YES YOUNG ECONOMISTS SEMINAR

HRVATSKA NARODNA BANKA
EUROSUSTAV

18th YOUNG ECONOMISTS' SEMINAR
TO THE 31st DUBROVNIK ECONOMIC CONFERENCE

Month 5 – 6, 2025, Dubrovnik, Croatia

Xin Long

Dollar Financing and Trade: Evidence from Chile

Draft version

Please do not quote

Dollar Financing and Trade: Evidence from Chile

Xin Long*

April 2025

Click *here* for the latest version.

Abstract

Dollar invoicing is prevalent in international trade, even when the United States is not involved; however, little is known about how access to dollar liquidity impacts trade flows of non-US firms. This paper examines how dollar financing affects firms' trading behaviors using the cross-currency basis (CCB) as a country-specific indicator of the dollar borrowing cost for firms outside the United States. Exploiting granular firm-level data from Chile between 2009 and 2022, I apply a multi-dimensional fixed effect model along with two shift-share style instruments to identify the effects of dollar financing on firms' imports and exports. Intuitively, I find that easier access to dollar liquidity increases both firm-level imports and exports. However, this effect is insignificant for exporters who trade directly with the United States. Further analysis reveals that CCB works better as a dollar liquidity indicator than the more commonly utilized broad dollar index. Lastly, I conduct an analogous exercise with Chinese data, which echoes the finding from Chile while underscoring the conditioning role of different exchange rate regimes.

KEYWORDS: dollar financing; CIP deviations; cross-currency basis; international trade
JEL: F31 F14 F41

*ESSEC Business School. Xin Long, Ph.D. candidate at Economics Department, ESSEC Business Shcool, 3 Avenue Bernard Hirsch, 95000 Cergy, France. Email: xin.long@essec.edu. I am deeply grateful to Jamus Lim, Christina Terra, and Carlos Winograd for their invaluable guidance and support. I also extend my appreciation to the participants of the First Modern Finance Conference, the AFEDEV Job Market Training Seminar at CERDI, the Theoretical and Applied Economics Seminar at CY Cergy Paris Université, and the SWFA 64th Annual Conference for their insightful feedback. All errors are my own. The findings, interpretations, and conclusions expressed in this article are entirely those of the author(s).

1 Introduction

Financing is essential to economic activity, especially in investment and trade. As the most influential currency, the U.S. dollar dominates others in trade invoicing, and is commonly used as a vehicle currency in international trade, even in cases where the countries involved do not use it domestically (Gopinath 2015). As illustrated in Figure 1, dollar invoicing in exports is not only prevalent in the Americas where the United States presumably exerts a greater influence but also across Asia Pacific and the rest of world.[1]The dominance of the dollars is certainly evident in Chile,[2]where—despite being in possession of a national currency—more than four-fifths of trade activities are invoiced in dollars. This trend is particularly pronounced in exports, where dollar invoicing accounts for over 90 percent of transactions.

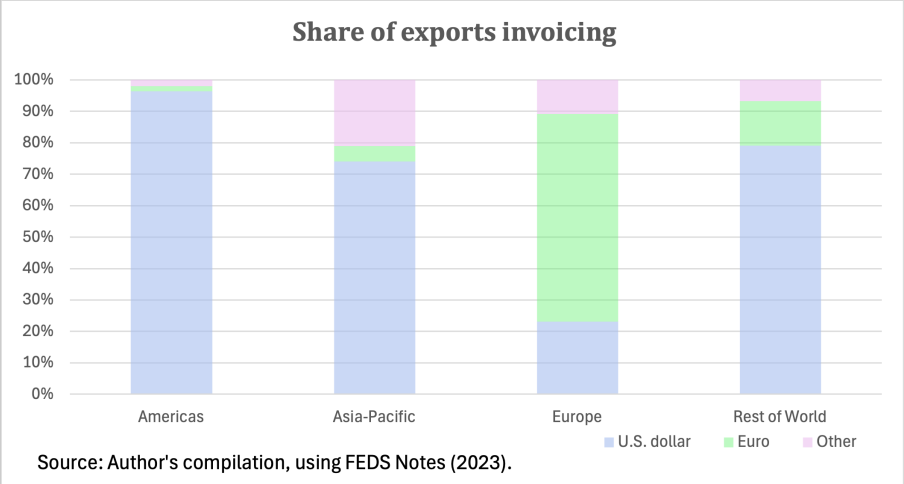


Figure 1: The U.S. dollar is ubiquitously used as the invoicing currency in export activities across the globe, with Europe being an exception, where the euro outweighs the dollar as the most common invoicing currency. Strikingly, more than 95% of exporting transactions are invoiced in the U.S. dollars in the Americas, reflecting its dominant position in this region, which includes Chile—the focus of this paper.

While up to 90% of trade transactions involve some form of trade finance, such as credit, insurance or guarantee (Auboin 2009), the Asian Development Bank estimated a global trade finance gap of 1.6 trillion dollars in 2016 (Auboin & DiCaprio 2016). The ubiquity of dollar invoicing and the prevalence of firms' dependence on external financing in international trade might go some way toward explaining the dramatic decline in trade since the 2007/08 crisis (Chen & Juvenal 2018; Levchenko, Lewis & Tesar 2010). Although shocks from either demand or supply side could drive this result (Benguria & Taylor 2020), empirical studies find evidence that liquidity shortages contributed to the fall in trade during the crisis period (Bems, Johnson & Yi 2013; Chor & Manova 2012). But the question of dollar financing impacting trade flows in the post-Global Financial Crisis (GFC) era is, ultimately, an empirical question, which is the focus of this paper.

[1]An exception is observed in Europe, where the euro functions as a regional currency. Nevertheless, Maggiori, Neiman & Schreger (2019) document a recent trend showing a rise in the use of dollar and a decline in the euro in both international trade and finance, revealing the growing dollar hegemony on a global scale.

[2]In Figure A.1, I illustrate the usage of invoicing in terms of currency for both imports and exports.

I exploit the breakdown in the post-GFC no-arbitrage condition known as covered interest parity (CIP) to identify changes in dollar liquidity conditions. These deviations have resulted in large and persistent cross-currency bases[3] for a host of currencies vis-à-vis the U.S. dollar (Cerutti, Obstfeld & Zhou 2021; Du *et al.* 2018; Iida, Kimura & Sudo 2018). I argue that the cross-currency basis (CCB) is a better proxy of the dollar liquidity condition for foreign borrowers than the commonly used dollar exchange rate (Bruno & Shin 2023; Obstfeld & Zhou 2022), since it differentiates the borrowing costs in a specific currency used in the country rather than a multilateral exchange rate, which is affected by a wide-ranging (and often indeterminate) set of drivers.

Chile represents an ideal context for investigating the effect of U.S. dollar liquidity on the trade flows of a non-U.S. country. As a small open economy, Chile is highly integrated into international trade markets but exerts limited influence over global prices and interest rates. This characteristic mitigates concerns about simultaneity, as Chilean firms are unlikely to influence their dollar liquidity conditions through trade-induced changes in interest or exchange rates.[4] Moreover, Chilean firms exhibit significant exposure to U.S. dollars in trade, underscoring the relevance of dollar liquidity in shaping their trade activities. The evolution of Chilean imports, exports and the CCB of Chilean Peso against the U.S. dollar[5] offers some hints as to the role that dollar financing plays in Chilean trade (Figure 2). Obviously, both trade flows fluctuate in the same direction as the CCB for most of the time during the sample period. When the CCB increases and the U.S. dollar becomes more affordable for Chilean borrowers, both imports and exports in Chile rise, suggesting that firms' trading behaviors might also be affected by the dollar liquidity conditions in Chile.

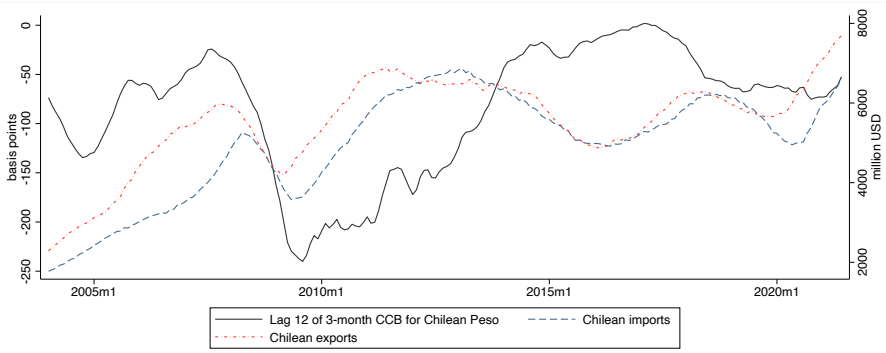


Figure 2: The evolution of Chilean imports, exports, and the CCB (with a 12-month lag) reveals a general comovement between the two trade flows and the CCB. This suggests that as the U.S. dollar becomes cheaper for Chilean borrowers with a rise in the CCB, both imports and exports tend to increase. These patterns hint that Chilean firms' trading behaviors may also be influenced by the country's dollar liquidity conditions.

In this paper, I examine the effect of liquidity access to the U.S. dollar on international trade flows. Specifically, I rely on the cross-currency basis as a proxy for the availability of

[3]The cross-currency basis is a measure of the deviation from Covered Interest Parity. For details, see Du, Tepper & Verdelhan (2018).

[4]The dollar liquidity condition is determined by interest and exchange rates, where the theoretical framework is discussed in Section 2.

[5]An increase in the cross-currency basis reflects an improvement in dollar financing conditions or easier access to dollar liquidity. This concept is discussed in detail in Section 2.

dollar financing and focus on transactions-level flows of imports and exports data for Chile. I distinguish between exporters and importers due to their differing liquidity needs. While the significance of liquidity for importers is straightforward, the rationale for exporters' reliance on dollar liquidity is less immediately obvious. However, many exporters rely on external financing for working capital purpose to cover fixed costs—such as research and development, advertising, and fixed capital investments—as well as to fund intermediate input purchases,[6]inventory, payroll, and other recurring expenses incurred prior to the realization of sales and payment for their output (Chor & Manova 2012; Manova 2013). These are most often denominated in dollars.

To address the potential endogeneity, I adopt a multi-dimensional firm-product-country fixed effects model supplemented by two shift-share style instruments. The first exploits the share of currency exposure used for trade invoicing, while the second further utilizes this currency share, either independently or in conjunction with the country level sector intensity as an instrument (set) for the firm-level sector intensity. These are then interacted with the shift in the cross-currency basis, to achieve identification.

