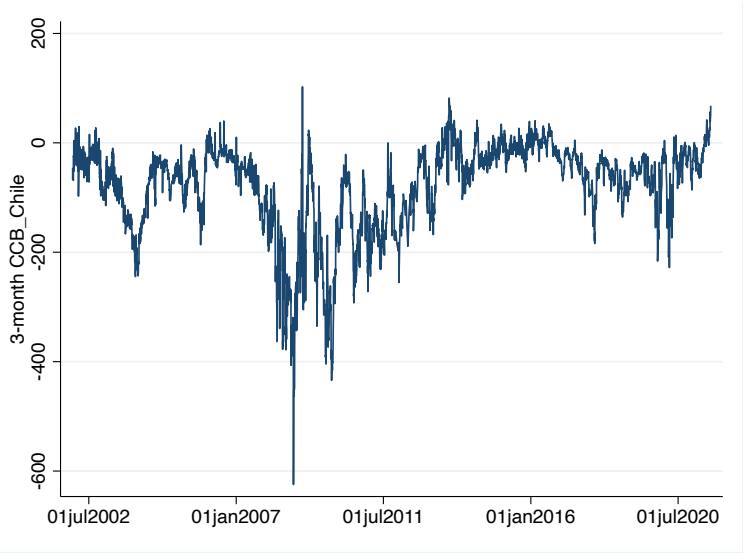


Figure 1: Cross-currency basis of Chilean Peso against USD at the 3 month tenor

People's Republic of China. Likewise, the cross-currency basis of Chinese Yuan (CNY) against the USD is calculated based on the same equation (3) with related interest and exchange rates data from Bloomberg. Other macro-economic data comes from various sources. For instance, the broad US dollar index is from the Bank for International Settlements (BIS) and the trade openness and GDP per capita data is from the world bank.

3 Empirical results

3.1 Baseline regressions

The baseline estimation results corresponding to (4) are reported in Table 1, with panel A for imports and panel B for exports. The sample period is between 2009 and 2022[17]. I consider three different specifications within each country sample, from all units of measurement[18] to the unit for weight and quantity, respectively.

[17]I choose this period to make most of the data available. However, I also do the estimation for the period excluding the pandemic as a robustness check, which yields consistent results despite a lower overall significance.

[18]Different goods are measured in different units of measurement, and it is necessary to differentiate cubic meter from net kilo since they are not comparable. Collapsing data without considering unit of measurement might induce biases. All units specification considers all different types of unit of measurement used in all the trade activities, while weight specification counts only transactions where products are measured in net kilo and quantity specification restricts products measured in pieces only. Clearly, weight and quantity account for more than 95% observations of the full sample in terms of unit

Table 1: Effects of cross-currency basis on Chilean firm's trade[†]

	All counterparties			US only			Excluding US		
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	Quantity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Imports									
Value									
ΔCCB_Chile	0.3155**	0.3193**	0.3228**	0.2776*	0.2841*	0.2731*	0.3240**	0.3271**	0.3348**
	(0.1376)	(0.1378)	(0.1437)	(0.1330)	(0.1348)	(0.1373)	(0.1391)	(0.1389)	(0.1464)
R^2	0.138	0.136	0.137	0.128	0.124	0.126	0.140	0.139	0.140
Volume									
ΔCCB_Chile	0.3086*	0.3136*	0.3147*	0.2909*	0.2966*	0.2885*	0.3126*	0.3174*	0.3211*
	(0.1573)	(0.1620)	(0.1531)	(0.1402)	(0.1442)	(0.1381)	(0.1619)	(0.1667)	(0.1580)
R^2	0.136	0.133	0.139	0.126	0.124	0.123	0.139	0.136	0.143
Observations	837,548	555,831	248,520	154,417	100,012	48,751	683,131	455,819	199,769
Panel B: Exports									
Value									
ΔCCB_Chile	0.3186**	0.3071**	0.3793**	0.2547*	0.2084	0.4096**	0.3243***	0.3157**	0.3743**
	(0.1058)	(0.1052)	(0.1243)	(0.1413)	(0.1629)	(0.1379)	(0.1038)	(0.1018)	(0.1348)
R^2	0.136	0.141	0.140	0.138	0.152	0.119	0.136	0.140	0.144
Volume									
ΔCCB_Chile	0.2863**	0.2694**	0.3415**	0.2078	0.1607	0.3560*	0.2932**	0.2789**	0.3390**
	(0.1159)	(0.1163)	(0.1373)	(0.1562)	(0.1725)	(0.1870)	(0.1131)	(0.1126)	(0.1435)
R^2	0.129	0.134	0.130	0.122	0.136	0.103	0.130	0.133	0.135
Observations	132,213	95,305	11,523	10,583	7,477	1,607	121,630	87,828	9,916
Fixed effects:									
country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

[†] This table reports the regression between yearly change in imports and exports (both volume and value) from firms in Chile and yearly lagged change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Strikingly, I find a positive and statistically significant coefficient on ΔCCB_Chile through all the specifications for both imports with all counterparties from column (1) to (3) in panel A, with the country-firm-product multi-dimensional fixed effect controlled regardless of value, volume and unit of measurement. This result suggests that a more favourable dollar financing condition increases Chilean firms' imports from the rest of the world. Statistically speaking, a 1 percentage point (or more conventionally, a 100 basis points) increase in CCB of Chile is associated with 37.09% to 38.10% growth in Chilean firms' imports value[19], and 36.15% to 36.98% rise in their imports volume from the rest of world.

Similar results are found for exports as well. The positive and significant coefficient

of measurement, which is also the reason why I focus on these two units individually.

[19]For log-level specifications, the interpretation of α is that a 1 unit (1 percentage point) hike in the CCB of Chile is related to $e^{\alpha} - 1$, therefore $e^{0.3155} - 1 = 37.09\%$ and $e^{0.3228} - 1 = 38.10\%$ increase in imports value. The same interpretation applies to imports volume and exports.

on ΔCCB_Chile between column (1) to (3) in Panel B implies that an improvement in Chile's dollar funding condition boosts its exports to the rest of the world at the firm level, with a growth between 35.95% to 46.13% and 29.89% to 40.71% in value and volume, respectively when the dollar funding cost is relaxed by a 100 bps faced by Chilean firms.

A firm trading more intensively with the US could rely less on external dollar financing proxied by CCB since it might have some subsidiaries in the US through which it can directly borrow dollar from the US money market (Kim et al. 2024), which is the case for foreign parent banks to fund themselves internally from their US branches during the global financial crisis (Cetorelli and Goldberg 2012). To explore this effect, I differentiate trade activities made with the US only from those made with counterparties excluding the US, and repeat the regressions with the corresponding results reported in column (4) to (6) for the former and column (7) to (9) for the latter, respectively. While the coefficient on ΔCCB_Chile remains positive for all the specifications when the trading partner is restricted to the US only, the significance on balance reduces for imports and loses for exports[20].

In terms of imports, it seems to contradict with the conventional thinking that a firm importing more from the US might be more dependent on dollar availability if it needs dollar credit to finance its trade given a higher probability of the US dollar being the currency for international settlement. However, both the lower significance level and the smaller magnitude of the coefficient compared to those found in the last three columns indicate that dollar credit becomes less important for imports in Chile when the counterparty is the US. One possible explanation is that firms with a tighter connection with the US might have some additional source for raising dollars, impairing the role that cross-currency basis plays in affecting their imports.

With regard to exports, it is more reasonable to witness an insignificant coefficient with a smaller magnitude on ΔCCB_Chile—except for the quantity specifications[21] in

[20]The significance of the coefficient merely reduces for specifications estimated with imports value, while it loses for exports specifications estimated from all units of measure and weight. For quantity specification with exports, the significance of the coefficient does not lose and we avoid over-interpreting this result given its relatively smaller number of observations.

[21]We do see a positive and significant coefficient for the two quantity specifications. However, we avoid over-interpreting this result given its small sample.

column (6)—when constraining the counterparty to the US sample only. Intuitively, exporting to the US is likely to reduce a firm's reliance on dollar financing since it has easier access to dollars from its US counterparty directly through export. Large multinational corporations, in addition, might have affiliates or subsidiaries in the US, providing them with even more sources to access dollars directly from the money market and weakening their dependence on exchange market for dollars. Hence, the dollar financing condition measured as cross-currency basis becomes less relevant to firms' exports when scrutinizing merely trade activities with the US. It is no wonder to see a positive and significant effect of dollar liquidity on exports after excluding the US sample, as shown between column (7) to (9).

The results for the alternative baseline—equivalent to specification (5)—are reported in Table 2 with panel A for imports and panel B for exports, respectively. Obviously, these echo what is found in Table 1, providing support to the previous finding. Furthermore, it also suggests that Chilean firms with higher exposure to the US dollar do trade more when the dollar funding condition relaxes.

As discussed, firms with a larger trade intensity in a certain sector is likely to be more affected by dollar financing due to a higher probability of dollar exposure within this sector. When I probe further, looking at whether dollar financing affects a firm's trade pattern through its sector intensity corresponding to the Bartik like instrument specification (7) in section 2.2, I obtain the results in Table 3. In particular, I run the regressions for the three different specifications, the OLS, IV and 2SLS within each counterparty sample.

Basically, I find positive and significant coefficients on $Sector\ intensity \cdot \Delta CCB\_Chile$ throughout all the OLS specifications. This signals that Chilean firms tend to trade more in their intensive sectors when the dollar liquidity condition improves. Given the potential endogeneity between the firm sector intensity and trade, the IV and 2SLS estimations provide consistent results, where the coefficients are uniformly positive and significant except for the US only specifications, as shown in column (5) and (6). Unlike the previous baselines, where the effects of dollar financing is found to be quantitatively smaller in im-

Table 2: The effects of dollar liquidity with firms' currency exposure on trade in Chile[†]

	All counterparties			US only			Excluding US		
	(1) All units	(2) Weight	(3) Quantity	(4) All units	(5) Weight	(6) Quantity	(7) All units	(8) Weight	(9) Quantity
Panel A: Imports									
Value									
Currency exposure · ΔCCB_Chile	0.3664**	0.3662**	0.3859**	0.3220**	0.3262**	0.3245*	0.3772**	0.3757**	0.4020**
	(0.1486)	(0.1486)	(0.1556)	(0.1408)	(0.1416)	(0.1484)	(0.1510)	(0.1507)	(0.1587)
R^2	0.138	0.136	0.138	0.129	0.124	0.126	0.140	0.139	0.141
Volume									
Currency exposure · ΔCCB_Chile	0.3624*	0.3627*	0.3815**	0.3393**	0.3444**	0.3371*	0.3680*	0.3671*	0.3932**
	(0.1664)	(0.1698)	(0.1650)	(0.1501)	(0.1503)	(0.1552)	(0.1712)	(0.1754)	(0.1690)
R^2	0.137	0.133	0.140	0.126	0.124	0.124	0.139	0.136	0.143
Observations	837,548	555,831	248,520	154,417	100,012	48,751	683,131	455,819	199,769
Panel B: Exports									
Value									
Currency exposure · ΔCCB_Chile	0.3368**	0.3198**	0.3943**	0.2646*	0.2202	0.4098**	0.3437**	0.3286**	0.3917**
	(0.1151)	(0.1097)	(0.1321)	(0.1457)	(0.1648)	(0.1455)	(0.1135)	(0.1065)	(0.1434)
R^2	0.136	0.141	0.140	0.138	0.152	0.118	0.135	0.140	0.144
Volume									
Currency exposure · ΔCCB_Chile	0.3038**	0.2829**	0.3516**	0.2162	0.1785	0.3271	0.3122**	0.2922**	0.3558**
	(0.1248)	(0.1206)	(0.1464)	(0.1610)	(0.1746)	(0.1927)	(0.1223)	(0.1171)	(0.1529)
R^2	0.129	0.134	0.130	0.122	0.136	0.102	0.129	0.134	0.135
Observations	132,193	95,294	11,523	10,574	7,472	1,607	121,619	87,822	9,916
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

[†] This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

ports within the US only sample, a larger coefficient on *Sector intensity* · ΔCCB_Chile implies that firms are more impacted by dollar liquidity in their imports of highly intensive sectors from the US. It seems to be more in line with the conventional thinking that importers in Chile will import more when the US dollar can be borrowed at a lower cost. Whereas for exporters, the coefficient goes insignificant, collaborating with the previous finding that dollar funding becomes less relevant for Chilean exporters if they can have additional source of US dollars possibly from their subsidiaries in the US given a greater connection with the US.

The tests for the instruments do not raise red flags. Significant Kleibergen-Paap *rk LM* statistics point to the instruments' relevance, while insignificant Hansen J for support the overall coherence of the instrument set. Meanwhile, the Cragg-Donald Fs consistently cross the threshold for acceptable bias at the 10 percent level, validating the overall strength of the instrument set.

Overall, I find that an improvement in the dollar financing condition in Chile—

Table 3: The effects of dollar liquidity with firms' sector intensity on trade in Chile[†]
Independent variable: 100 × Sector intensity · ΔCCB_Chile

	All counterparties			US only			Excluding US		
	(1) OLS	(2) IV	(3) 2SLS	(4) OLS	(5) IV	(6) 2SLS	(7) OLS	(8) IV	(9) 2SLS
Imports value									
Sector intensity · ΔCCB_Chile	0.1000***	1.9736**	1.9537**	0.1487**	2.9223*	2.9176*	0.0944**	1.8505**	1.8357**
	(0.0317)	(0.8380)	(0.8431)	(0.0664)	(1.3849)	(1.3851)	(0.0327)	(0.7703)	(0.7774)
Observations	837,548	801,276	801,276	154,417	148,031	148,031	683,131	653,245	653,245
F	9.97	5.61	5.37	5.01	4.54	4.44	8.31	5.84	5.58
Cragg-Donald F		13,024.22	7,006.80		1,464.95	750.94		11,812.36	6,390.17
Kleibergen-Paap rk LM		4.112**	4.908*		4.084**	5.156*		4.106**	4.866*
Hansen J			0.066			0.106			0.039
Exports value									
Sector intensity · ΔCCB_Chile	0.0278***	0.2275**	0.2303**	0.0236**	0.2091	0.2027	0.0281***	0.2285**	0.2318**
	(0.0067)	(0.0889)	(0.0848)	(0.0079)	(0.1756)	(0.1623)	(0.0067)	(0.0863)	(0.0824)
Observations	132,212	132,193	132,193	10,583	10,572	10,572	121,629	121,621	121,621
F	17.36	6.55	7.38	8.88	1.42	1.56	17.52	7.01	7.91
Cragg-Donald F		6,524.04	3,606.69		403.88	20.44		6,095.19	3,372.38
Kleibergen-Paap rk LM		3.26*	4.72*		3.43*	4.26		3.24*	4.72*
Hansen J			0.10			0.05			0.16

[†] This table reports the regression between yearly change in imports and exports value from firms in Chile and their trade in sectoral intensity's exposure to the dollar liquidity condition, measured as the yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. *Sectorintensity* is a ratio of a certain firm's trade value in one particular sector to the total trade value of this sector, which is instrumented with the 1-year lagged trade sector intensity at the country level (IV specifications) and both the 1-year and 10-year lagged trade sector intensity at the country level (2SLS specifications). The sector intensity is measured at percentage points by multiplying 100. Test statistics for instrument quality are the Kleibergen-Paap rk LM statistic, Kleibergen-Paap rk F statistic, and Hansen J statistic, corresponding to tests for underidentification test, weak identification, and overidentification, respectively. The 10% maximal IV size critical value of weak identification is 19.9 for 2SLS specifications, and 16.4 for IV specifications. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

measured as the cross-currency basis of Chilean Peso vis-à-vis the US dollar—tends to foster Chilean firms' trade activities. Put it another way, when firms in Chile can borrow dollars at a lower cost from the swap market, they trade more with the rest of the world. In fact, it collaborates with Boz, Gopinath, and Plagborg-Møller (2017) and Ma and Schmidt-Eisenlohr (2023) who find that the US dollar appreciation against other currencies and therefore a more stringent dollar financing condition induces a decline in global trade volume at the country level, while this work provides firm level evidence for the effect of dollar liquidity on trade. This finding is also consistent with the risk-taking channel put forward by Bruno and Shin (2015) that real activities are negatively affected when the US dollar strengthens and subsequently reduces local banks' risk-taking ability.

3.2 Robustness

I test the sensitivity of the baseline results along several lines. First, I consider using CCB at different tenors. Then I allow for changes in the coverage of the sample, along two

dimensions: in terms of sectors included, and the choice of sample period by excluding the Covid when CIP deviations are driven by unexpected shocks. Next, I explore different fixed effects and standard errors from the perspective of cluster levels.

In the interest of space, while I run the baseline specifications discussed in Section 3.1 for both volume and value, I constrain to report only the value specifications with the all unit of measurement sample, for both imports and exports, and leave the volume results in appendix[22]. These are shown in Table 4.

I focus on the 3-month tenor of CCB as the dollar liquidity condition for Chilean firms in the baseline not only because it is the the most used tenor in the literature (Cerutti et al. 2021; Du et al. 2018), but also an appropriate tenor that firms might rely on for external financing. However, there is no evidence to exclude the potential effects of dollar liquidity at other tenors on trade. In this case, I run the estimation with both the 1-month and 1-year CCB, reporting the corresponding results in column (1) and (2). Interestingly, the shorter tenor witnesses a statistically significant and positive coefficient with a comparative magnitude to the baseline while the longer one loses significance despite of being positive. I will discuss the tenor issues in details later.

As an open economy, Chile has a very different trade structure in terms of imports and exports. On the one hand, the nation imports a large amount of fuels and machinery including electrical equipment from other countries, accounting for around two-fifths of its total imports in recent years. On the other hand, it is abundant in metal resources such as copper ores and other copper-related products, making metals and minerals its largest exporting sectors amounting to more than half of its total exports in the most recent decade. As the largest producer and exporter of copper, Chile might be less affected by dollar liquidity in terms of its exports of copper as long as there is a large external demand from the rest of the world. Instead, it might still have to purchase products and goods from abroad even if there is a dollar shortage since products these high intensive importing sectors are needed to support its economic activities. Put it another way, the trading behaviour of dominant sectors is likely not to be influenced by liquidity factors.

[22]See Table A.7 for details.

I do the estimation for both imports and exports by removing these dominant sectors, and the results are reported in column (3). Given that I concentrate on yearly analysis in the baseline, it is also worthwhile to conduct a quarterly estimation, whose results are presented in column (4).

As is discussed in section 2.3, the dependent variable is at the country-product-firm-currency-unit level and I control the country-product-firm fixed effect in the baseline. While the variation within either the invoicing currency or the unit of measurement seems to matter less[23], one might still argue that the effect of dollar liquidity on transactions in US dollars should be different from those in other currencies despite of being a vehicle currency. To dispel these doubts, I further control the currency and unit fixed effect, respectively, and both on top of the country-firm-product fixed effect. These results are displayed between column (6) and column (8).

Another concern could be the spatial correlation since I have no information of the firms in terms of their location (state in the country.) It is possible that firms' trade might more or less be spatial dependent on their location. Following Driscoll and Kraay (1998), I run a regression that takes into account of spatial dependence, which is reported in column (9). A few literature has already discussed the two-way cluster robust estimates of variance matrix, both in theoretical (Cameron, Gelbach, and Miller 2011; Miglioretti and Heagerty 2007; Thompson 2011) and empirical (Hebb 2021) context. While it is reasonable to cluster the standard error at the two-way firm and year level, it is still plausible to check the multi-level clustering given that the multi-dimensional data in the analysis is not nested in any dimension and that the possibility of the standard error correlation within the country or product level. Therefore, in addition to the firm-year clustering, I further cluster the standard error at the country and product level, respectively and both[24]. These results are shown through column (10) to (12).

[23]On one hand, the US dollar accounts for the majority percentage of the invoicing currency in both imports and exports, which erodes the importance of currency effect when examining the effect of dollar liquidity on trade. On the other hand, there seems to be little evidence on how liquidity could differently affect trade via different unit of measurement.

[24]In reality, the trade data is at the country-firm-product-currency-unit level. Although I only additionally cluster the standard errors at the country and product level, the same attempts are done for currency and unit as well, where the corresponding results are reported in Table A.6 in the appendix.

For the Bartik currency share specification (5), one might feel that trade invoiced in the US dollar should be more affected by the dollar liquidity since they reflect directly a firm's dollar exposure regardless of the vehicle nature of currency. Thus, I create a dollar exposure indicator for estimation by recoding the currency exposure to 0 whenever the transaction is not invoiced in the US dollar, negating the potential effect of dollar liquidity on trade without direct dollar exposure. More stringently, if one believes that dollar exposure should count only those trade activities invoiced in the US dollar, a US dollar dummy[25] works better than the share indicator. Moreover, from the perspective of liquidity for currencies, the US dollar dominates, followed by other G10 currencies[26]. In general, more liquid currencies are more likely to be traded either in the international financial market or trade market, and therefore more exposed to the dollar liquidity shock. One simple way to capture this is to code a currency indicator, equaling to 1, 0.5, and 0 when the invoicing currency is the dollar, G10 currencies, and the rest, respectively. I run the regressions for the above mentioned indicators interacted with the dollar liquidity condition, and report these results in appendix[27] for the interest of space.

I find, across these broad range of estimates for coefficients on ΔCCB_Chile, that they remain, in the main, both positive and significant for either imports and exports value, consistent with the baseline.[28] The notable exception applies to the case when the tenor of CCB in Chile is restricted to one year. This is not unexpected, since the exchange rate in Chile freely adjusts whenever it deviates its long-run equilibrium, negating the importance of a relatively longer tenor of dollar liquidity on its trade. I discuss this in 4.3 with details. On balance, the checks in this section provide additional support to the

[25]Let me denote it as USD_{cfput}. Theoretically, it is 1 when a transaction from firm f in product p measured in unit u with country c is invoiced in the US dollar in year t, and 0 otherwise. While not exactly the same, this specification is similar to the one put forward by Rajan and Zingales (1998), who identify the effects of financial development on industrial growth by looking at the interaction of firms' external finance dependence of a particular industry in the US with a exogenous measure of the financial development in a foreign country. In my setting, either the dollar liquidity condition faced by Chilean firms or the choice of invoicing currency in trade is plausible to be exogenous.

[26]The G10 are the most heavily traded and liquid currencies, and comprise the Australian, Canadian, (the U.S.) and New Zealand dollars, the euro, the Japanese yen, British pound, Swiss franc, Norwegian krone, Danish krone, and Swedish krona.

[27]See Table A.8, A.9, and A.10 for details.