The empirical results confirm the role that the dollar liquidity plays in shaping firms' trade patterns. Easier access to the U.S. dollar leads to increases in both imports and exports—a finding that I also corroborate with data from Chinese firms. I then show that exporters—despite being the final recipients of dollars—rely on dollar liquidity to meet working capital needs. This dependence stems from the need to finance purchases of raw materials, intermediate inputs, or capital goods, alongside shipment delays and the time lag between production and revenue realization. Furthermore, I observe that this effect varies across exchange rate regimes. Specifically, a longer tenor CCB influences trade flows in China but does not have the same impact in Chile, which operates under a more flexible exchange rate regime. Further analysis with the CCB and broad dollar index reveals that the former works better as a dollar liquidity condition in explaining trade flows in Chile.

Related literature. The trade invoicing literature has both theoretically and empirically examined how firms might make choices over currency use in international trade. This choice might differentiate imports from exports possibly due to the dependence on imported inputs (Amador, Mehl, Schmitz & Garcia 2024; Chung 2016), market share size (Devereux, Dong & Tomlin 2017), and demand elasticities across industries (Goldberg & Tille 2008), affecting the exchange rate pass-through into prices and quantities (Amiti, Itskhoki & Konings 2022). However, firms' financing considerations, especially on dollar liquidity, are normally neglected in this area. The prevalence of a dominant currency paradigm[7] in international trade—where most transactions are invoiced in the U.S. dollar—has been intensively documented either at the global (Goldberg & Tille 2008; Gopinath, Boz, Casas, Díez, Gourinchas & Plagborg-Møller 2020; Gopinath & Itskhoki 2022) or an individual country level, including Chile (De Gregorio, García, Luttini &

[6]For instance, it has been estimated that trade in intermediate inputs accounts for almost two-thirds of the world trade (Johnson & Noguera 2012).

[7]The dominant currency paradigm refers to the phenomenon where the international trade is invoiced in a few major currencies—most often the U.S. dollar—regardless of the country involved in the transaction. The euro, sometimes, works as a regional vehicle currency in Europe and some African countries. For details, see Gopinath & Itskhoki (2022) and Amador *et al.* (2024).

Rojas 2024; Giuliano & Luttini 2020). This paper, however, deviates from this area of research by looking at the dollar financing needs for firms and exploring how dollar liquidity access affects their trade patterns on the premise that dollar indeed dominates in invoicing in Chile's trade.

Some researchers have highlighted the importance of finance in trade since the GFC, for both exports (Amiti & Weinstein 2011; Asmundson, Dorsey, Khachatryan, Niculcea & Saito 2011; Demir & Javorcik 2020; Manova 2013) and imports (Auboin & Engemann 2014; Chor & Manova 2012; Schmidt-Eisenlohr 2013). Trade credit[8] has been found to be an important source of (short-term) funds for firms (Daripa & Nilsen 2011; Giannetti, Burkart & Ellingsen 2011; Klapper, Laeven & Rajan 2012; Wu, Firth & Rui 2014), working as either a complement or substitute to bank credit (Burkart & Ellingsen 2004). Theoretically, a supplier may have an advantage in providing trade credit without receiving a collateral, due to its technological specificity[9] that motivates the borrowers to repay (Cunat 2007), whereas creditor protection through improvements in collateral law, for instance—can also increase the amount and duration of trade credit (Costello 2019; Fabbri & Menichini 2010).

Theoretical analysis provides justification for the emergence of a single dominant currency (the U.S. dollar) in financing international trade, either due to imperfect contract enforcement and financial frictions to obtain the needed collateral (Chahrour & Valchev 2022) or the complementarity of dollar's role as a unit of account to that as a safe store of value (Gopinath & Stein 2021). As the demand for collateral increases, the CIP breaks down (Tang & Zhu 2016), and the deviation from CIP between the local currency vis-à-vis the U.S. dollar is regarded and used as an indicator of dollar liquidity shortage (Bacchetta, Davis & Van Wincoop 2023; Filipe, Nissinen & Suominen 2023). I contribute to this literature at the intersection of trade finance and dollar dominance in trade by providing credible empirical evidence on how dollar liquidity access affects the trade performance of firms outside the United States.

Another strand of literature emphasizes the role of the U.S. dollar as a global factor in economic and financial activities (Bruno & Shin 2015a; Gourinchas 2021), in which global risk co-moves with a strengthening dollar exchange rate (Avdjiev, Bruno, Koch & Shin 2019a; Cerutti *et al.* 2021; Lilley, Maggiori, Neiman & Schreger 2022). When the dollar appreciates, international dollar funding stress increases (Obstfeld & Zhou 2022) and the global financial condition tightens, contracting economic activity (Georgiadis, Müller & Schumann 2024). In particular, banks' balance sheets shrink and they are forced to curtail their credit supply to the private sector, which in turn diminishes investment and trade. Bruno & Shin (2015b) term this as the financial channel of exchange rate, and researchers have empirically verified its effect on trade both at firm (Bruno & Shin 2023) and country level (Ma & Schmidt-Eisenlohr 2023). Nevertheless, these works generally center on the broad dollar index as the dollar liquidity condition, which might not be as accurate as the *currency-specific* cross-currency basis—a measure of the deviation from CIP—employed in this paper.

[8]Trade credit refers to the scenario where a supplier (an exporter) acts as a liquidity provider and allows a customer (an importer) to delay payments for goods. To some extent, it could be regarded as a means of trade finance, where firms normally borrow from financial institutions or governments to facilitate international trade activities.

[9]In this scenario, borrowers rely on the suppliers' products as intermediate inputs and cannot find a replaceable provider in a short time given the technological specificity of the latter. Consequently, they are motivated not to default even though no collateral is held by the providers.

Last but not least, this paper also speaks to the literature on the breakdown of CIP after 2007, which tends to explore the causes. These explanations include heightened counterparty risk (Baba & Packer 2009; Hui, Genberg & Chung 2011), greater illiquidity in the foreign exchange market (Fong, Valente & Fung 2010; Pinnington & Shamloo 2016), a strengthening of the dollar (Avdjiev, Du, Koch & Shin 2019b; Cerutti *et al.* 2021), increases in hedging demand for dollars (Borio, McCauley, McGuire & Sushko 2016; Liao & Zhang 2020), rising transactions costs of various kinds (Cenedese, Della Corte & Wang 2021; Du *et al.* 2018; Liao 2020; Rime, Schrimpf & Syrstad 2022), and monetary policy divergences (Fukuda & Tanaka 2017; Iida *et al.* 2018). My paper departs from this family of papers in not attempting to explain the *causes* of CIP deviations in Chile, but providing its *consequence* on firms' trade as a country-specific dollar liquidity condition.

The paper proceeds as follows. Section 2 provides the theoretical analysis on cross-currency basis, arising from the deviations from CIP, and describes the data and econometric methodology. The empirical results together with the robustness analysis are documented in Section 3. Section 4 conducts further discussions on the key finding, and 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. It 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[10] 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 $\mathbf{x}_{it,i(t+n)}$,[11] 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:

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

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

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

[11] I 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 & Packer (2009); Fukuda & Tanaka (2017); Levich (2012)).

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 relatively implies a dollar shortage for borrowers outside the United States, and an increase in the basis suggests an improvement in the dollar liquidity condition for foreign borrowers.[12]This is the typical dollar liquidity shortage 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) and firms when they need dollars to finance trade activities, but are unable to secure them in money markets. For Chilean firms, they generally confront with negative bases[13] across the sample period from 2009 to 2022, indicating common dollar liquidity shortages in the country.

2.2 Empirical identification

Firm-level trade data from the National Customs Service of Chile enables an in-depth analysis of trade fluctuations at the country-firm-product-currency-unit level, providing a unique opportunity to examine the role that dollar financing conditions, faced by firms in Chile, play in shaping their trade patterns 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} represents the annual logarithmic change in the value or volume of firm f's imports[14] of product p from country c, invoiced in currency i, and measured in unit u during year t. The variable ΔCCB_Chile_{t-1} captures the change in the cross-currency basis of the

[12]In general, banks in South American countries, which are often partially dollarized, may lend directly in dollars, as is potentially the case in Chile. However, they face a trade-off between lending in dollars or their local currency when CIP deviations exist. For instance, if the cross-currency basis is negative, lending directly in dollars at the market rate causes the bank to miss out on a risk-free arbitrage opportunity, as the synthetic dollar rate is higher (Keller 2024). Consequently, banks may raise the dollar lending rate to offset the higher opportunity cost, meaning that borrowers still face higher dollar funding costs, even though they can borrow dollars directly from a domestic bank. This aligns with the interpretation of a negative basis as a dollar scarcity condition for borrowers outside the United States.

[13]This is shown in Figure 3 in Section 2.3.

[14]For clarity, the equation is described from the perspective of imports; however, it applies equally to exports. Specifically, there are four potential dependent variables: import value, import volume, export value, and export volume, all in logarithmic first-difference form.

Chilean Peso against the U.S. dollar, lagged by one year. β_{fpc} represents firm-country-product level fixed effects, and ε_{fpciut} denotes the error term.

As discussed in subsection 2.1, the CCB of Chile is a macro-variable determined by both interest and exchange rates and is generally exogenous to individual firms, as no single firm has the ability to influence these components or the CCB itself. However, one could argue that an overall improvement in a country's trade performance might indirectly enhance its financing condition, potentially inducing a simultaneity problem.[15] Further, since it generally requires time for liquidity to impact real economic activity, trade may already have started when firms observe changes in their dollar liquidity access. To address this potential endogeneity, I introduce a *lag* to the changes in the CCB of Chile in the regression, as specified in equation (4), following a common practice in the literature (Amiti & Weinstein 2011; Bruno & Shin 2023; Kim, Lim & Yun 2024).

For imports,[16]the firm-country-product fixed effects framework allows me to analyze the variation within a firm's imports of the same product from the same country over time, thus capturing the firm's demand for a specific product.[17]This approach saturates the model with a multi-level fixed effects at a very granular level for unobservables; thus providing a basis for examining how access to dollar liquidity affects the growth of imports and exports of Chilean firms. Standard errors are further clustered at the firm and year levels.[18]

Notably, I do not control for either currency or unit fixed effects in the main specification. Controlling for currency fixed effects would allow one to isolate the impact of dollar liquidity on variations within the same invoicing currency over time. However, the U.S. dollar, as the dominant currency in international trade, is predominantly used in the invoicing of Chilean firms' trade activities,[19]making explicit control of this factor less necessary. Moreover, as a vehicle currency, the dollar is widely utilized in trade flows that do not directly involve the U.S. (Goldberg & Tille 2008), indicating that firms may still be impacted by dollar liquidity shocks beyond the direct invoicing channel. As such, I opt not to include currency fixed effects in the primary analysis, but leave it as a robustness check.[20]Similarly, I do not control for unit fixed effects, as there is no evidence suggesting that dollar liquidity differentially impacts firms' trade in products based on varying units of measurement. As before, I allow for unit fixed effects in a robustness check.

While the baseline specification (4) examines the overall effects of dollar liquidity access on firms' trading behaviors, it is plausible that firms differ in their exposure to dollars, leading to heterogeneous effects on trade outcomes. A straightforward assumption is that firms with a larger share of transactions invoiced in dollars will be more sensitive to variations in dollar

[15]While this is unlikely to occur at the firm level, it becomes more plausible during periods of significant trade performance improvement, when foreign investors, including those from the U.S., might have a preference for investing in the domestic market. This shift in investment preference could reduce the dollar funding costs for all domestic firms as a result of the substantial growth in trade.

[16]In the case of exports, this approach helps to isolate the supply shock for the same product from the same firm in Chile.

[17]For simplicity and consistency, I use the HS 2-digit level for product classification.

[18]Standard errors clustered at more granular multidimensional levels are reserved for robustness checks.

[19]See Figure A.1 for details.

[20]The results, controlling for both currency and the country-firm-product fixed effects, remain qualitatively consistent with the baseline findings. A full set of results is available upon request.

liquidity conditions. However, given the U.S. dollar's status as the "hegemon" currency in trade (Gourinchas 2021), its role as a vehicle currency extends beyond invoicing alone, influencing trade as a medium of exchange, too. This suggests that even transactions invoiced in other currencies could be affected by dollar liquidity shocks, albeit (likely) to a lesser extent. The frequency with which firms use non-dollar currencies for invoicing would thus capture their exposure to dollar liquidity shocks. To account for this, I utilize the invoicing currency for each individual transaction, and construct a currency exposure variable at the firm-product-year level:

$$Currency\ exposure_{fpit} \equiv CE_{fpit} = \frac{N_{fpit}}{N_{fpt}},$$

where CE_{fpit} represents the firm's currency exposure in trade,[21]defined as the share of transactions invoiced in currency i for product p by firm f in year t (N_{fpit}), relative to the total number of transactions for the same firm-product-year combination across all invoicing currencies (N_{fpt}).[22]The following specification serves as an alternative baseline, where the firm's currency exposure is interacted with the variations in Chile's CCB to achieve identification:

$$\Delta Y_{fpciut} = \alpha' CE_{fpi,t-2} \cdot \Delta CCB\_Chile_{t-1} + \beta'_{fpc} + \varepsilon'_{fpciut} \tag{5}$$

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 & Swift 2020) is in the same spirit.

Since the dollar liquidity shock is lagged by one year, the currency exposure is further lagged by two years, to maintain consistent with the principle of shift-share instruments, where the share variable is often rendered exogenous or pre-determined by taking lags (Breuer 2022; Broxterman & Larson 2020). The coefficient on $CE_{fpi,t-2} \cdot \Delta CCB\_Chile_{t-1}$ thus reflects the average sensitivity of firm f to fluctuations in dollar liquidity condition, considering various invoicing currencies.[23]Again, specification (5) applies to both imports and exports, and a positive coefficient is expected on α'.

Some may still remain uncomfortable with the identification strategies above, as the dollar liquidity access is assumed to be uniform across all firms. But access to dollar liquidity might vary by sector, depending on the ability of banks that firms rely on to obtain external finance (Amiti & Weinstein 2011; Bruno & Shin 2023; Kim *et al.* 2024), or due to distinct liquidity needs.[24]Accordingly, I apply an alternative methodology, which includes sectoral in-

[21]Currency exposure is measured separately for imports and exports.

[22]I measure currency exposure based on the frequency of each currency used in transactions for each product in trade activities, rather than its value, to mitigate concerns of simultaneity—given that the dependent variable may also be trade values. As a robustness check, I employ a value-based measure of currency exposure and rerun the regressions, which yield qualitatively consistent results. These findings are reported in the appendix.

[23]It could be argued that a firm's exposure to dollar liquidity shocks may have a greater influence on its trade activities than its general currency exposure. Therefore, estimations using U.S. dollar exposure interacted with the CCB of Chile are considered as a robustness check.

[24]Sectors that rely heavily on importing inputs, whether raw materials or intermediate products, may be more dependent on dollar liquidity for working capital reasons. Similarly, firms with higher trade intensity in a given sector—such as commodities—are more likely to be affected by dollar financing condition due to greater dollar exposure.

tensity, instrumented by the currency exposures calculated in the previous approach, to further strengthen the identification.

For an importing firm f, its import intensity within a particular sector[25] s, relative to all sectors, plausibly reflects its dollar exposure in that sector and can be measured as:

$$Sector\ intensity_{fst} \equiv SI_{fst} = \frac{Y_{fst}}{Y_{ft}},$$

where Y_{fst} represents the imports value for sector s of firm f in year t, and Y_{ft} denotes the total imports value for all sectors of firm f in year t. This measures the relative dollar exposure of a firm across sectors over time and sums to 1 within each firm, forming the "share"component of the Bartik instrument. The empirical specification is thus:

$$\Delta Y_{fpciut} = \gamma SI_{fst} \cdot \Delta CCB\_Chile_{t-1} + \theta_{fpc} + \epsilon_{fpciut} \tag{6}$$

The coefficient—γ—captures the impact of the dollar liquidity shock on the firm's imports in terms of its shifting dollar exposure across different sectors. Likewise, an exporting sector intensity can be constructed and the same specification applies to exports as well.

I further instrument the potentially endogenous firm-level sector intensity with a one-year lag of the currency exposure at the sector level, denoted as $CE_{fsi,t-1}$.[26]I call this specification an IV1 specification. This approach is consistent with the spirit of Autor, Dorn & Hanson (2013), who instrument their share variable—the U.S. labor market exposure to Chinese imports—with a decade-lagged measure of non-U.S. exposure to Chinese imports for eight other high-income countries, based on local employment levels.

The *firm*'s sector-level currency exposure may reasonably be closely related to its overall intensity *in the sector*.[27]This validates the relevance condition. However, lagged currency exposure should not directly influence a firm's trading behavior, which plausibly satisfies the exclusion restriction.

Furthermore, I construct an instrument set comprising the one-year lag of currency exposure and the one-year lag of sector intensity at the *country* level,[28]which I refer to as the IV2 specification.[29]

[25]Sector intensity here is defined at the intra-firm level. Alternatively, it can also be measured at the cross-firm level as $SI'_{fst} = \frac{Y_{fst}}{Y_{st}}$, where Y_{st} represents the total imports value for sector s across all firms in year t. While SI_{fst} is a better proxy for sector intensity as it reflects within-firm comparisons, SI'_{fst} is employed as a robustness check. Sectors are categorized using the two-digit HS code based on the World Integrated Trade Solution (WITS) classification, with detailed sector classifications provided in Table A.2 in the appendix.

[26]Specifically, $CE_{fsi,t-1} = \frac{N_{fsi,t-1}}{N_{fs,t-1}}$, which represents the ratio of the number of transactions invoiced in currency i for firm f in sector s during the year $t-1$ ($N_{fsi,t-1}$) to the total number of transactions in the same sector and year, irrespective of the invoicing currency ($N_{fs,t-1}$).

[27]Intuitively, a sector with higher intensity is more likely to exhibit larger dollar exposure or lower non-dollar exposure.

[28]The sector intensity at the country level serves as an overall indicator of firms' sector intensity, which clearly suggests a close association between the two. With a one-year lag, the overall sector intensity remains a strong proxy for the contemporaneous firm-level sector intensity, as it typically does not fluctuate significantly over short periods, thereby satisfying the relevance condition. Furthermore, there is no reason to expect that Chile's sector intensity in trade from one year ago would directly influence a firm's current transactions with the rest of the world, thereby plausibly validating the exclusion restriction condition.

[29]This is distinguished from the IV1 specification that employs only the one-year lag of the currency exposure indicator.

Formally, the instrument (set) constitutes the first stage regression:

$$SI_{fst} = \psi CE_{fsi,t-1} + \upsilon_{fst} \tag{7}$$

$$SI_{fst} = \psi_1 CE_{fsi,t-1} + \psi_2 Z_{s,t-1} + \upsilon'_{fst} \tag{8}$$

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 (7) and (8) correspond to the first stage of the IV1 and IV2 specifications, respectively.

2.3 Sample choice and data

I focus on Chile in this paper for several reasons. Firstly, as a small open economy with deep integration into international markets but limited influence over global prices and interest rates, Chile alleviates concerns regarding potential endogeneity issues. Unlike larger countries, Chile cannot significantly impact international interest rates through its trade, thus limiting its ability to adjust the cost of dollar financing.

Secondly, a significant portion of Chile's trade is invoiced in U.S. dollars, suggesting that dollar liquidity likely influences firms' trade activities. As illustrated in Figure A.1, nearly 80% of total import transactions in Chile over the past decade have been denominated in U.S. dollars, with the Euro accounting for approximately 10%. For exports, this proportion is even higher, with about 90% of transactions invoiced in U.S. dollars. Thirdly, Chile provides public access to detailed, firm-level records of trade activities for both imports and exports, offering granular micro data to examine the effect of dollar liquidity on firm-level trade.

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 dis-aggregated product details at the eight-digit Harmonized System (HS) code together with the acceptance date, counterparty country, different units of measurement, invoicing currency, trade volumes and trade values.[30]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.[31]The descriptive statistics at the dis-aggregated level of the firms is shown in Table A.1 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 & Schmidt-Eisenlohr 2023).

As for the dollar liquidity indicator—the three-month tenor[32] cross-currency basis of Chilean Peso (CLP) vis-à-vis the U.S. dollar (CCB_Chile) —I compute it according to equation (3) with relevant data[33] from Bloomberg and Chilean Benchmark Facility. The three-month daily

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

[31]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 GFC period and conduct consistent estimations for both imports and exports, I restrict the sample period between 2009 and 2022.