[28]While not reported here, I run the same estimations for volume specifications and find qualitatively consistent results, which is reported in Table A.7 in the appendix.

finding that easier access to dollar liquidity positively affects Chile's trade at the firm level.

Table 4: Sensitivity of cross-currency basis on trade to variations in sample coverage, variable construction, and estimation methodologies[†]

	CCB tenor: 1-month	CCB tenor: 1-year	Sub: no dom secs	Sub: excluding Covid	Est: quarterly	Est: currency FE
	(1)	(2)	(3)	(4)	(5)	(6)
Imports						
ΔCCB_Chile	0.3442***	0.0880	0.3244**	0.3201*	0.0435*	0.3217**
	(0.0749)	(0.2212)	(0.1411)	(0.1404)	(0.0245)	(0.1403)
R^2	0.141	0.133	0.139	0.115	0.045	0.142
Observations	837,991	837,991	558,730	768,348	1,464,895	833,729
Exports						
ΔCCB_Chile	0.3279***	0.0240	0.3198**	0.3188**	0.0468	0.3221**
	(0.0445)	(0.1976)	(0.1040)	(0.1075)	(0.0319)	(0.1079)
R^2	0.141	0.125	0.136	0.136	0.057	0.139
Observations	132,213	132,213	121,214	132,170	283,720	131,803
	Est: unit FE	Est: currency-unit FE	Est: Driscoll-Kraay	Cluster: country	Cluster: product	Cluster: country & product
	(7)	(8)	(9)	(10)	(11)	(12)
Imports						
ΔCCB_Chile	0.3208**	0.3268**	0.3268*	0.3156**	0.3156**	0.3156**
	(0.1403)	(0.1431)	(0.1571)	(0.1288)	(0.1332)	(0.1245)
R^2	0.137	0.140		0.138	0.138	0.138
Observations	817,682	812,372	837,991	837,991	837,991	837,991
Exports						
ΔCCB_Chile	0.3192**	0.3229**	0.3229**	0.3186**	0.3186**	0.3186***
	(0.1055)	(0.1077)	(0.1064)	(0.1031)	(0.1034)	(0.1007)
R^2	0.141	0.143		0.136	0.136	0.136
Observations	131,295	130,862	132,213	132,213	132,213	132,213

[†] This table reports the regression between yearly change in imports and exports value from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product level fixed effect (where not specified) is controlled, and robust standard errors clustered at firm and year level (where not specified) are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

4 Discussion

4.1 Further analysis

4.1.1 A pre-crisis falsification test

Global trade hasn't been increasing steadily until 2008, when the global financial crisis broke out (Hoekman 2015) and credit tightening was one factor attributed to the collapse of international trade flows (Chor and Manova 2012). While the focus of this paper is the effect of dollar credit on Chile's trade during the post-crisis period in which global trade suffers a decline, it is worthwhile to examine whether dollar finance mattered in Chile's trade prior to the crisis when the overall economic conditions are more favourable. Therefore, I repeat estimations as the baseline (4) with the sample period from 2003 to 2007[29], and show the corresponding results in Table 5[30].

Table 5: Effects of cross-currency basis on Chile's trade values, pre-crisis period†

	All counterparties			US only			Excluding US		
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	Quantity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Imports Value									
ΔCCB_Chile	-0.1055	-0.0985	-0.1074	-0.0109	-0.0144	0.0057	-0.1337	-0.1230	-0.1442
	(0.1561)	(0.1427)	(0.1847)	(0.1237)	(0.1078)	(0.1647)	(0.1674)	(0.1553)	(0.1946)
R^2	0.230	0.229	0.233	0.208	0.211	0.208	0.237	0.236	0.243
Observations	231,387	154,208	72,231	53,621	35,128	17,934	177,766	119,080	54,297
Exports Value									
ΔCCB_Chile	-0.1232	-0.2072	0.1979	-0.0656	-0.1647	0.7716	-0.1300	-0.2121	0.0667
	(0.1055)	(0.1121)	(0.1853)	(0.2196)	(0.1980)	(0.4920)	(0.0972)	(0.1076)	(0.1539)
R^2	0.255	0.263	0.219	0.249	0.276	0.199	0.256	0.261	0.227
Observations	41,678	31,613	3,903	4,524	3,336	752	37,154	28,277	3,151
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

† This table reports the regression between yearly change in imports and exports from firms in Chile and lagged yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample period is restricted between 2003 and 2007. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Surprisingly, the coefficients on dollar financing condition are uniformly negative for either the imports or exports specifications, different from the baseline results. However,

[29]We constrain the sample between 2003 and 2007 as the pre-crisis period due to data availability. In fact, there is no records of trade before crisis in Chile's Custom Service. The data I use is a database spreading in the academia for the purpose of research.

[30]For the interest of space, I only report the results from imports and exports values in here. However, those results for volumes are qualitatively similar and shown in Table A.3 in the appendix

none of them is significant, implying that dollar credit played little role in affecting Chile's trade before the crisis. Overall, it messages that dollar liquidity does not become important to trade activities in Chile until the post-crisis period, when the CIP deviations for G10 currencies against the USD have also persistently enlarged (Amador, Bianchi, Bocola, and Perri 2020; Cerutti et al. 2021; Du et al. 2018).

4.1.2 Trade intensity with the US alleviates firms' dependence on CCB

An interesting finding is that the dollar liquidity plays a larger role on firms' trade when focusing only on their trade activities with countries other than the US. While it sounds reasonable that firms trade with the US might have affiliations or subsidiaries abroad, examining trade transactions with non-US countries only does not really preclude a firm's trade dependence on the US[31]. To explore this, I compute a firm's trade intensity with the US—defined as the share of its trade value with US to total trade value—and impose an interaction term between it and ΔCCB_Chile. I run the regression for both imports and exports, with three different country samples as the baseline. These results are displayed in Table 6 [32].

Strikingly, the coefficient on the interaction term is uniformly negative and significant for both the imports and exports regardless of the all countries sample or the sample excluding the US. It surprisingly signals that a firm with a deeper trade relation with the US reduces its overall trade when the dollar liquidity condition in the FX market improves. By contrast, a positive and insignificant coefficient is found on the same coefficient for the US only sample. Overall, it suggests that the dollar access from the FX market becomes less relevant to firms' trade when they hold a tighter relationship with the US possibly due to overseas affiliations or subsidiaries there, reconciling with the finding of Kim et al. (2024) that overseas banks could support their headquarters by taking advantage of foreign access to funding.q

[31]For instance, a firm could trade intensively with the US, say 50% of its exports is to the country and the other half goes to the rest of the world. The analysis with only its transactions to the US cannot draw a conclusion on firms without trading with the US since it still has a large trade share (50% in this case) with the country

[32]For the interest of space, I report only the results for values in the table and leave the volumes in the appendix. On balance, the volume specifications suggest consistent results. See Table A.1 for details.

Table 6: Effects of dollar liquidity on Chilean firm's trade values, conditional on firms' trade intensity with the US†

	Imports			**Exports**		
	(1) All counterparties	(2) US only	(3) Excluding US	(4) All counterparties	(5) US only	(6) Excluding US
US intensity× ΔCCB_Chile	-0.1018**	0.0230	-0.1379*	-0.0471	0.1449	-0.1213**
	(0.0343)	(0.0830)	(0.0634)	(0.0433)	(0.1063)	(0.0540)
US intensity	0.2650**	1.3024***	-0.7158***	-0.0895	1.3102***	-0.9226***
	(0.0862)	(0.1563)	(0.1003)	(0.0909)	(0.2058)	(0.1024)
ΔCCB_Chile	0.3285**	0.2039*	0.3517**	0.3095**	0.1803	0.3258***
	(0.1228)	(0.1017)	(0.1301)	(0.1025)	(0.1489)	(0.1047)
Fixed effects:						
country-firm-product	Y	Y	Y	Y	Y	Y
R^2	0.145	0.141	0.151	0.154	0.161	0.161
Observations	604,803	154,417	450,386	85,521	10,583	74,938

† This table reports the regression between yearly change in trade (both imports and exports) values from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. US intensity is a yearly varying ratio of a firm's trade value with the US to its total trade value. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

4.1.3 The broad dollar or cross-currency basis?

After the GFC, the broad dollar index has been regarded as an indicator for global financial conditions. The dollar exchange rate appreciation is related to the international dollar funding stress (Obstfeld and Zhou 2022) and global risks(Georgiadis, Müller, and Schumann 2024), which goes to the opposite direction of the traditional trade channel and negatively affects the real investments in emerging market economies (Avdjiev et al. 2019; Hofmann and Park 2020) by dragging lending banks' risk-taking capacity (Bruno and Shin 2015, 2023).

As a multilateral exchange rate, the broad dollar works as an overall dollar funding condition for all its trading partners. However, the cross-currency basis—the dollar liquidity indicator in this paper—accurately measures the cost of borrowing dollars for Chilean firms through the FX market, possibly better capturing the dollar funding condition for the local firms than the dollar exchange rate itself. To explore this, I run the regressions of trade values on the broad dollar, $\Delta Dollar$ [33] or $\Delta Dollar\_Orth$ [34], with and without the CCB, respectively. Both GDP per capita and the trade openness at the

[33] Consistent to the CCB, $\Delta Dollar$ is a one-year lag logarithm change in the broad dollar index.

[34] $\Delta Dollar\_Orth$ is the component of the dollar index orthogonal to the CCB of Chile, obtained as the residuals by regressing the dollar on CCB.

country level[35] are controlled. I report these results[36] in Table 7.

Table 7: The effects of dollar liquidity on trade values in Chile: broad dollar versus CCB†

	Imports		**Exports**	
	(1)	(2)	(3)	(4)
ΔCCB_Chile		0.4009***		0.3265***
		(0.0411)		(0.0549)
$\Delta Dollar$	-0.6324		-0.8643*	
	(0.4369)		(0.3978)	
$\Delta Dollar\_Orth$		-1.4801***		-1.6269***
		(0.2607)		(0.4065)
Fixed effects:				
country-firm-product	Y	Y	Y	Y
R^2	0.133	0.144	0.131	0.143
Observations	801,720	801,720	128,203	128,203

† This table reports the regression between yearly change in trade (both imports and exports) values of firms in Chile and yearly change of the US dollar index, and the yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. Both GDP per capita in Chile for exports (or GDP per capita in the destination country for imports) and trade openness are controlled. The sample starts from 2009 to 2022. Fixed effect at country-firm-product level is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Interestingly, the negative sign of the coefficient on $\Delta Dollar$ in column (1) and (3) is as expected, indicating that appreciations in the dollar exchange rate itself tend to impair firm's trade in Chile. However, this effect is statistically insignificant for imports and only marginal significant for exports. This result possibly reflects the fact that the broad dollar index could be a less accurate proxy as dollar funding condition for Chilean firms compared to the country specific cross-currency basis, supported by the findings in column (2) and (4).

Avdjiev et al. (2019) find that the cross-currency basis enlarges (more negative) when the dollar strengthens, therefore I extract the orthogonal part of the broad dollar to avoid any possible endogenous problem in the estimation. $\Delta Dollar\_Orth$, to some

[35]GDP per capita for Chile is controlled for imports specifications, while that for the counterparty country is controlled in in the exports estimations.