[32]The three-month tenor serves as an appropriate short-term tenor for firms' external financing. In some countries, securing the passage of a shipment from the factory to the export dock can take up to 30 days, with an additional 30 days required between the shipment's arrival at the import dock and its delivery to the destination warehouse, which does not include the time in shipping transit (Djankov, Freund & Pham 2010). However, I consider the one-month and one-year tenors as robustness checks.

[33]The 3-month LIBOR interest rate for the U.S. dollar, spot and 3-month forward exchange rates of CLP

frequency *CCB_Chile* between 2003 and 2022 is illustrated in Figure 3. Evidently, the basis has been fluctuating in the past two decades, with negative values[34] for the majority of the time including the working sample after the 07/08 financial crisis, indicating that Chilean firms in general are in disadvantage in borrowing U.S. dollars from the FX market during the post-crisis period.

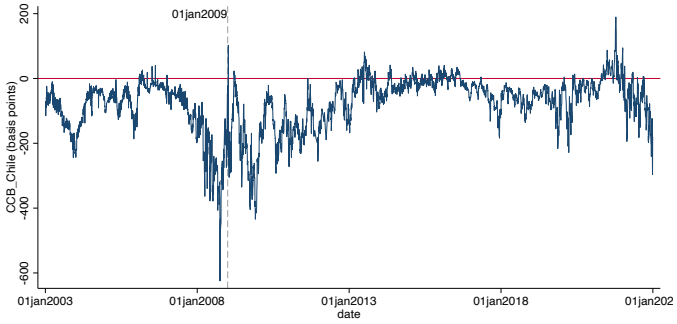


Figure 3: The cross-currency basis of CLP against USD at the three-month tenor from 2003 to 2022 at daily frequency, during which bases are normally negative. The gray dashed line serves as a dividing line for the working sample after 2009, when the dollar shortage is a common problem to Chilean firms given the overall negative bases observed.

The firm-level data for China is sourced from the Customs of the 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 relevant interest and exchange rates data from Bloomberg. Other macro-economic data comes from various sources. For instance, the broad U.S. dollar index is from the Bank for International Settlements (BIS), while the trade openness and GDP per capita are from the World Bank.

3 Empirical results

3.1 Baseline regressions

The first 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.[35]Within each country sample, I consider three different specifications, from all units of measurement[36]

against USD are collected from Bloomberg, while the 3-month inter-bank interest rate for CLP comes from Chilean Benchmark Facility.

[34]One may observe that the CCB for Chile actually rose to *positive* during the pandemic crisis. This is because Treasury price movements, coupled with revised Basel III capital requirements, led to an amplification of the *in*convenience yield for holding dollars during this period (He, Nagel & Song 2022). Seen this way, increases in CCBs remain consistent with our definition of improvement in dollar liquidity (discussed in Section 2.1), because there was no appreciable global dollar shortage during this episode, owing to the diminished attractiveness of dollar assets. In addition, the bases turn out unambiguously negative after being collapsed into a yearly frequency as employed in the estimation, supporting the argument that Chilean firms are indeed in dollar shortages in the sample period. This is shown in Figure A.2 in the appendix.

[35]I choose this period to make most of the data available. In addition, I also conduct estimations with the period excluding the pandemic as a robustness check, which yields qualitatively consistent results.

[36]Different goods are measured in various units, necessitating differentiation between, for example, cubic meters and net kilos, as they are not directly comparable. Collapsing data without considering units of measurement could introduce biases. The all units specification includes transactions using all types of measurement units, while the weight (quantity) specification focuses solely on transactions measured in net kilos (pieces). Notably,

to the unit for weight and quantity, respectively.

Table 1: The effects of dollar liquidity on firms' trade flows in Chile†

	All counterparties			U.S. only			Excluding U.S.		
	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
firm-product				Y	Y	Y			

† This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Strikingly, I find a positive and statistically significant coefficient on ΔCCB_Chile across all specifications for imports with all counterparties, as shown in columns (1) to (3) of Panel A. This result holds consistently, irrespective of whether the dependent variable is measured by value, volume, or constrained by different units of measurement. It suggests that more favorable dollar financing conditions lead to increased imports by Chilean firms from the rest of the world. Statistically, a 1 percentage point (or, more conventionally, 100 basis points) increase in Chile's CCB is associated with a 37.09% to 38.10% rise in the value of Chilean firms' imports,[37]and a 36.15% to 36.98% increase in their import volume.

Similar results are observed for exports as well. The positive and significant coefficient on ΔCCB_Chile across columns (1) to (3) in Panel B indicates that improvements in Chile's dollar funding conditions enhance exports to the rest of the world at the firm level. Specifically, this results in growth rates of 35.95% to 46.13% in value and 29.89% to 40.71% in volume when the

weight and quantity account for over 95% of observations in the full sample regarding unit of measurement, which justifies my exploration of these two units individually.

[37]For log-level specifications, the interpretation of α is that a 1 percentage point increase in Chile's CCB corresponds to $e^{\alpha} - 1$, meaning $e^{0.3155} - 1 = 37.09\%$ and $e^{0.3228} - 1 = 38.10\%$ growth in imports value. The same interpretation applies to imports volume, exports value, and exports volume.

cost of dollar funding is relaxed by 100 basis points.

A firm exporting more intensively to the U.S. may rely less on external dollar financing, as measured by cross-currency basis, since it might have subsidiaries in the United States through which it can directly borrow dollar in the U.S. money market (Kim *et al.* 2024). This scenario mirrors the behavior of foreign parent banks that funded themselves internally through their U.S. branches during the global financial crisis (Cetorelli & Goldberg 2012). To explore this effect, I differentiate trade activities conducted exclusively with the U.S. from those involving counterparties outside the U.S., re-estimating the regressions with the results presented in columns (4) to (6) for U.S. trade and columns (7) to (9) for non-U.S. trade, respectively.

While the coefficient on ΔCCB_Chile remains positive across all the specifications in columns (4) to (9) of both panels, the significance for exports diminishes when the counterparty is restricted to the U.S. only, as shown in columns (4) to (6) of panel B. Intuitively, as firms increase their exports to the United States, they receive more dollar liquidity from sales, which reduces their reliance on external dollar financing.[38]More importantly, exporters who trade more with the U.S. may establish affiliates or subsidiaries there, giving them additional sources to access dollars directly from the money market, thereby weakening their dependence on the FX market. Consequently, the relevance of the cross-currency basis reduces when examining trade activities exclusively with the United States. In contrast, importers do not exhibit this same characteristic; they consistently require dollars to support their activities regardless of their trading partners. This explains why the coefficient remains significant for the import sample that is limited to U.S. only transactions, as shown in the middle columns of Panel A.

The results for the alternative shift-share style baseline—equivalent to specification (5)—are presented in Table 2, with panel A focusing on imports and panel B on exports. Obviously, these findings echo those found in Table 1, providing further evidence of the positive impact of cross-currency basis on firm's trade. Furthermore, these results also confirm that firms with higher exposure to the U.S. dollar engage in more trade as dollar funding conditions become looser.

As previously discussed, firms with larger trade intensity in a specific sector are likely to be more affected by dollar financing, given a higher probability of exposure to dollar-denominated transactions within that sector. When I probe further, looking at whether dollar financing affects a firm's trade pattern through its sector intensity corresponding to the specification (6) in section 2.2, I obtain the results for volume specifications[39] in Table 3. Specifically, I run the regressions for three different specifications, the OLS, IV1 and IV2 within each counterparty sample.

Basically, I find a positive and significant coefficient on $SI \cdot \Delta CCB\_Chile$ throughout almost all the OLS specifications. This signals that Chilean firms tend to trade more in their intensive sectors when the dollar liquidity condition improves. The IV1 and IV2 estimations yield consistent results, with the coefficients being uniformly positive and significant, except in

[38]One might argue that exporters can obtain dollars through sales regardless of their trading partners, given the dominance of the U.S. dollar as the invoicing currency. However, U.S. counterparties facilitate payments more readily than those from other countries. This ease of transaction is particularly important during periods of tightened global dollar liquidity, as U.S. counterparts often have better access to borrowing at lower costs.

[39]For the interest of space, the results for value specifications are presented in Table A.3 in the appendix, qualitatively consistent with the findings here.

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

	All counterparties			U.S. only			Excluding U.S.		
	(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									
$CE \cdot \Delta CCB\_Chile$	0.3412*	0.3429*	0.3566**	0.2990*	0.3033*	0.3026*	0.3514**	0.3523**	0.3708**
	(0.1556)	(0.1561)	(0.1607)	(0.1444)	(0.1466)	(0.1484)	(0.1588)	(0.1588)	(0.1653)
R^2	0.137	0.135	0.137	0.128	0.123	0.126	0.140	0.138	0.140
Volume									
$CE \cdot \Delta CCB\_Chile$	0.3346*	0.3375*	0.3474*	0.3157*	0.3215*	0.3120*	0.3392*	0.3413*	0.3567*
	(0.1758)	(0.1799)	(0.1724)	(0.1551)	(0.1563)	(0.1578)	(0.1816)	(0.1863)	(0.1777)
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									
$CE \cdot \Delta CCB\_Chile$	0.3352**	0.3171**	0.3986**	0.2696*	0.2228	0.4234**	0.3415**	0.3255**	0.3944**
	(0.1156)	(0.1103)	(0.1296)	(0.1441)	(0.1647)	(0.1482)	(0.1141)	(0.1071)	(0.1415)
R^2	0.136	0.140	0.141	0.138	0.152	0.119	0.135	0.139	0.144
Volume									
$CE \cdot \Delta CCB\_Chile$	0.3029**	0.2805**	0.3625**	0.2175	0.1739	0.3565*	0.3111**	0.2899**	0.3635**
	(0.1253)	(0.1214)	(0.1421)	(0.1594)	(0.1755)	(0.1917)	(0.1230)	(0.1179)	(0.1496)
R^2	0.129	0.134	0.130	0.122	0.136	0.103	0.129	0.134	0.135
Observations	132,193	95,286	11,523	10,572	7,466	1,607	121,621	87,820	9,916
Fixed effects:									
country-firm-product	Y	Y	Y				Y	Y	Y
firm-product				Y	Y	Y			

[†] This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor, interacted with the two-year lagged firm-level currency exposure. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

the U.S. only specifications for exports, which show insignificance, as demonstrated in columns (5) and (6) of the bottom panel. Additionally, the larger magnitude of the coefficients in the IV1 or IV2 specifications, compared to the OLS estimates, suggests that the OLS estimation may be downward biased, potentially due to unobserved common factors that simultaneously influence both a firm's trade intensity and total trade.

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. On balance, these results reinforce the previous finding that dollar financing from the FX market positively affects firms' trade but becomes less relevant for Chilean exporters as they increase exports to the country issuing the currency.

Overall, I find that an improvement in the dollar financing condition in Chile—measured as the cross-currency basis of Chilean Peso vis-à-vis the U.S. 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 or FX market, they trade more with the rest of the world. This collaborates with Boz, Gopinath & Plagborg-Møller (2017) and Ma & Schmidt-Eisenlohr (2023)—who find

Table 3: The effects of dollar liquidity with firm's sector intensity on trade *volume* in Chile[†]

	All counterparties			U.S. only			Excluding U.S.		
	(1) OLS	(2) IV1	(3) IV2	(4) OLS	(5) IV1	(6) IV2	(7) OLS	(8) IV1	(9) IV2
Imports volume									
$SI \times \Delta CCB\_Chile$	0.4622**	0.6227*	0.6068*	0.4490**	0.6503*	0.5881*	0.4651**	0.6152*	0.6115*
	(0.1821)	(0.3234)	(0.3001)	(0.1550)	(0.3209)	(0.2882)	(0.1896)	(0.3262)	(0.3050)
Observations	837,548	837,548	801,276	154,417	154,417	148,031	683,131	683,131	653,245
F	6.44	3.71	4.09	8.39	4.11	4.17	6.02	3.56	4.02
Cragg-Donald F		806066.00	564816.53		177494.76	110402.38		637155.91	462539.55
Kleibergen-Paap *rk LM*		4.95**	5.80*		4.95**	5.64*		4.95**	5.80*
Hansen J			1.08			1.67			0.82
Exports volume									
$SI \times \Delta CCB\_Chile$	0.3125**	0.3497**	0.3498**	0.2520	0.2464	0.2493	0.3181**	0.3603**	0.3602**
	(0.1128)	(0.1416)	(0.1419)	(0.1571)	(0.1795)	(0.1794)	(0.1092)	(0.1389)	(0.1391)
Observations	132,212	132,212	132,193	10,583	10,583	10,572	121,629	121,629	121,621
F	7.68	6.10	6.08	2.57	1.88	1.93	8.49	6.73	6.70
Cragg-Donald F		448602.45	225918.92		70,312.82	35,310.30		392485.00	198059.20
Kleibergen-Paap *rk LM*		4.68**	5.02*		4.50**	5.09*		4.70**	5.00*
Hansen J			0.07			0.25			0.08

[†] This table reports the regression results between the yearly changes in imports and exports *volumes* for firms in Chile and their trade in sector intensity, interacted with the one-year lagged dollar liquidity condition, measured as the yearly change in the cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor. *SI* is a ratio of the trade value of a certain sector for a firm to the total trade value of that firm, which is instrumented with the one-year lagged sector currency exposure (IV1 specification) and both the lagged sector currency exposure and one-year lagged sector intensity at the country level (IV2 specification). Test statistics for instrument quality are the Kleibergen-Paap *rk LM* statistic, Cragg-Donald Wald 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 IV2 specifications, and 16.4 for IV1 specifications. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

that the U.S. 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 financial channel put forward by Bruno & Shin (2015b) that real activities are negatively affected when the U.S. 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-19 when CIP deviations are driven by unexpected shocks. Next, I examine several estimation methods by exploring various fixed effects and standard errors, respectively.

For the interest of space, I run the three baseline specifications discussed in Section 3.1 for both volume and value, but I report only the volume specifications using the all-units-of-measurement and all-counterparties sample for both imports and exports, leaving the value results in the appendix.[40]The volume results are shown in Table 4.

I focus on the 3-month tenor of the CCB as the dollar liquidity condition for Chilean firms in the baseline, not only because it is the most commonly used tenor in the literature (Cerutti

[40]These results prove qualitatively consistent with the findings from volume specifications, which are reported in Table A.4.

et al. 2021; Du *et al.* 2018), but also because it represents a suitable option that firms are likely to rely on for external financing. However, I acknowledge that the potential effects of dollar liquidity at other tenors on trade cannot be excluded. Therefore, I also run estimations using both the 1-month and 1-year CCB, reporting the corresponding results from columns (1a) to (2c).

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. 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. Instead, it might still have to purchase products and goods from abroad even if there is a dollar shortage since products from these high intensive importing sectors are necessary to support its economic activities. Put it another way, the trading behaviour of dominant sectors is likely not to be influenced by liquidity factors. To rule out the potential biased result from dominant sectors, I rerun the the baseline regressions by dropping the fuel and machinery products sectors for imports, and metal and mineral products for exports. These results are reported from column (3a) to (3c).

One objection some may have to including the COVID-19 pandemic period is that the unusual nature of the episode—where the shock emanated from a health, rather than financial, source, and further exacerbated by government policies—may affect the results. As another robustness check of the baseline, I therefore consider restricting the sample period to between 2009 and 2019 by excluding the COVID period. This is to rule out possible effects of government-imposed pandemic control measures on trade, and the corresponding results are presented in columns (4a)–(4c). As a further check, I conduct a more disaggregated estimation at the quarterly level instead of the yearly as in the baseline, and report these results between column (5a) and (5c).

As 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 across all the baselines. While the variation within either the invoicing currency or the unit of measurement seems to matter less,[41] one might still argue that the effect of dollar liquidity on transactions in U.S. dollars should be different from those in other currencies despite of being a vehicle currency. To reassure these doubts, I further control the currency, unit fixed effect and both the two, respectively, on top of the country-firm-product fixed effect. These results are displayed in columns (6a)–(8c).

Another concern could be the spatial correlation in the sample firms. However, I have no information of firms' location (state in the country). It is still possible that firms' trade might be spatial dependent on their location. To rule out this possibility, I run regressions that take into account of spatial dependence by following Driscoll & Kraay (1998), which are reported in columns (9a)–(9c). A few literature has already discussed the two-way cluster robust estimates

[41] On one hand, the U.S. 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.

of variance matrix, both in theoretical (Cameron, Gelbach & Miller 2011; Miglioretti & 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 data is not nested in any dimension. In particular, one might believe that there can be standard error correlation within the country or product level. Therefore, in addition to the original firm-year clustering, I further cluster the standard error at the country and product level, respectively and both.[42]These results are shown through column (10a) to (12c).

For the currency exposure specification (5), one might argue that trade invoiced in the U.S. dollar should be more affected by the dollar liquidity since it reflects directly a firm's dollar exposure regardless of the vehicle nature of currency. Thus, I create a pure dollar exposure variable in estimation by recoding the currency exposure to 0 whenever a transaction is not invoiced in the U.S. dollar, negating the potential effect of dollar liquidity on trade without direct dollar exposure. More stringently, if one believes that dollar exposure should only be counted when the trade activities are invoiced in the U.S. dollar, a U.S. dollar dummy[43] works better than the dollar exposure measure. Moreover, from the perspective of liquidity for different currencies, the U.S. dollar indisputably ranks first, followed by other G10 currencies.[44]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, other G10 currencies, and the rest, respectively. As robustness checks, I run regressions by replacing the currency exposure, CE_{fpit}, in specification (5) with the above mentioned three different measures, and find qualitatively consistent results to the baseline.[45]

A firm's sector intensity could be defined differently. Instead of calculating it at the intra-firm level as shown in Section 2.2, one can measure it in a relative way to other firms in the same sector. In particular, for an importing firm f, its importing intensity SI'_{fst} in a certain sector s relative to all firms in the sector can be measured as:

$$SI'_{fst} = \frac{Y_{fst}}{Y_{st}},$$

where Y_{fst} represents the imports value for sector s of firm f in year t, and Y_{st} denotes the total imports value for the whole sector s from all firms in year t, respectively. Alternatively, I estimate

[42]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, similar attempts are done for currency and unit as well and I find qualitatively consistent results. These are reported in Table A.17 in the appendix.

[43]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 U.S, dollar in year t, and 0 otherwise. While not exactly the same, this specification is similar to the one put forward by Rajan & 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 United States with an exogenous measure of the financial development in a foreign country. In my setting, the dollar liquidity condition faced by Chilean firms is plausibly exogenous if one believes that the choice of invoicing currency in trade might be relatively endogenous.

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

[45]For the interest of space, these results are reported in Tables A.5, A.6 and A.7, respectively.

the specification (6) with SI'_{fst} defined above, and find qualitatively consistent results.[46]

I find that, across this broad range of estimates for the coefficients on ΔCCB_Chile, $CE \cdot \Delta CCB\_Chile$, and $SI \cdot \Delta CCB\_Chile$, they remain generally positive and significant for both import and export volumes, consistent with the baseline. The notable exception applies to the case when the tenor of CCB in Chile is restricted to one year. This is not unexpected, since Chile's flexible exchange rate regime allows the exchange rate to adjust whenever it deviates from its long-run equilibrium, negating the importance of a relatively longer-tenor dollar liquidity on its trade. I discuss this in Section 4.5 with details. On balance, the checks in this section provide additional support to the finding that easier access to dollar liquidity positively affects Chile's trade at the firm level.

[46]Despite weaker results due to failure of under-identification tests for the IV2 estimations, the positive and significant coefficient found on $SI'_{fst} \cdot \Delta CCB\ Chile$ for all specifications stay consistent with the baseline. These results are reported in Table A.8 in the appendix.