[36]I also run the trade volume regressions and find qualitatively consistent results, reported in Table A.2 in the appendix.

extent, represents the non-liquidity component of the dollar. Strikingly, a negative and statistically significant coefficient is found on $\Delta Dollar\_Orth$ after the CCB of Chile is incorporated in the regressions, suggesting that the dollar exchange rate negatively affects trade in addition to the liquidity channel. Noticeably, the coefficient on ΔCCB_Chile remains positive and significant, in line with the baseline result. Overall, it signals that the cross-currency basis is a better indicator for dollar liquidity in Chile.

4.2 Heterogeneity

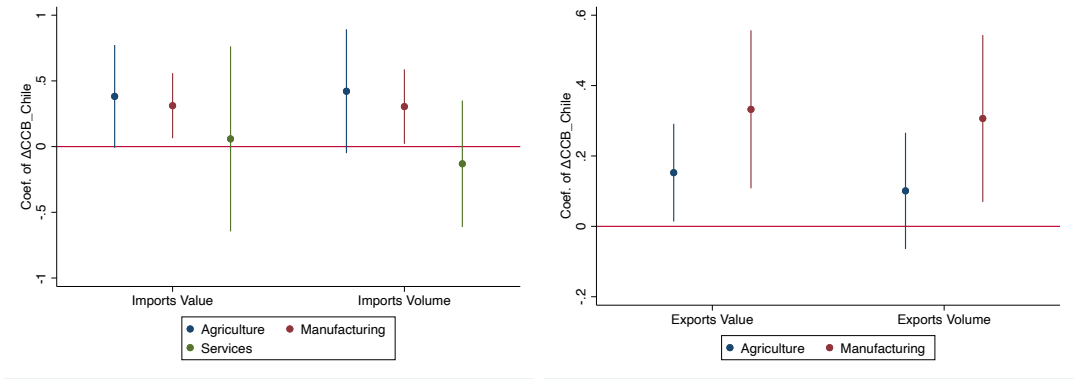
While it is found that dollar liquidity matters for trade in Chile as a whole, it does not suggest that dollar funding works in the same way for all firms and industries. In this section, I examine the heterogeneous effect of dollar liquidity on Chilean firms' trade from two dimensions, firm size and industry.

It is easy to think that large firms might react differently to liquidity shocks compared to small firms given their differences in capital structure, risk-bearing capability and dependence on external financing. To explore this effect, I impose an interaction term of the dollar liquidity (ΔCCB_Chile) with a firm size dummy, in three different specifications where the firm size dummy represents large, medium and small, respectively. Consistent with the baseline, I run the same regressions for both imports and exports in value and volume, and report the result in the appendix for the interest of space[37]. Interestingly, I find the coefficient on the interaction term for large size firm and dollar liquidity condition is positive and significant for all the 4 categories, suggesting that large firms will trade more when dollar becomes more accessible. In contrast, a negative effect is found for small firms. These results reconcile with the finding of Beck, Demirgüç-Kunt, and Maksimovic (2008) that small firms use less external bank financing than large firms, attenuating the effect of dollar liquidity on the former.

Trade activities from different industries have different characteristics and could respond to dollar liquidity differently. In this regard, I split the products into three categories, agriculture, manufacturing and services according to the International Standard

[37]See Table A.14 for details

Industrial Classification (ISIC). Subsequently, I estimate the specification (4) for the three categories[38], and plot their coefficient on ΔCCB_Chile for both imports and exports, as shown in Figure 2.



(a) Imports (b) Exports

Figure 2: Heterogeneity across products: agriculture, manufacturing and services

Evidently, the coefficient witnesses smaller magnitudes but larger error bands in importing services (left panel) for both value and volume despite being negative for the later. However, none of them is statistically significant, suggesting the little role dollar liquidity plays in service industry. This is not surprising given the difficulty nature of trading in services[39] compared to traditional manufacturing products, making it less affected by the dollar liquidity condition. With regard to the rest, I find that dollar liquidity access plays little role on trade in agriculture industries for Chilean firms while it matters for manufacturing industries.

4.3 How exchange rate regime shapes trade via dollar financing

Chile has adopted a flexible exchange rate regime with a inflation target since late 1990s, allowing the exchange rate to be adjusted by the market. China, by contrast, performs a relatively fixed exchange rate regime[40]. One might wonder whether exchange rate regime affects trade differently through the channel of dollar financing, and I take

[38]Due to the small sample in service industry for exports, I could only run the regression for agriculture and manufacturing industries.

[39] Aguiar and Gopinath (2005) treat only manufacturing sectors as tradable, and the rest including service sectors are non-tradable.

[40] Das (2019) discusses China's exchange rate regime evolution in details.

Table 8: How tenor of cross-currency basis matters on trade value: Chile versus China[†]

	Chile			China		
	(1) All counterparties	(2) US only	(3) Excluding US	(4) All counterparties	(5) US only	(6) Excluding US
			Panel A: Imports			
ΔCCB_1y	0.0878	0.0578	0.0948	0.0615**	0.0680***	0.0608**
	(0.2211)	(0.2077)	(0.2243)	(0.0073)	(0.0062)	(0.0074)
R^2	0.133	0.125	0.135	0.281	0.272	0.282
Observations	837,548	154,417	683,131	426,823	44,406	382,417
			Panel B: Exports			
ΔCCB_1y	0.0240	0.0643	0.0204	0.0383**	0.0403***	0.0381**
	(0.1976)	(0.1855)	(0.1990)	(0.0081)	(0.0022)	(0.0088)
R^2	0.125	0.133	0.124	0.293	0.296	0.293
Observations	132,212	10,583	121,629	717,338	64,735	652,603
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y

[†] This table reports the results for Chile and China, where the one-year tenor cross-currency basis is used for the respective local currency against the US dollar. The sample period is between 2009 and 2022 for Chile, while between 2009 and 2012 for China due to availability of the data. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

the advantage of firm level data from China's customs by looking at the effect of dollar liquidity on Chinese firms' trade.

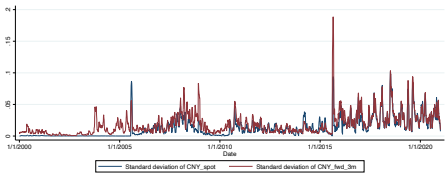
Instead of examining the three-month tenor, I focus on the one-year tenor of cross-currency basis of Chinese Yuan (CNY) vis-à-vis the US dollar, and estimate the regression for China as the baseline (4) for the period between 2009 and 2012 when the exchange rate remains less flexible.[41]. The corresponding estimation results for trade value[42] are shown in the right panel of Table 8, whose left panel reports the same estimations for Chile with a one-year CCB indicator.

Surprisingly, the coefficient on ΔCCB_1y is both positive and statistically significant throughout all the specifications for Chinese firms, whereas it is insignificant (although positive) for Chile. These contrasting results between the two countries indicates how exchange rate regime affects trade through dollar funding at the FX market. To show this, I plot the volatility of the spot and forward exchange rates for both Chinese Yuan and Chilean Peso, as illustrated in Figure 3.

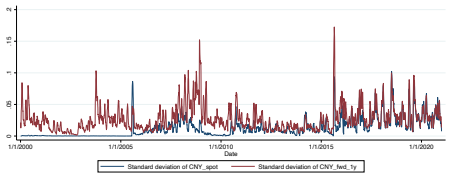
[41] I focus on CCB of CNY against the USD at the 1-year tenor. China conducts a regime in between flexible and fixed, implying the spot and forward exchange rates for CNY do not vary too much in the short run. Alternatively, I also check the 3-month tenor CCB for China and find qualitatively consistent results. This result is available on request.

[42] The trade volume results are reported in the appendix for the interest of space, which echoes the findings here. See Table A.4 for details.

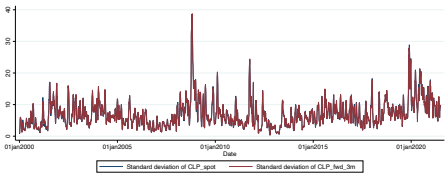
In theory, the emergence of cross-currency basis could be considered as the disequilibrium of the exchange rate. If the exchange rate is at its long-term equilibrium, the covered interest rate parity holds and CCB vanishes. In Chile, the flexible regime allows its exchange rate to more quickly adjust closer to its equilibrium as the forward rate adjusts with similar magnitude with the spot rate, as shown in 3 (c). This explains why the shorter tenor[43] CCB matters to trade. In China, however, the less flexibility in its exchange rate takes longer time to adjust itself to the long-term equilibrium, as demonstrated in Figure 3 (a) and (b) where the one-year forward rate adjusts with a larger magnitude compared to the three-month one. Therefore, the effect of CCB with the one-year tenor works for trade in China as well[44]. To sum, this exercise suggests that easier dollar liquidity access from the FX market increases firms' trade in China as well, providing further evidence to the effect of CCB on firms' trade beyond the scope of Chile.



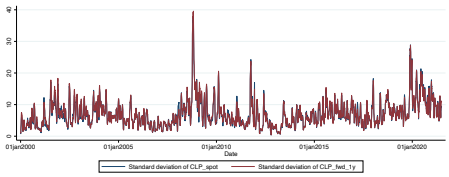
(a) CNY: spot versus 3-month forward ER



(b) CNY: spot versus 1-year forward ER



(c) CLP: spot versus 3-month forward ER



(d) CLP: spot versus 1-year forward ER

Figure 3: The (30-day rolling window) volatility for the spot and forward exchange rates, CNY and CLP. Each rate is the bilateral rate between the indicated currency against the USD.

[43]Both the three-month and one-month tenor CCB positively affects trade, as shown in Section 3.2.

[44]Another potential explanation is that the cost of borrowing is lower at the one-year tenor than the three-month one during the working sample period from 2009 to 2012, as depicted in Figure A.2.

5 Conclusion

With its hegemony in the global financial market, the US dollar has the potential to affect real output, investment and trade activities not only in the US, but beyond the border of the country. This paper sheds light on examining the spillover effects of dollar liquidity access in a non-US country with a macro variable—cross-currency basis—on the micro firm level trade activities in Chile after the global financial crisis.

I find that an easier access to dollar liquidity gives rises to both imports and exports for firms in Chile. This effect persists either when firms' dollar exposure is identified through a Bartik like invoicing currency share at the transaction level or another Bartik instrument methodology where the firm level sector intensity is instrumented with two plausible exogenous lagged sector intensity indicators at the country level. This result stays robust after a series of checks.

When delving deeper, I notice that firms trading more intensively with the US are less affected by the dollar liquidity access, especially for exporting firms. IT reconciles with the fact that exporters could obtain dollar liquidity directly from sales and therefore weakens the role that dollar access from the FX market plays. Further analysis shows that the country specific dollar liquidity proxy —the cross-currency basis of CLP against the USD—better explains firms' trade variations in Chile than a more general indicator, the broad dollar index. However, the latter has another component that affects Chile's trade besides the scope of the liquidity. Another exercise with Chinese firms finds consistent result, providing further evidence on how the dollar liquidity spillovers to the rest of the world by showing that the effects of cross-currency basis on trade applies not only in Chile but another country as well.

This work looks into the role that the US dollar plays at the intersection of international finance and international trade, and it suggests that trade is materially affected by the dollar liquidity access during the post-crisis period, partly reconciling with the trade collapse observed after the GFC (Chor and Manova 2012). Future study might take a look at how the dollar exchange rate might affect trade through the component orthogonal to its liquidity channel.