Table 4: Sensitivity of cross-currency basis and trade *volume* 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		
	(1a[§])	(1b[§])	(1c[§])	(2a)	(2b)	(2c)	(3a)	(3b)	(3c)	(4a)	(4b)	(4c)	(5a)	(5b)	(5c)	(6a)	(6b)	(6c)
Imports																		
Dollar liquidity	0.3343***	0.3668***	0.6944***	0.1266	0.1371	0.2203	0.3238*	0.3467*	0.7625*	0.3198*	0.3453*	0.6553*	0.0546**	0.0543**	0.1273**	0.3148*	0.3408*	0.6323*
	(0.0999)	(0.1120)	(0.2038)	(0.2238)	(0.2456)	(0.4511)	(0.1649)	(0.1807)	(0.3949)	(0.1604)	(0.1796)	(0.3314)	(0.0244)	(0.0253)	(0.0572)	(0.1598)	(0.1770)	(0.3255)
R^2	0.138	0.138	0.004	0.134	0.134	0.001	0.135	0.135	0.004	0.110	0.110	0.003	0.046	0.046	0.000	0.140	0.140	0.003
Observations	837,548	837,548	837,548	837,548	837,548	837,548	558,408	558,408	558,408	767,906	767,906	767,906	1,464,895	1,464,895	1,464,895	833,359	833,359	833,359
Exports																		
Dollar liquidity	0.2942***	0.3142***	0.3633***	0.0557	0.0567	0.0623	0.2847**	0.3030**	0.3385**	0.2866**	0.3031**	0.3502**	0.0511	0.0506	0.0616	0.2901**	0.3049**	0.3516**
	(0.0617)	(0.0657)	(0.0707)	(0.1872)	(0.2010)	(0.2311)	(0.1150)	(0.1249)	(0.1366)	(0.1177)	(0.1266)	(0.1437)	(0.0310)	(0.0310)	(0.0372)	(0.1181)	(0.1261)	(0.1430)
R^2	0.132	0.132	0.010	0.122	0.122	0.000	0.129	0.128	0.008	0.129	0.128	0.008	0.053	0.053	0.000	0.131	0.131	0.008
Observations	132,212	132,193	132,212	132,212	132,193	132,212	121,213	121,194	121,213	132,169	132,169	132,169	283,720	283,720	283,720	131,803	131,784	131,803

	Est: unit FE			Est: currency-unit FE			Est: Driscoll-Kraay			Cluster: country			Cluster: product			Cluster: country product		
	(7a)	(7b)	(7c)	(8a)	(8b)	(8c)	(9a)	(9b)	(9c)	(10a)	(10b)	(10c)	(11a)	(11b)	(11c)	(12a)	(12b)	(12c)
Imports																		
Dollar liquidity	0.3150*	0.3416*	0.6389*	0.3208*	0.3476*	0.6490*	0.3208	0.3476	0.4816**	0.3086*	0.3346*	0.6227*	0.3086*	0.3346*	0.6227*	0.3086*	0.3346*	0.6227*
	(0.1600)	(0.1785)	(0.3307)	(0.1626)	(0.1798)	(0.3331)	(0.1838)	(0.2028)	(0.2134)	(0.1480)	(0.1641)	(0.3234)	(0.1528)	(0.1712)	(0.3234)	(0.1436)	(0.1596)	(0.3234)
R^2	0.136	0.135	0.003	0.139	0.139	0.003				0.136	0.136	0.003	0.136	0.136	0.003	0.136	0.136	0.003
Observations	817,249	817,249	817,249	812,030	812,030	812,030	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548
Exports																		
Dollar liquidity	0.2875**	0.3044**	0.3514**	0.2914**	0.3065**	0.3534**	0.2914**	0.3065**	0.3184**	0.2863**	0.3029**	0.3497**	0.2863**	0.3029**	0.3497**	0.2863**	0.3029**	0.3497**
	(0.1158)	(0.1250)	(0.1411)	(0.1180)	(0.1259)	(0.1426)	(0.1266)	(0.1344)	(0.1224)	(0.1129)	(0.1217)	(0.1416)	(0.1142)	(0.1246)	(0.1416)	(0.1113)	(0.1211)	(0.1416)
R^2	0.132	0.132	0.008	0.135	0.134	0.008				0.129	0.129	0.008	0.129	0.129	0.008	0.129	0.129	0.008
Observations	131,294	131,275	131,294	130,862	130,843	130,862	132,212	132,200	132,212	132,212	132,193	132,212	132,212	132,193	132,212	132,212	132,193	132,212

[†] This table reports the regression between yearly (except where specified) change in imports and exports *volume*s for firms in Chile and yearly (except where specified) change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at a three-month tenor (except where specified). The sample starts from 2009 to 2022. Country-firm-product level fixed effects are controlled, and robust standard errors clustered at the firm and year levels (except specified) are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

[§] For simplicity, a, b, and c in each column denote ΔCCB_Chile, $CE \cdot \Delta CCB$ and $SI \cdot \Delta CCB$, respectively, corresponding to the three baselines described in section 2.2.

4 Discussion

4.1 The broad dollar or cross-currency basis?

After the GFC, the broad dollar index has been regarded as an indicator for global financial conditions. Dollar exchange rate appreciation is associated with international dollar funding stress (Obstfeld & Zhou 2022) and heightened global risks (Georgiadis *et al.* 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.* 2019a; Hofmann & Park 2020) by constraining lending banks' risk-taking capacity (Bruno & Shin 2015a, 2023).

As a multilateral exchange rate, the broad dollar works as a global dollar funding condition for all its trading partners. However, the cross-currency basis accurately measures the cost of borrowing dollars for Chilean firms via the FX market, possibly better capturing the dollar funding condition for the local firms than the dollar exchange rate. To examine this, I run the regressions of trade value and volume on the broad dollar, $\Delta Dollar$ [47] or $\Delta Dollar\_Orth$,[48] with and without the currency-specific dollar liquidity condition in Chile (ΔCCB_Chile). Both GDP per capita and the trade openness at the country level[49] are controlled. I report these results[50] in Table 5.

Table 5: The effects of dollar liquidity on trade *volume* in Chile: broad dollar versus CCB†

	Imports			Exports		
	(1)	(2)	(3)	(4)	(5)	(6)
ΔCCB_Chile		0.3960***	0.4095***		0.2956***	0.3107***
		(0.0593)	(0.0445)		(0.0665)	(0.0534)
$\Delta Dollar$	-0.5479			-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	Y	Y
R^2	0.133	0.139	0.140	0.126	0.133	0.135
Observations	801,720	801,720	801,720	128,204	128,204	128,203

† This table reports the regression results between the yearly changes in trade (both imports and exports) *volume* of firms in Chile and yearly change of the one-year lagged U.S. dollar index, or the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the US dollar at the three-month tenor, and both. 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. Country-firm-product level fixed effects are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

[47] Consistent with the CCB, $\Delta Dollar$ is yhe one-year lagged logarithm change in the broad dollar index.

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

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

[50] As usual, I report the volume specifications here and leave the value specifications with qualitatively in Table A.10 in the appendix.

Interestingly, the negative sign of the coefficient on $\Delta Dollar$ in columns (1) and (4) is as expected, indicating that dollar appreciations tend to hinder trade for Chilean firms. However, this effect is statistically insignificant. This might reflect the fact that broad dollar index is a less accurate dollar funding condition for Chilean firms compared to the country specific cross-currency basis, supported by the positive and statistically significant coefficient on ΔCCB_Chile at the one percent confidence interval in columns (2) and (5).

Avdjiev *et al.* (2019b) find that the cross-currency basis enlarges (more negative) when the dollar strengthens. To mitigate potential endogeneity issues in the estimation, I extract the orthogonal component of the broad dollar index. $\Delta Dollar\_Orth$, to some extent, represents the non-liquidity component of the dollar.[51]Strikingly, a negative and statistically significant coefficient is found on $\Delta Dollar\_Orth$ once the ΔCCB_Chile is controlled in the regressions as reported in columns (3) and (6), suggesting that the dollar appreciation negatively affects trade in addition to the liquidity channel. Noticeably, the coefficient on ΔCCB_Chile remains positive and significant, underscoring how the currency-specific dollar liquidity matters for trade. Overall, it signals that the cross-currency basis is a better indicator of dollar liquidity in Chile than the broad dollar index in explaining the trade flows.

4.2 The working capital channel for exporters

While existing literature has extensively documented exporters' reliance on external financing to facilitate trade activities (Amiti & Weinstein 2011; Berman & Héricourt 2010; Manova 2013; Muûls 2015), the channel through which dollar liquidity affects exporters remains less well understood—particularly if exporters are the final recipients of dollar payments. One plausible channel is that exporters may also depend on imported intermediate inputs or capital goods for production, making access to dollar liquidity critical for financing working capital and facilitating trade transactions. To examine this mechanism, I construct an import dummy variable (IM) to capture exporters' importing behavior and interact it with the dollar liquidity access condition in the regressions.

An alternative explanation is related to the working capital needs that arise from the temporal gap between production and revenue realization. To explore this, I create an indicator variable (AIR) for exporters whose shipments are transported by air—a proxy for more time-sensitive or capital-intensive operations—and interact it with the dollar liquidity condition. The corresponding results are presented in Table 6.

The coefficient on the interaction term IM $\times$ ΔCCB_Chile is consistently positive, though statistically significant only in the export volume specification, as shown in columns (1) and (2). This indicates that the positive effect of dollar liquidity is more pronounced when exporters also import goods from other countries. Importantly, the interaction becomes both economically and statistically significant when these firms import raw materials, intermediate inputs, or capital goods–components essential to production processes–as shown between columns (3) and (6). These findings suggest that access to dollar liquidity facilitates trade primarily by alleviating working capital constraints, particularly when exporters depend on imported inputs for production.

[51]In this case, the liquidity component of the broad dollar is the part explained by the cross-currency basis.

Table 6: The effects of dollar liquidity on *exporters'* trade, conditional on firm's importing behaviors and mode of transport[†]

	Any product		Raw or intermediate		Capital goods		Transport	
	(1) Value	(2) Volume	(3) Value	(4) Volume	(5) Value	(6) Volume	(7) Value	(8) Volume
ΔCCB_Chile	0.3183***	0.2689**	0.2387*	0.1599	0.2104*	0.1211	0.3200**	0.2827**
	(0.1008)	(0.1114)	(0.1127)	(0.1069)	(0.1082)	(0.0929)	(0.1005)	(0.1163)
$IM \times \Delta CCB\_Chile$	0.0003	0.0365**	0.1116**	0.1719***	0.1460**	0.2177***		
	(0.0184)	(0.0156)	(0.0422)	(0.0476)	(0.0547)	(0.0661)		
$AIR \times \Delta CCB\_Chile$							-0.0346	-0.0123
							(0.0322)	(0.0335)
IM	0.0335**	0.0127	-0.0194	-0.0518	-0.0236	-0.0608		
	(0.0132)	(0.0184)	(0.0393)	(0.0371)	(0.0392)	(0.0395)		
AIR							-0.0615*	-0.0709***
							(0.0292)	(0.0174)
Fixed effects:								
country-firm-product	Y	Y	Y	Y	Y	Y	Y	Y
R^2	0.136	0.129	0.137	0.129	0.137	0.130	0.131	0.121
Observations	132,212	132,212	132,212	132,212	132,212	132,212	143,114	138,756

[†] This table reports the regression between yearly change in exports flows of firms in Chile, an import dummy, and the yearly change in cross-currency basis of Chilean Peso against the US dollar at a tenor of three months with a lag. IM is a dummy indicator equals 1 if the firm imports the product category specified in the row header (except the last one) during a given year, and 0 otherwise. AIR is a dummy indicator equals 1 if the firm's export activity is conducted via air transportation, and 0 otherwise. 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: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

In contrast, the interaction between AIR $\times$ ΔCCB_Chile—which captures exporters whose goods are transported by air to destinations, thereby reducing shipment time and accelerating cash inflows—yields negative (albeit statistically insignificant) coefficients, as seen in columns (7) and (8). This suggests that shorter revenue realization cycles may reduce the sensitivity of exporters to dollar liquidity access.