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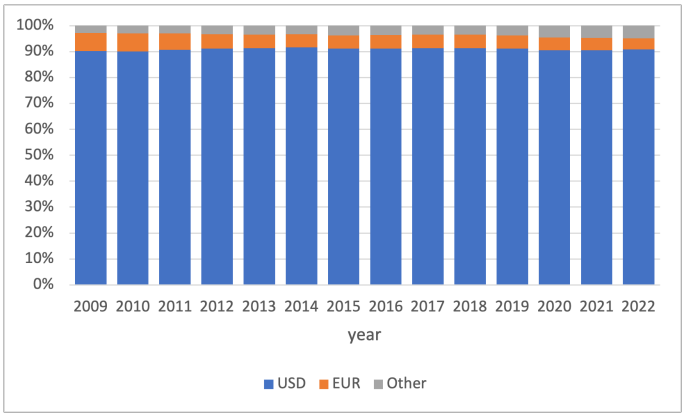
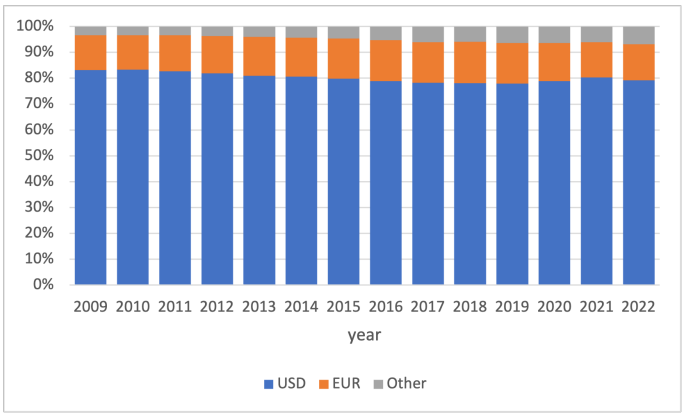
Online Appendix (Not for Publication)



(a) Currency share: Exports



(b) Currency share: Imports

Figure A.1: Percentage of currencies used for international trade in Chilean firms

Table A.1: Effects of dollar liquidity on Chilean firm's trade volumes, conditional on firms' trade intensity with the US†

	Imports			**Exports**		
	(1) All counterparties	(2) US only	(3) Excluding US	(4) All counterparties	(5) US only	(6) Excluding US
US intensity × ΔCCB_Chile	-0.0644	0.0277	-0.1041	-0.1372**	0.0618	-0.2212***
	(0.0438)	(0.0818)	(0.0867)	(0.0450)	(0.1193)	(0.0602)
US intensity	0.1464	1.1683***	-0.8179***	-0.1335	1.0824***	-0.8576***
	(0.0911)	(0.1370)	(0.1616)	(0.0947)	(0.1796)	(0.1094)
ΔCCB_Chile	0.3165*	0.2218*	0.3348*	0.2921**	0.1702	0.3092**
	(0.1465)	(0.1071)	(0.1580)	(0.1147)	(0.1763)	(0.1157)
Fixed effects:						
country-firm-product	Y	Y	Y	Y	Y	Y
R^2	0.144	0.132	0.151	0.146	0.133	0.153
Observations	604,803	154,417	450,386	85,521	10,583	74,938

† This table reports the regression between yearly change in trade (both imports and exports) volumes from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. US intensity is a yearly varying ratio of a firm's trade value with the US to its total trade value. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: The effects of dollar liquidity on trade volume in Chile: broad dollar versus 3-month CCB†

	Imports		Exports	
	(1)	(2)	(3)	(4)
ΔCCB_Chile		0.4095***		0.3107***
		(0.0445)		(0.0534)
$\Delta Dollar$	-0.5480		-0.6728	
	(0.4478)		(0.4370)	
$\Delta Dollar\_Orth$		-1.4104***		-1.3924**
		(0.2644)		(0.4742)
Fixed effects:				
country-firm-product	Y	Y	Y	Y
R^2	0.133	0.140	0.126	0.135
Observations	801,720	801,720	128,204	128,203

† This table reports the regression between yearly change in trade (both imports and exports) volumes of firms in Chile and yearly change of the US dollar index, and the yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. Both GDP per capita in Chile for exports (or GDP per capita in the destination country for imports) and trade openness are controlled. The sample starts from 2009 to 2022. Fixed effect at country-firm-product level is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.3: Effects of cross-currency basis on Chile's trade volumes, pre-crisis period†

	All counterparties			US only			Excluding US		
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	Quantity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Imports Volume									
ΔCCB_Chile	-0.1593	-0.1493	-0.1772	0.0090	0.0502	-0.0658	-0.2094	-0.2073	-0.2134
	(0.1745)	(0.1653)	(0.1919)	(0.1244)	(0.1155)	(0.1543)	(0.1920)	(0.1836)	(0.2089)
R^2	0.220	0.219	0.224	0.205	0.206	0.208	0.225	0.224	0.231
Observations	231,387	154,208	72,231	53,621	35,128	17,934	177,766	119,080	54,297
Exports Volume									
ΔCCB_Chile	-0.0997	-0.1571	0.1881	-0.0495	-0.0556	0.4328	-0.1056	-0.1688	0.1321
	(0.1121)	(0.1219)	(0.2036)	(0.2317)	(0.2469)	(0.3960)	(0.1026)	(0.1126)	(0.1974)
R^2	0.250	0.257	0.233	0.246	0.265	0.220	0.251	0.255	0.236
Observations	41,678	31,613	3,903	4,524	3,336	752	37,154	28,277	3,151
Fixed effects:									
country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

† This table reports the regression between yearly change in imports and exports from firms in Chile and lagged yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample period is restricted between 2003 and 2007. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: How tenor of cross-currency basis matters on trade volume: Chile versus China†

	Chile			China		
	(1) All counterparties	(2) US only	(3) Excluding US	(4) All counterparties	(5) US only	(6) Excluding US
			Panel A: Imports			
ΔCCB_1y	0.1266	0.0795	0.1375	0.0676**	0.0724**	0.0670**
	(0.2238)	(0.2145)	(0.2261)	(0.0122)	(0.0134)	(0.0121)
R^2	0.134	0.123	0.136	0.272	0.258	0.274
Observations	837,548	154,417	683,131	426,823	44,406	382,417
			Panel B: Exports			
ΔCCB_1y	0.0556	0.0855	0.0530	0.0510*	0.0573**	0.0504*
	(0.1872)	(0.1747)	(0.1888)	(0.0122)	(0.0120)	(0.0123)
R^2	0.122	0.119	0.122	0.292	0.292	0.291
Observations	132,213	10,583	121,630	717,338	64,735	652,603
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y

† This table reports the results for Chile and China, where the one-year tenor cross-currency basis is used for the respective local currency against the US dollar. The sample period is between 2009 and 2022 for Chile, while between 2009 and 2012 for China due to availability of the data. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: Sector classification correspondence to HS 2-digit products†

HS2	**Sector**
01-05	Animal & animal products
06-15	Vegetable products
16-24	Food stuffs
25-26	Mineral products
27	Fuels
28-38	Chemicals & allied industries
39-40	Plastics or rubbers
41-43	Raw hides, skins, leather and furs
44-49	Wood & wood products
50-63	Textiles
64-67	Footwear
68-71	Stone or glass
72-83	Metals
84-85	Machinery and electrical products
86-89	Transportation
90-97	Miscellaneous

† Sector classification follows the rule from WITS.

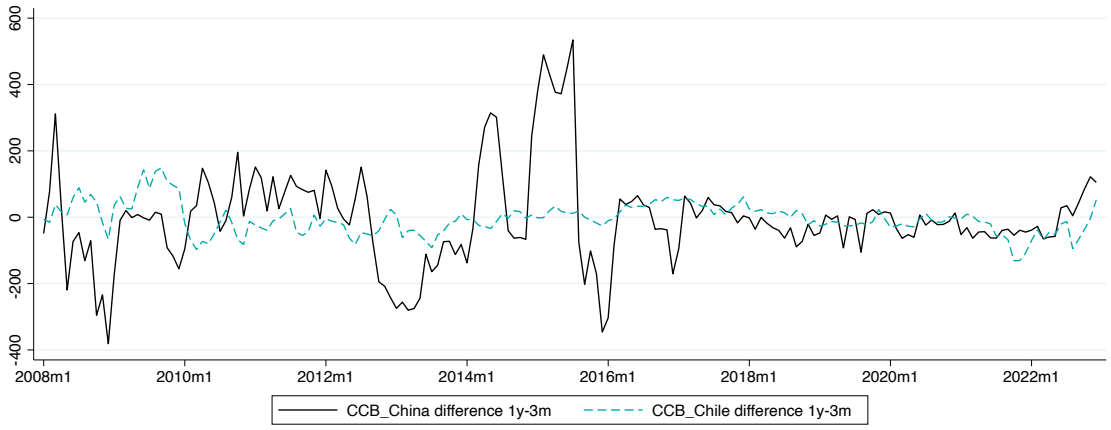


Figure A.2: The difference between one-year and three-month CCB for CNY and CLP

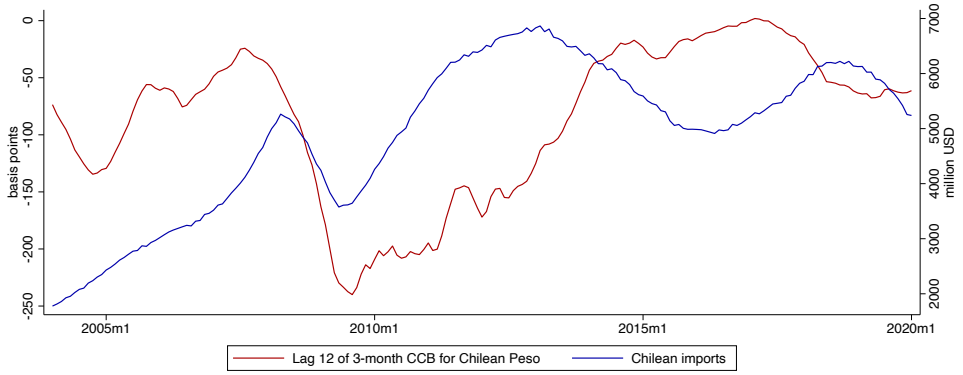


Figure A.3: Chilean imports and CCB_Chile

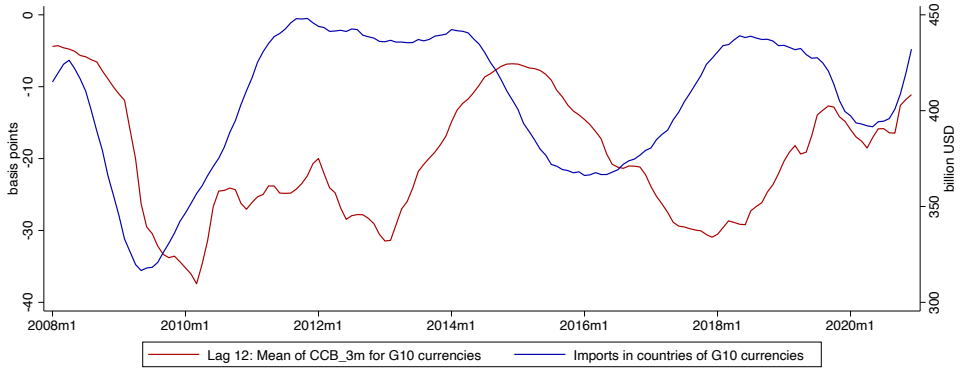


Figure A.4: G10 imports and G10 CCB_3m

Table A.6: Appendix: additional sensitivity of cross-currency basis and trade to further variations in standard errors clustering besides the firm and year level[†]

	Value			Volume		
	(1) currency	(2) unit	(3) currency & unit	(4) currency	(5) unit	(6) currency & unit
Panel A: Imports						
ΔCCB_Chile	0.3156***	0.3156***	0.3156***	0.3088**	0.3088**	0.3088***
	(0.0829)	(0.0927)	(0.0558)	(0.1019)	(0.1033)	(0.0667)
R^2	0.138	0.138	0.138	0.136	0.136	0.136
Observations	837,991	837,991	837,991	837,991	837,991	837,991
Panel B: Exports						
ΔCCB_Chile	0.3186***	0.3186***	0.3186***	0.2863***	0.2863***	0.2863***
	(0.0352)	(0.0724)	(0.0280)	(0.0438)	(0.0793)	(0.0355)
R^2	0.136	0.136	0.136	0.129	0.129	0.129
Observations	132,213	132,213	132,213	132,213	132,213	132,213
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y

[†] This table reports the regression between yearly change in trade value and volume from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm, year and the respective additional level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.7: Appendix for volume: Sensitivity of cross-currency basis on trade to variations in sample coverage, variable construction, and estimation methodologies†

	CCB tenor: 1-month	CCB tenor: 1-year	Sub: no dom secs	Sub: excluding Covid	Est: quarterly	Est: currency FE
	(1)	(2)	(3)	(4)	(5)	(6)
Imports						
ΔCCB_Chile	0.3344***	0.1268	0.3241*	0.3200*	0.0546**	0.3149*
	(0.0999)	(0.2238)	(0.1650)	(0.1604)	(0.0244)	(0.1598)
R^2	0.138	0.134	0.135	0.110	0.046	0.140
Observations	837,991	837,991	558,730	768,348	1,464,895	833,729
Exports						
ΔCCB_Chile	0.2942***	0.0556	0.2846**	0.2866**	0.0511	0.2900**
	(0.0617)	(0.1872)	(0.1150)	(0.1177)	(0.0310)	(0.1180)
R^2	0.132	0.122	0.129	0.129	0.053	0.131
Observations	132,214	132,214	121,215	132,171	283,720	131,804
	Est: unit FE	Est: currency-unit FE	Est: Driscoll-Kraay	Cluster: country	Cluster: product	Cluster: country & product
	(1)	(2)	(3)	(4)	(5)	(6)
Imports						
ΔCCB_Chile	0.3152*	0.3209*	0.3209	0.3088*	0.3088*	0.3088*
	(0.1600)	(0.1626)	(0.1838)	(0.1480)	(0.1528)	(0.1436)
R^2	0.136	0.139		0.136	0.136	0.136
Observations	817,682	812,372	837,991	837,991	837,991	837,991
Exports						
ΔCCB_Chile	0.2874**	0.2913**	0.2913**	0.2863**	0.2863**	0.2863**
	(0.1157)	(0.1180)	(0.1266)	(0.1129)	(0.1141)	(0.1113)
R^2	0.132	0.135		0.129	0.129	0.129
Observations	131,296	130,863	132,214	132,214	132,214	132,214

† This table reports the regression between yearly change in imports and exports volume from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product level fixed effect (where not specified) is controlled, and robust standard errors clustered at firm and year level (where not specified) are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.8: The effects of dollar liquidity with firms' US dollar exposure and dollar liquidity to trade in Chile†

	All			US only			Excluding US		
	(1) All units	(2) Weight	(3) Quantity	(4) All units	(5) Weight	(6) Quantity	(7) All units	(8) Weight	(9) Quantity
Panel A: Imports									
Value									
Dollar exposure · ΔCCB_Chile	0.3388**	0.3370**	0.3608**	0.3203**	0.3235**	0.3253*	0.3443**	0.3410**	0.3720**
	(0.1504)	(0.1513)	(0.1548)	(0.1420)	(0.1432)	(0.1489)	(0.1538)	(0.1544)	(0.1585)
R^2	0.136	0.134	0.136	0.128	0.124	0.126	0.138	0.137	0.139
Volume									
Dollar exposure · ΔCCB_Chile	0.3383*	0.3381*	0.3588**	0.3368**	0.3403**	0.3374*	0.3387*	0.3375*	0.3656**
	(0.1601)	(0.1638)	(0.1582)	(0.1517)	(0.1525)	(0.1560)	(0.1639)	(0.1684)	(0.1607)
R^2	0.136	0.132	0.139	0.126	0.124	0.123	0.138	0.134	0.142
Observations	837,548	555,831	248,520	154,417	100,012	48,751	683,131	455,819	199,769
Panel B: Exports									
Value									
Dollar exposure · ΔCCB_Chile	0.3306**	0.3163**	0.3903**	0.2668*	0.2228	0.4173**	0.3368**	0.3248**	0.3856**
	(0.1142)	(0.1096)	(0.1264)	(0.1449)	(0.1642)	(0.1466)	(0.1124)	(0.1062)	(0.1369)
R^2	0.135	0.140	0.140	0.138	0.153	0.119	0.135	0.139	0.143
Volume									
Dollar exposure · ΔCCB_Chile	0.2995**	0.2810**	0.3506**	0.2204	0.1819	0.3432	0.3072**	0.2899**	0.3519**
	(0.1230)	(0.1203)	(0.1404)	(0.1601)	(0.1741)	(0.1966)	(0.1204)	(0.1167)	(0.1456)
R^2	0.128	0.134	0.130	0.122	0.136	0.102	0.129	0.133	0.134
Observations	132,194	95,295	11,523	10,574	7,472	1,607	121,620	87,823	9,916
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

† This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.9: The effects of dollar liquidity with firms' dollar exposure to trade in Chile[†]

	All			US only			Excluding US		
	(1) All units	(2) Weight	(3) Quantity	(4) All units	(5) Weight	(6) Quantity	(7) All units	(8) Weight	(9) Quantity
Panel A: Imports									
Value									
USD × ΔCCB_Chile	0.2989*	0.3010*	0.3102*	0.2750*	0.2807*	0.2727*	0.3063*	0.3072*	0.3227*
	(0.1438)	(0.1452)	(0.1467)	(0.1356)	(0.1379)	(0.1392)	(0.1471)	(0.1481)	(0.1510)
R^2	0.136	0.134	0.136	0.128	0.123	0.126	0.138	0.137	0.139
Volume									
USD × ΔCCB_Chile	0.2942*	0.2996*	0.3014*	0.2872*	0.2917*	0.2864*	0.2963*	0.3020*	0.3064*
	(0.1536)	(0.1585)	(0.1497)	(0.1428)	(0.1476)	(0.1395)	(0.1580)	(0.1629)	(0.1550)
R^2	0.135	0.132	0.139	0.126	0.124	0.123	0.138	0.134	0.142
Observations	837,548	555,831	248,520	154,417	100,012	48,751	683,131	455,819	199,769
Panel B: Exports									
Value									
USD × ΔCCB_Chile	0.3148**	0.3064**	0.3789**	0.2583*	0.2117	0.4169**	0.3203**	0.3151**	0.3720**
	(0.1084)	(0.1063)	(0.1226)	(0.1401)	(0.1616)	(0.1388)	(0.1064)	(0.1028)	(0.1334)
R^2	0.135	0.140	0.140	0.139	0.152	0.119	0.135	0.139	0.143
Volume									
USD × ΔCCB_Chile	0.2858**	0.2710**	0.3478**	0.2136	0.1647	0.3750*	0.2928**	0.2807**	0.3428**
	(0.1165)	(0.1167)	(0.1351)	(0.1552)	(0.1714)	(0.1911)	(0.1137)	(0.1129)	(0.1407)
R^2	0.128	0.133	0.130	0.122	0.136	0.104	0.129	0.133	0.134
Observations	132,213	95,305	11,523	10,583	7,477	1,607	121,630	87,828	9,916
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

[†] This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.10: Robust: The effects of dollar liquidity with currency liquidity on firms' trade in Chile†

	All			US only			Excluding US		
	(1) All units	(2) Weight	(3) Quantity	(4) All units	(5) Weight	(6) Quantity	(7) All units	(8) Weight	(9) Quantity
Panel A: Imports									
Value									
Currency × ΔCCB_Chile	0.3301*	0.3333*	0.3404*	0.2770*	0.2826*	0.2751*	0.3452**	0.3475**	0.3604**
	(0.1509)	(0.1518)	(0.1556)	(0.1354)	(0.1378)	(0.1389)	(0.1559)	(0.1562)	(0.1623)
R^2	0.137	0.135	0.137	0.128	0.124	0.126	0.140	0.138	0.140
Volume									
Currency × ΔCCB_Chile	0.3228*	0.3284*	0.3299*	0.2890*	0.2941*	0.2878*	0.3324*	0.3381*	0.3427*
	(0.1674)	(0.1728)	(0.1627)	(0.1428)	(0.1476)	(0.1395)	(0.1754)	(0.1808)	(0.1714)
R^2	0.136	0.133	0.139	0.126	0.124	0.123	0.139	0.135	0.143
Observations	837,548	555,831	248,520	154,417	100,012	48,751	683,131	455,819	199,769
Panel B: Exports									
Value									
Currency × ΔCCB_Chile	0.3233**	0.3100**	0.3860**	0.2580*	0.2115	0.4146**	0.3295**	0.3189**	0.3809**
	(0.1092)	(0.1067)	(0.1256)	(0.1403)	(0.1617)	(0.1387)	(0.1073)	(0.1034)	(0.1369)
R^2	0.136	0.140	0.140	0.139	0.152	0.119	0.136	0.139	0.144
Volume									
Currency × ΔCCB_Chile	0.2923**	0.2736**	0.3505**	0.2118	0.1638	0.3667*	0.2999**	0.2836**	0.3476**
	(0.1185)	(0.1177)	(0.1386)	(0.1554)	(0.1716)	(0.1894)	(0.1158)	(0.1140)	(0.1451)
R^2	0.129	0.134	0.130	0.122	0.136	0.103	0.129	0.133	0.135
Observations	132,213	95,305	11,523	10,583	7,477	1,607	121,630	87,828	9,916
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

† This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.11: Sector intensity and trade[†]
Independent variable: 100 × Sector intensity · ΔCCB_Chile

	All			US only			Excluding US		
	(1) OLS	(2) IV	(3) 2SLS	(4) OLS	(5) IV	(6) 2SLS	(7) OLS	(8) IV	(9) 2SLS
Imports volume									
Sector intensity × ΔCCB_Chile	0.1059***	1.9665*	1.9797*	0.1662**	3.1890*	3.1873*	0.0989**	1.8079*	1.8302*
	(0.0336)	(0.9228)	(0.9405)	(0.0728)	(1.4346)	(1.4364)	(0.0356)	(0.8608)	(0.8803)
Observations	837,548	801,276	801,276	154,417	148,031	148,031	683,131	653,245	653,245
F	9.93	4.61	4.43	5.21	5.07	4.92	7.70	4.46	4.32
Cragg-Donald F		13,024.22	7,006.80		1,464.95	750.94		11,812.36	6,390.17
Kleibergen-Paap rk LM		4.112**	4.908*		4.084**	5.156*		4.106**	4.866*
Hansen J			0.035			0.014			0.111
Exports volume									
Sector intensity × ΔCCB_Chile	0.0253***	0.2067**	0.2019**	0.0221**	0.1980	0.1618	0.0255***	0.2071**	0.2042**
	(0.0069)	(0.0894)	(0.0840)	(0.0097)	(0.1842)	(0.1709)	(0.0069)	(0.0857)	(0.0808)
Observations	132,212	132,193	132,193	10,583	10,572	10,572	121,629	121,621	121,621
F	13.55	5.34	5.78	5.18	1.16	0.90	13.82	5.84	6.38
Cragg-Donald F		6,524.04	3,606.69		403.88	220.20		6,095.19	3,372.38
Kleibergen-Paap rk LM		3.26*	4.72*		3.43*	4.26		3.24*	4.72*
Hansen J			0.33			1.20			0.15