Overall, these results provide empirical support for the working capital channel, highlighting how and why access to dollar liquidity facilitates exporters' trade transactions.

4.3 A pre-crisis falsification test

Global trade had been increasing steadily until 2008, when the global financial crisis erupted (Hoekman 2015) and credit tightening was found to be one of the factors attributing to the collapse of international trade flows (Chor & Manova 2012). While I concentrate mainly on the effect of dollar liquidity on Chile's trade during the post-crisis period, when global trade experienced a decline, it is also worthwhile to examine whether dollar financing played a role prior to the crisis, when overall economic conditions were more favorable. To this end, I repeat estimations as the baseline (4), using data from the pre-crisis period, 2003 to 2007,[52]and report the corresponding results in Table 7.[53]

Surprisingly, the coefficients on the cross-currency basis are uniformly negative for both

[52]I constrain the sample between 2003 and 2007 as the pre-crisis period due to data availability. In fact, there are no records of trade flows at the firm level before the crisis at Chile's Customs Service. The data used here is a database spreading in the academia for the purpose of research, which was disclosed by Chile's Custom Service.

[53]For the interest of space, I only report the results for imports and exports volumes here. However, the results for values are qualitatively similar and are shown in Table A.9 in the appendix

Table 7: The effects of dollar liquidity on firms' trade *volume* in Chile, pre-crisis period[†]

	All counterparties			U.S. only			Excluding U.S.		
	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
firm-product				Y	Y	Y			

[†] This table reports the regression results between the yearly changes in imports and exports *volumes* for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor. The sample starts from 2003 to 2007. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

the imports and exports specifications, in contrast to the baseline results. However, none of these coefficients are statistically significant, implying that dollar liquidity played little role in affecting firms' trade flows in Chile before the crisis. Taken together with the previous findings, this suggests that dollar liquidity does not become important to trade activities in Chile until the post-crisis period, when the CIP deviations remained persistently large (Amador, Bianchi, Bocola & Perri 2020; Cerutti *et al.* 2021; Du *et al.* 2018).

4.4 Heterogeneity

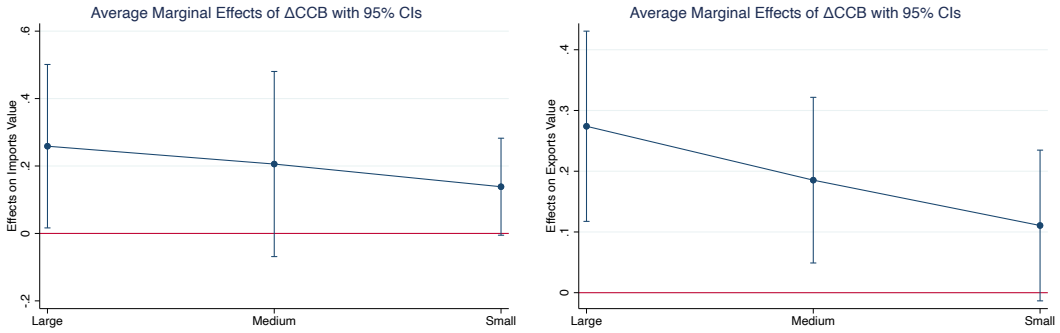
While it is found that dollar liquidity positively affects trade in Chile as a whole, it does not mean that dollar financing affects all firms and industries in the same way. In this section, I explore the heterogeneous effects of dollar liquidity on Chilean firms' trade across two dimensions, firm size and industry.

It is intuitive that large firms[54] may respond differently to liquidity shocks compared to small firms, due to differences in their capital structures, risk-bearing capacities, and reliance on external financing. To investigate this, I introduce an interaction term between dollar liquidity (ΔCCB_Chile) and a firm size dummy, in three separate specifications where the firm size dummy represents large, medium, and small firms, respectively. Again, I run regressions for both imports and exports in terms of value and volume. For brevity, the results are reported

[54] An additional concern is that multinationals might alleviate their reliance on the FX market for dollars by accessing internal financing from their overseas affiliates, which may possess alternative funding sources. However, this assumption may not always hold. Multinationals are typically more engaged in international business activities, which increases their exposure to dollar shocks. Although I have no explicit information on which firms in the sample are multinationals, it is plausible that large firms with higher trade values are more likely to fall into this category. Consequently, the findings here suggest that multinationals may still exhibit a significant dependence on the FX market for dollar liquidity, given their larger dollar exposure and the potential inadequacy of internal financing from their overseas affiliates to fully meet their dollar liquidity demands.

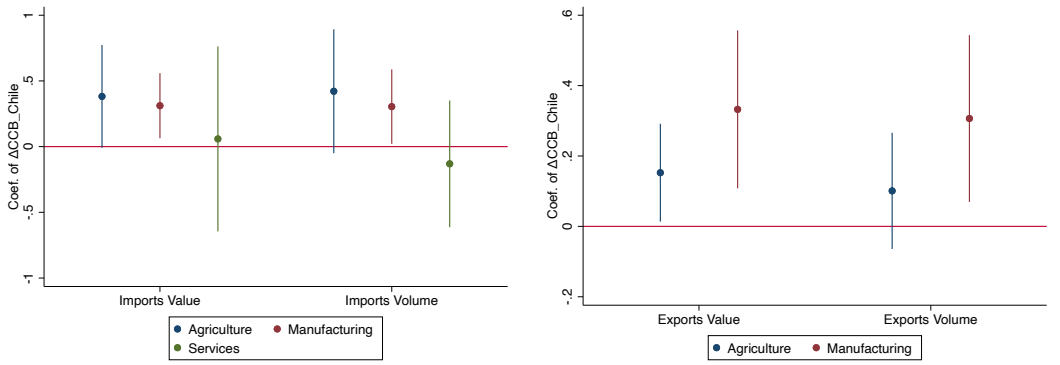
in the appendix.[55]

Interestingly, the coefficient on the interaction term between large firm and dollar liquidity is positive and significant across all specifications, indicating that large firms tend to trade more when dollar liquidity improves. In contrast, a negative effect is observed for small firms. To further illustrate this, I plot the marginal effects of dollar liquidity on firms' trade in Chile by firm size, as shown in Figure 4. Consistently, the average effect of dollar liquidity is larger and more significant for large firms, while smaller and less significant for small firms. These findings reconcile with Beck, Demirgüç-Kunt & Maksimovic (2008), who find that small firms rely less on external bank financing than large firms, thereby attenuating the impact of dollar liquidity on small firms.



(a) Imports (b) Exports

Figure 4: The effects of dollar liquidity on trade exhibit heterogeneity across firm sizes. Obviously, the average effect is both larger and more significant for large firms while smaller and less significant for small ones.



(a) Imports (b) Exports

Figure 5: The coefficient on ΔCCB_Chile is reported for the agriculture, manufacturing, and service industries. Due to data limitations, I can only provide results for the agriculture and manufacturing industries in exports. While no effect of dollar liquidity is observed for the service industry in imports, it has positively influenced trade flows in Chile's manufacturing industry. In contrast, little impact is found for the agriculture industry.

Trade activities vary across industries and might respond differently to dollar liquidity. To

[55]See Table A.11 for details.

explore this, I categorize products into three sectors—agriculture, manufacturing, and services—following the International Standard Industrial Classification (ISIC).[56]I then estimate the specification (4) for these three industries, for both imports and exports.[57]The corresponding coefficients on ΔCCB_Chile are plotted in Figure 5.

Evidently, the coefficients for services in imports (left panel) show smaller magnitudes but larger error bands for both value and volume, despite being negative for the latter. However, none of these coefficients are statistically significant, suggesting that dollar liquidity plays a limited role in the service industry. This is not surprising given the inherent challenges in trading services,[58]which makes them less sensitive to dollar liquidity conditions compared to traditional manufacturing products. With regard to the rest, I find that dollar liquidity has little impact on trade in agriculture, while it positively affects manufacturing industries in Chile.

4.5 How exchange rate regime shapes trade via dollar financing

Since the late 1990s, Chile has operated under a flexible exchange rate regime with an inflation target, allowing its exchange rate to adjust according to market conditions. In contrast, China maintains a relatively fixed exchange rate regime.[59]This raises the question of whether exchange rate regimes influence trade differently through the channel of dollar financing. Therefore, I take advantage of the data from China's customs to examine 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 U.S. dollar, and estimate the baseline regression (4) for China during the period from 2009 to 2012, when the exchange rate remained less flexible.[60]The corresponding estimation results for trade volume[61] are shown in the right panel of Table 8, with the left panel presents the same specifications for Chile.

Surprisingly, the coefficient on ΔCCB_1y is positive and statistically significant across all specifications for Chinese firms, whereas it is insignificant (though positive) for Chilean firms. These contrasting results between the two countries suggest that the exchange rate regime plays a key role in shaping how dollar funding conditions in the FX market affect trade. To illustrate this, I plot the volatility of the spot and forward exchange rates for both the Chinese Yuan and the Chilean Peso, as shown in Figure A.5.

In theory, the emergence of the cross-currency basis (CCB) can be viewed as a sign of exchange rate disequilibrium. If the exchange rate is at its long-run equilibrium, covered interest rate parity holds, and the CCB disappears. In Chile, the flexible exchange rate regime allows

[56]The correspondence follows ISIC Revision 3, where agriculture is classified under Section A, manufacturing under Section D, and services under Sections G, I, J, K, L, M, N, and O.

[57]Due to the small sample size for exports in the service sector, I was only able to run regressions for the agriculture and manufacturing industries.

[58] Aguiar & Gopinath (2005) consider only manufacturing sectors as tradable, while sectors such as services are treated as non-tradable.

[59] Das (2019) provides a detailed discussion on the evolution of China's exchange rate regime.

[60]I focus on the CCB of CNY against the USD at the one-year tenor. China operates a regime that is between flexible and fixed, meaning the spot and forward exchange rates for CNY do not vary significantly in the short run. For robustness, I also check the three-month tenor CCB for China and find qualitatively consistent results, which are available upon request.