[†] This table reports the regression between yearly change in imports and exports value from firms in Chile and their trade in sectoral intensity's exposure to the dollar liquidity condition, measured as the yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. *Sectorintensity* is a ratio of certain frim's trade value in one particular sector to the total trade value of this sector, which is instrumented with the 10-year lagged trade sectoral intensity at the country level (IV specifications) and both the 10-year and 5-year lagged trade sectoral intensity at the country level (2SLS specifications). Test statistics for instrument quality are the Kleibergen-Paap rk LM statistic, Kleibergen-Paap rk F statistic, and Hansen J statistic, corresponding to tests for underidentification test, weak identification, and overidentification, respectively. The 10% maximal IV size critical value of weak identification is 19.9 for 2SLS specifications, and 16.4 for IV specifications. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.12: Robust: The effects of dollar liquidity on firms' trade in Chile† (triple interaction)

	All			US only			Excluding US		
	(1) All units	(2) Weight	(3) Quantity	(4) All units	(5) Weight	(6) Quantity	(7) All units	(8) Weight	(9) Quantity
Panel A: Imports									
Value									
Sector intensity·ΔCCB_Chile· USD	9.55**	8.80**	14.25**	14.78*	14.02*	21.45*	8.88**	8.01**	13.70**
	(3.15)	(3.02)	(5.61)	(6.79)	(7.28)	(10.29)	(3.22)	(3.09)	(5.40)
R^2	0.133	0.130	0.133	0.125	0.120	0.123	0.135	0.133	0.136
Volume									
Sector intensity·ΔCCB_Chile· USD	10.01***	9.15**	14.85**	16.34*	15.27*	24.44**	9.20**	8.23**	14.12**
	(3.17)	(3.14)	(4.88)	(7.43)	(8.00)	(9.49)	(3.32)	(3.29)	(4.78)
R^2	0.133	0.130	0.137	0.124	0.122	0.121	0.136	0.132	0.141
Observations	837,548	555,831	248,520	154,417	100,012	48,751	683,131	455,819	199,769
Panel B: Exports									
Value									
Sector intensity·ΔCCB_Chile· USD	2.70***	2.47***	3.37	2.36**	2.04**	2.86	2.72***	2.49***	3.45
	(0.68)	(0.64)	(2.20)	(0.79)	(0.88)	(1.68)	(0.68)	(0.64)	(2.32)
R^2	0.127	0.132	0.133	0.133	0.149	0.111	0.126	0.130	0.137
Volume									
Sector intensity·ΔCCB_Chile· USD	2.49***	2.28***	2.99	2.23**	1.73*	4.20	2.50***	2.31***	2.77
	(0.70)	(0.70)	(1.85)	(0.97)	(0.96)	(2.78)	(0.70)	(0.71)	(1.78)
F	2.63	2.49	0.01	2.32	1.50	5.63	2.43	2.40	0.14
R^2	0.123	0.128	0.126	0.119	0.134	0.099	0.123	0.127	0.130
Observations	132,212	95,304	11,523	10,583	7,477	1,607	121,629	87,827	9,916
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

† This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.13: Robust: The effects of dollar liquidity on firms' trade in Chile† (with currency FE)

	All			US only			Excluding US		
	(1) All units	(2) Weight	(3) Quantity	(4) All units	(5) Weight	(6) Quantity	(7) All units	(8) Weight	(9) Quantity
Panel A: Imports									
Value									
ΔCCB_Chile	0.3216**	0.3251**	0.3293**	0.2796*	0.2860*	0.2740*	0.3311**	0.3339**	0.3428**
	(0.1403)	(0.1408)	(0.1462)	(0.1341)	(0.1364)	(0.1380)	(0.1422)	(0.1422)	(0.1493)
R^2	0.142	0.140	0.141	0.130	0.125	0.127	0.145	0.144	0.144
Volume									
ΔCCB_Chile	0.3148*	0.3196*	0.3199*	0.2935*	0.2986*	0.2896*	0.3196*	0.3244*	0.3273*
	(0.1598)	(0.1648)	(0.1552)	(0.1417)	(0.1461)	(0.1393)	(0.1646)	(0.1698)	(0.1603)
R^2	0.140	0.137	0.142	0.127	0.126	0.124	0.144	0.140	0.146
Observations	833,359	552,342	246,858	154,163	99,761	48,653	679,196	452,581	198,205
Panel B: Exports									
Value									
ΔCCB_Chile_3m	0.3221**	0.3109**	0.3787**	0.2557*	0.2093	0.4060**	0.3281**	0.3199**	0.3740**
	(0.1079)	(0.1072)	(0.1257)	(0.1415)	(0.1625)	(0.1375)	(0.1060)	(0.1041)	(0.1363)
R^2	0.139	0.143	0.141	0.138	0.152	0.118	0.139	0.142	0.145
Volume									
ΔCCB_Chile_3m	0.2901**	0.2727**	0.3458**	0.2097	0.1616	0.3579*	0.2972**	0.2824**	0.3437**
	(0.1181)	(0.1187)	(0.1381)	(0.1574)	(0.1722)	(0.1890)	(0.1154)	(0.1152)	(0.1432)
F	2.63	2.49	0.01	2.32	1.50	5.63	2.43	2.40	0.14
R^2	0.131	0.136	0.130	0.121	0.136	0.100	0.132	0.136	0.135
Observations	131,803	95,038	11,487	10,564	7,465	1,604	121,239	87,573	9,883
Fixed effects: country-firm-product-currency	Y	Y	Y	Y	Y	Y	Y	Y	Y

† This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months. The sample starts from 2009 to 2022. Country-firm-product-currency level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.14: The effects of dollar liquidity on trade, conditional on firms' size

	Value			Volume		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Imports						
ΔCCB_Chile	0.1837	0.2504*	0.2513*	0.1454	0.2342	0.2331
	(0.1169)	(0.1190)	(0.1250)	(0.1354)	(0.1357)	(0.1406)
large=1	0.0199			0.0299		
	(0.0254)			(0.0207)		
large=1 × ΔCCB_Chile	0.0751*			0.0986***		
	(0.0383)			(0.0311)		
medium=1		0.0237			0.0125	
		(0.0296)			(0.0287)	
medium=1 × ΔCCB_Chile		-0.0445			-0.0680	
		(0.0454)			(0.0401)	
small=1			-0.0985**			-0.1003**
			(0.0399)			(0.0331)
small=1 × ΔCCB_Chile			-0.1128			-0.1298**
			(0.0685)			(0.0554)
R^2	0.006	0.006	0.006	0.004	0.004	0.004
Observations	909,629	909,629	909,629	909,629	909,629	909,629
Panel B: Exports						
ΔCCB_Chile	0.1638**	0.2608***	0.2578***	0.1513**	0.2183**	0.2201**
	(0.0659)	(0.0777)	(0.0777)	(0.0637)	(0.0918)	(0.0901)
large=1	0.0301			0.0344		
	(0.0230)			(0.0275)		
large=1 × ΔCCB_Chile	0.1102***			0.0784*		
	(0.0201)			(0.0379)		
medium=1		-0.0063			-0.0130	
		(0.0150)			(0.0211)	
medium=1 × ΔCCB_Chile		-0.0755***			-0.0416	
		(0.0147)			(0.0311)	
small=1			-0.0556			-0.0535*
			(0.0313)			(0.0293)
small=1 × ΔCCB_Chile			-0.1471***			-0.1321**
			(0.0391)			(0.0492)
R^2	0.023	0.023	0.023	0.018	0.018	0.018
Observations	139,421	139,421	139,421	139,421	139,421	139,421
Fixed effects:						
country-product	Y	Y	Y	Y	Y	Y

† This table reports the regression between yearly change in imports and exports (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months, with an interaction term between CCB and firm size. A firm is regarded as a large importing (exporting) one if its total imports (exports) value in the sample period ranks the top 1/3. The bottom 1/3 are regarded as small firms, and the middle 1/3 classified as medium firms. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.15: The effects of dollar liquidity on trade, conditional on firms' size (with firm fixed effect)

	Value			Volume		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Imports						
ΔCCB_Chile	0.2698*	0.3196**	0.3191**	0.2433	0.3144*	0.3137*
	(0.1246)	(0.1379)	(0.1394)	(0.1499)	(0.1570)	(0.1584)
large=1 $\times$ ΔCCB_Chile	0.0539			0.0769**		
	(0.0335)			(0.0294)		
medium=1 $\times$ ΔCCB_Chile		-0.0360			-0.0510	
		(0.0296)			(0.0329)	
small=1 $\times$ ΔCCB_Chile			-0.0882			-0.1268*
			(0.0743)			(0.0629)
R^2	0.138	0.138	0.138	0.136	0.136	0.136
Observations	837,991	837,991	837,991	837,991	837,991	837,991
Panel B: Exports						
ΔCCB_Chile	0.2475**	0.3258**	0.3276**	0.2431*	0.2874**	0.2946**
	(0.1042)	(0.1058)	(0.1062)	(0.1112)	(0.1176)	(0.1162)
large=1 $\times$ ΔCCB_Chile	0.0895***			0.0543		
	(0.0286)			(0.0445)		
medium=1 $\times$ ΔCCB_Chile		-0.0464			-0.0070	
		(0.0326)			(0.0473)	
small=1 $\times$ ΔCCB_Chile			-0.1784**			-0.1664**
			(0.0624)			(0.0642)
R^2	0.136	0.136	0.136	0.129	0.129	0.129
Observations	132,213	132,213	132,213	132,214	132,214	132,214
Fixed effects:						
country-firm-product	Y	Y	Y	Y	Y	Y

† This table reports the regression between yearly change in imports and exports (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months, with an interaction term between CCB and firm size. A firm is regarded as a large importing (exporting) one if its total imports (exports) value in the sample period ranks the top 1/3. The bottom 1/3 are regarded as small firms, and the middle 1/3 classified as medium firms. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.16: Financing channel for Chilean firms: trade in Chile and 1-year CCB 2009-2022

	All			US only			Excluding US		
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	Quantity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Imports									
Value									
ΔCCB_Chile_1y	0.0877	0.0991	0.0669	0.0591	0.0735	0.0268	0.0944	0.1049	0.0769
	(0.2230)	(0.2234)	(0.2334)	(0.2077)	(0.2089)	(0.2165)	(0.2266)	(0.2267)	(0.2380)
R^2	0.136	0.133	0.136	0.127	0.120	0.124	0.138	0.136	0.139
Volume									
ΔCCB_Chile_1y	0.1282	0.1466	0.0987	0.0802	0.0838	0.0807	0.1393	0.1608	0.1031
	(0.2246)	(0.2271)	(0.2310)	(0.2142)	(0.2186)	(0.2163)	(0.2271)	(0.2288)	(0.2356)
R^2	0.137	0.133	0.139	0.126	0.123	0.122	0.140	0.136	0.143
Observations	845,871	559,556	251,829	154,911	100,115	49,001	690,960	459,441	202,828
Panel B: Exports									
Value									
ΔCCB_Chile_1y	0.0202	-0.0024	0.0809	0.0620	0.0083	0.2476	0.0165	-0.0034	0.0535
	(0.1987)	(0.1959)	(0.2228)	(0.1891)	(0.1944)	(0.1692)	(0.1999)	(0.1968)	(0.2358)
R^2	0.126	0.131	0.131	0.134	0.150	0.114	0.125	0.129	0.134
Volume									
ΔCCB_Chile_1y	0.0516	0.0326	0.0220	0.0851	0.0048	0.3157	0.0486	0.0350	-0.0263
	(0.1880)	(0.1854)	(0.2155)	(0.1787)	(0.1877)	(0.1746)	(0.1893)	(0.1860)	(0.2274)
R^2	0.123	0.128	0.127	0.120	0.135	0.100	0.123	0.127	0.132
Observations	131,828	95,134	11,700	10,594	7,479	1,616	121,234	87,655	10,084
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of one year. The sample starts from 2009 to 2022. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.17: Financing channel for Chinese firms: imports in China and 1-year CCB 2009-2012

	All			US only			Excluding US		
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	Quantity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Imports									
Value									
ΔCCB_China_1y	0.0626***	0.0612***	0.0762***	0.0710***	0.0688***	0.0798***	0.0616***	0.0603***	0.0757***
	(0.0082)	(0.0082)	(0.0106)	(0.0086)	(0.0086)	(0.0130)	(0.0081)	(0.0082)	(0.0105)
R^2	0.251	0.263	0.285	0.235	0.245	0.261	0.253	0.265	0.288
Volume									
ΔCCB_China_1y	0.0665***	0.0687***	0.0643***	0.0726***	0.0760**	0.0604***	0.0658***	0.0678***	0.0647***
	(0.0105)	(0.0117)	(0.0040)	(0.0124)	(0.0133)	(0.0103)	(0.0103)	(0.0115)	(0.0036)
R^2	0.242	0.249	0.309	0.222	0.232	0.268	0.244	0.251	0.315
Observations	488,129	373,390	76,784	52,759	41,823	8,546	435,370	331,567	68,238
Panel B: Exports									
Value									
ΔCCB_China_1y	0.0378**	0.0374***	0.0406**	0.0402***	0.0367***	0.0526**	0.0376**	0.0375**	0.0395**
	(0.0074)	(0.0058)	(0.0093)	(0.0035)	(0.0040)	(0.0153)	(0.0078)	(0.0067)	(0.0087)
R^2	0.268	0.264	0.322	0.262	0.267	0.309	0.268	0.263	0.323
Volume									
ΔCCB_China_1y	0.0485**	0.0486**	0.0494***	0.0535***	0.0512***	0.0623**	0.0480**	0.0483**	0.0482***
	(0.0097)	(0.0099)	(0.0077)	(0.0091)	(0.0072)	(0.0134)	(0.0097)	(0.0102)	(0.0071)
R^2	0.266	0.259	0.325	0.256	0.257	0.309	0.267	0.259	0.327
Observations	811,019	524,980	232,056	79,908	53,600	21,630	731,111	471,380	210,426
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of one year. The sample starts from 2009 to 2012. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.18: Financing channel for Chinese firms: imports in China and 1-year CCB 2011-2014

	All			US only			Excluding US		
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	Quantity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Imports									
Value									
ΔCCB_China_1y	-0.0506	-0.0512*	0.0987	-0.0492	-0.0508	0.4506	-0.0508	-0.0513*	0.0785
	(0.0179)	(0.0167)	(0.0558)	(0.0190)	(0.0176)	(0.3442)	(0.0178)	(0.0167)	(0.0545)
R^2	0.268	0.267	0.332	0.259	0.259	0.320	0.269	0.269	0.340
Volume									
ΔCCB_China_1y	-0.0089	-0.0103	0.1585	-0.0083	-0.0095	0.4347	-0.0090	-0.0104	0.1426
	(0.0062)	(0.0076)	(0.0565)	(0.0070)	(0.0087)	(.)	(0.0063)	(0.0076)	(0.0538)
R^2	0.262	0.263	0.371	0.248	0.250	0.395	0.264	0.265	0.370
Observations	454,863	390,216	358	51,398	45,281	19	403,465	344,935	339
Panel B: Exports									
Value									
ΔCCB_China_1y	-0.0433	-0.0595*	0.2914**	-0.0671*	-0.0946*	0.3529**	-0.0408	-0.0559*	0.2821**
	(0.0164)	(0.0183)	(0.0396)	(0.0219)	(0.0276)	(0.0487)	(0.0158)	(0.0173)	(0.0388)
R^2	0.277	0.266	0.338	0.277	0.284	0.317	0.276	0.264	0.343
Volume									
ΔCCB_China_1y	-0.0037	-0.0190	0.3072**	-0.0037	-0.0298	0.3900**	-0.0037	-0.0179	0.2946**
	(0.0062)	(0.0090)	(0.0430)	(0.0049)	(0.0106)	(0.0526)	(0.0065)	(0.0089)	(0.0421)
R^2	0.279	0.268	0.352	0.280	0.284	0.343	0.279	0.266	0.355
Observations	763,226	633,084	23,859	70,138	57,816	3,163	693,088	575,268	20,696
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of one year. The sample starts from 2011 to 2014. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.19: Financing channel for Chinese firms: imports in China and 1-year CCB 2009-2012 (units collapse)

	All			US only			Excluding US		
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	Quantity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Imports									
Value									
ΔCCB_China_1y	0.0640**	0.0617**	0.0820*	0.0709**	0.0675**	0.0826**	0.0632**	0.0610**	0.0819*
	(0.0107)	(0.0087)	(0.0199)	(0.0095)	(0.0075)	(0.0181)	(0.0109)	(0.0089)	(0.0203)
R^2	0.267	0.285	0.254	0.260	0.273	0.240	0.268	0.286	0.255
Volume									
ΔCCB_China_1y	0.0713*	0.0704**	0.0836	0.0771*	0.0767**	0.0789	0.0706*	0.0697**	0.0841
	(0.0173)	(0.0137)	(0.0319)	(0.0194)	(0.0148)	(0.0374)	(0.0171)	(0.0136)	(0.0313)
R^2	0.259	0.272	0.267	0.245	0.260	0.238	0.261	0.274	0.271
Observations	470,053	331,407	92,912	49,109	35,813	9,639	420,944	295,594	83,273
Panel B: Exports									
Value									
ΔCCB_China_1y	0.0376**	0.0378**	0.0404**	0.0354**	0.0361**	0.0402**	0.0378**	0.0380**	0.0404*
	(0.0070)	(0.0061)	(0.0087)	(0.0056)	(0.0060)	(0.0053)	(0.0082)	(0.0074)	(0.0098)
R^2	0.278	0.280	0.291	0.285	0.291	0.312	0.277	0.279	0.289
Volume									
ΔCCB_China_1y	0.0516*	0.0507*	0.0554*	0.0545**	0.0540**	0.0609**	0.0513*	0.0504*	0.0549*
	(0.0128)	(0.0120)	(0.0145)	(0.0078)	(0.0088)	(0.0069)	(0.0133)	(0.0124)	(0.0152)
R^2	0.273	0.275	0.286	0.279	0.283	0.310	0.273	0.274	0.284
Observations	825,930	475,761	285,896	72,624	44,828	22,169	753,306	430,933	263,727
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of one year. For quantity specifications, we collapse the unit with similar meaning of "piece" to get a more sophisticated measure. The sample starts from 2009 to 2012. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.20: Financing channel for Chinese firms: imports in China and 1-year CCB 2011-2014 (units collapse)

	All			US only			Excluding US		
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	Quantity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Imports									
Value									
ΔCCB_China_1y	-0.0415*	-0.0512*	-0.0144	-0.0429*	-0.0508	-0.0257	-0.0413*	-0.0513*	-0.0131
	(0.0130)	(0.0167)	(.)	(0.0142)	(0.0176)	(0.0123)	(0.0129)	(0.0167)	(0.0052)
R^2	0.236	0.267	0.229	0.223	0.259	0.199	0.238	0.269	0.233
Volume									
ΔCCB_China_1y	0.0060	-0.0103	0.0529**	0.0028	-0.0095	0.0302	0.0065	-0.0104	0.0556**
	(0.0036)	(0.0076)	(0.0113)	(0.0051)	(0.0087)	(0.0221)	(0.0038)	(0.0076)	(0.0105)
R^2	0.240	0.263	0.273	0.227	0.250	0.250	0.242	0.265	0.276
Observations	541,556	390,216	109,259	60,168	45,281	11,513	481,388	344,935	97,746
Panel B: Exports									
Value									
ΔCCB_China_1y	-0.0519*	-0.0595*	-0.0435	-0.0932*	-0.0946*	-0.0983*	-0.0480*	-0.0559*	-0.0390
	(0.0168)	(0.0183)	(0.0156)	(0.0248)	(0.0276)	(0.0229)	(0.0160)	(0.0173)	(0.0151)
R^2	0.254	0.266	0.266	0.269	0.284	0.305	0.253	0.264	0.263
Volume									
ΔCCB_China_1y	-0.0119	-0.0190	-0.0044	-0.0270*	-0.0298	-0.0290**	-0.0105	-0.0179	-0.0024
	(0.0066)	(0.0090)	(0.0041)	(0.0066)	(0.0106)	(0.0052)	(0.0067)	(0.0089)	(0.0042)
R^2	0.257	0.268	0.270	0.267	0.284	0.302	0.256	0.266	0.267
Observations	1,031,521	633,084	334,136	87,366	57,816	24,758	944,155	575,268	309,378
Fixed effects: country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: This table reports the regression between yearly change in imports, exports and trade (both volume and value) from firms in Chile and yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of one year. The sample starts from 2011 to 2014. Country-firm-product level fixed effect is controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.21: Effects of CCB for trading partners on Chilean trade†

	Value		Volume	
	(1)	(2)	(3)	(4)
Panel A: Imports				
ΔCCB_Chile		0.3518**		0.3448*
		(0.1311)		(0.1569)
$\Delta CCB\_CountParty$	0.0020	-0.0136	0.0022	-0.0131
	(0.0169)	(0.0088)	(0.0161)	(0.0074)
R^2	0.133	0.140	0.135	0.140
Observations	566,947	566,947	566,947	566,947
Panel B: Exports				
ΔCCB_Chile		0.3190***		0.2708***
		(0.0694)		(0.0836)
$\Delta CCB\_CountParty$	-0.0213**	-0.0177***	-0.0225***	-0.0193***
	(0.0086)	(0.0040)	(0.0068)	(0.0042)
R^2	0.145	0.158	0.142	0.150
Observations	57,942	57,942	57,942	57,942
Fixed effects:				
country-firm-product	Y	Y	Y	Y

† This table reports the regression between yearly change in imports and exports from Chilean firms and lagged yearly change in cross-currency basis of the currency for their counterparties against the US dollar. The sample starts from 2009 to 2022 for all the specifications. Fixed effects at country-firm-product and unit level are controlled, and robust standard errors clustered at firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$