[61]The trade value results are reported in the appendix for the interest of space, which echoes the findings here. See Table A.12 for details.

Table 8: The effects of the one-year tenor CCB on trade *volume*: Chile versus China[†]

	Chile			China		
	(1) All counterparties	(2) U.S. only	(3) Excluding U.S.	(4) All counterparties	(5) U.S. only	(6) Excluding U.S.
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 trade *volume* Chile and China, where the one-year tenor cross-currency basis is used for the respective local currency against the U.S. 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 effects are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

for quicker adjustments toward equilibrium, as the forward rate adjusts in a similar magnitude to the spot rate.[62]This explains why shorter tenor CCBs,[63]such as the three-month CCB, are more relevant for trade. In contrast, China's less flexible exchange rate regime requires a longer time to adjust to its long-term equilibrium,[64]where the one-year forward rate adjusts with a larger magnitude compared to the three-month rate.

As further evidence, I calculate the half-life purchasing power parity (PPP) exchange rate convergence[65] for the real bilateral exchange rate between the CLP and USD, and the CNY and USD. Consistently, I find that the convergence is approximately three and a half years for the former, but more than double (seven and a half years) for the latter, implying that the CNY has a far slower PPP exchange rate convergence compared to the CLP.

Taken together, the lower flexibility of the CNY exchange rate causes it to adjust more slowly to its long-term equilibrium, making the longer tenor (one-year) dollar liquidity indicator in China remain relevant for trade in China.[66]This contrasts with the insignificant effect of dollar liquidity with the same tenor in Chile, where the exchange rate regime is more flexible. To sum, this exercise suggests that easier dollar liquidity access from the FX market boosts firms' trade in China, providing further evidence of the impact of the CCB on firms' trade beyond the context of Chile and highlighting how this effect can vary across different exchange rate regimes.

[62]This is shown in (c) and (d) of Figure A.5.

[63]Both the three-month and one-month tenor CCBs positively affect trade, as discussed in Section 3.2.

[64]This is demonstrated in panels (a) and (b) of Figure A.5.

[65]Following Chortareas & Kapetanios (2013), I estimate the half-life convergence using an AR(1) model $y_t = \rho y_{t-1} + \epsilon_t$, where the half-life is calculated as $h = \frac{\ln(1/2)}{\ln(\hat{\rho})}$.

[66]Another potential explanation is that the cost of borrowing at the one-year tenor was lower than the three-month tenor during the sample period from 2009 to 2012 in China, as depicted in Figure A.4.

5 Conclusion

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

I find that easier access to dollar liquidity increases both imports and exports in Chile. This effect persists when identification is extended to two shift-share style instruments, where firms' dollar exposure is captured through either the invoicing currency share at the transaction level or the firm's sector intensity. It remains robust across different model specifications and variable measurements.

When delving deeper, I find that exporters—despite being the final recipients of dollars—rely on dollar liquidity to meet working capital needs. This reliance arises from the necessity to purchase raw materials, intermediate inputs, or capital goods (such as machinery) for production, coupled with potential shipment delays and the temporal gap between production and the realization of revenues from purchasers. Additionally, my analysis shows that the country-specific dollar liquidity measure—the cross-currency basis of the Chilean Peso against the U.S. dollar—better explains variations in firms' trade than the more general broad dollar index. A similar analysis with Chinese firms provides further evidence of the impact of the CCB on trade in another country, while also highlighting how this effect may vary across different exchange rate regimes.

Policy implications. I look into the role that the U.S. dollar plays at the intersection of international finance and trade, and find that firm-level trade in Chile is materially affected by the dollar liquidity access during the post-crisis period, partly reconciling with the weak trade performance observed after the GFC (Ollivaud & Schwellnus 2015). The importance of dollar liquidity for trade suggests that access to external dollar funding mechanisms—such as swap lines with the Federal Reserve—could help improve firms' trade performance in emerging markets like Chile. While such swap agreements are not easily secured, an alternative approach could involve building up official dollar reserves, which would enable the government to support local firms through a development bank or other similar institutions. More fundamentally, enhancing the attractiveness of investment opportunities for foreign investors to supply dollar liquidity to the domestic market may offer a long-term solution to this issue.

References

Aguiar, Mark & Gita Gopinath (2005). "Fire-sale foreign direct investment and liquidity crises". *Review of Economics and Statistics* 87(3): 439–452

Amador, João, Arnaud Mehl, Martin Schmitz & Joana Garcia (2024). "Dominant currency pricing in international trade of services"

Amador, Manuel, Javier Bianchi, Luigi Bocola & Fabrizio Perri (2020). "Exchange rate policies at the zero lower bound". *The Review of Economic Studies* 87(4): 1605–1645

Amiti, Mary, Oleg Itskhoki & Jozef Konings (2022). "Dominant currencies: How firms choose currency invoicing and why it matters". *The Quarterly Journal of Economics* 137(3): 1435–1493

Amiti, Mary & David E Weinstein (2011). "Exports and financial shocks". *The Quarterly Journal of Economics* 126(4): 1841–1877

Asmundson, Irena, Thomas William Dorsey, Armine Khachatryan, Ioana Niculcea & Mika Saito (2011). "Trade and trade finance in the 2008-09 financial crisis"

Auboin, Marc (2009). "Boosting the availability of trade finance in the current crisis: Background analysis for a substantial G20 package". *CEPR Policy Insight* 35: 1–7

Auboin, Marc & Alisa DiCaprio (2016). "Why do trade finance gaps persist: Does it matter for trade and development?" *Technical report*, WTO Staff Working Paper

Auboin, Marc & Martina Engemann (2014). "Testing the trade credit and trade link: evidence from data on export credit insurance". *Review of World Economics* 150: 715–743

Autor, David H, David Dorn & Gordon H Hanson (2013). "The China syndrome: Local labor market effects of import competition in the United States". *American economic review* 103(6): 2121–2168

Avdjiev, Stefan, Valentina Bruno, Catherine Koch & Hyun Song Shin (2019a). "The dollar exchange rate as a global risk factor: evidence from investment". *IMF Economic Review* 67: 151–173

Avdjiev, Stefan, Wenxin Du, Catherine Koch & Hyun Song Shin (2019b). "The dollar, bank leverage, and deviations from covered interest parity". *American Economic Review: Insights* 1(2): 193–208

Baba, Naohiko & Frank Packer (2009). "Interpreting deviations from covered interest parity during the financial market turmoil of 2007–08". *Journal of Banking & Finance* 33(11): 1953–1962

Bacchetta, Philippe, J Scott Davis & Eric Van Wincoop (2023). "Dollar Shortages, CIP Deviations, and the Safe Haven Role of the Dollar". *Technical report*, National Bureau of Economic Research

Beck, Thorsten, Asli Demirgüç-Kunt & Vojislav Maksimovic (2008). "Financing patterns around the world: Are small firms different?" *Journal of financial economics* 89(3): 467–487

Bems, Rudolfs, Robert C Johnson & Kei-Mu Yi (2013). "The great trade collapse". *Annu. Rev. Econ.* 5(1): 375–400

Benguria, Felipe & Alan M Taylor (2020). "After the panic: Are financial crises demand or supply shocks? Evidence from international trade". *American Economic Review: Insights* 2(4): 509–526

Berman, Nicolas & Jérôme Héricourt (2010). "Financial factors and the margins of trade: Evidence from cross-country firm-level data". *Journal of Development Economics* 93(2): 206–217

Borio, Claudio EV, Robert N McCauley, Patrick McGuire & Vladyslav Sushko (2016). "Covered interest parity lost: understanding the cross-currency basis". *BIS Quarterly Review September*

Boz, Emine, Gita Gopinath & Mikkel Plagborg-Møller (2017). "Global trade and the dollar". *Technical report*, National Bureau of Economic Research

Breuer, Matthias (2022). "Bartik instruments: An applied introduction". *Journal of Financial Reporting* 7(1): 49–67

Broxterman, Daniel A & William D Larson (2020). "An empirical examination of shift-share instruments". *Journal of Regional Science* 60(4): 677–711

Bruno, Valentina & Hyun Song Shin (2015a). "Capital flows and the risk-taking channel of monetary policy". *Journal of monetary economics* 71: 119–132

Bruno, Valentina & Hyun Song Shin (2015b). "Cross-border banking and global liquidity". *The Review of Economic Studies* 82(2): 535–564

Bruno, Valentina & Hyun Song Shin (2023). "Dollar and exports". *The Review of Financial Studies* 36(8): 2963–2996

Burkart, Mike & Tore Ellingsen (2004). "In-kind finance: A theory of trade credit". *American economic review* 94(3): 569–590

Cameron, A Colin, Jonah B Gelbach & Douglas L Miller (2011). "Robust inference with multiway clustering". *Journal of Business & Economic Statistics* 29(2): 238–249

Cenedese, Gino, Pasquale Della Corte & Tianyu Wang (2021). "Currency mispricing and dealer balance sheets". *The Journal of Finance* 76(6): 2763–2803

Cerutti, Eugenio M, Maurice Obstfeld & Haonan Zhou (2021). "Covered interest parity deviations: Macrofinancial determinants". *Journal of International Economics* 130: 103447

Cetorelli, Nicola & Linda S Goldberg (2012). "Follow the money: Quantifying domestic effects of foreign bank shocks in the great recession". *American Economic Review* 102(3): 213–218

Chahrour, Ryan & Rosen Valchev (2022). "Trade Finance and the Durability of the Dollar". *The Review of Economic Studies* 89(4): 1873–1910

Chen, Natalie & Luciana Juvenal (2018). "Quality and the great trade collapse". *Journal of Development Economics* 135: 59–76

Chor, Davin & Kalina Manova (2012). "Off the cliff and back? Credit conditions and international trade during the global financial crisis". *Journal of international economics* 87(1): 117–133

Chortareas, Georgios & George Kapetanios (2013). "How Puzzling Is The PPP Puzzle? An Alternative Half-Life Measure of Convergence to PPP". *Journal of Applied Econometrics* 28(3): 435–457

Chung, Wanyu (2016). "Imported inputs and invoicing currency choice: Theory and evidence from UK transaction data". *Journal of International Economics* 99: 237–250

Costello, Anna M (2019). "The value of collateral in trade finance". *Journal of Financial Economics* 134(1): 70–90

Cunat, Vicente (2007). "Trade credit: suppliers as debt collectors and insurance providers". *The Review of Financial Studies* 20(2): 491–527

Daripa, Arup & Jeffrey Nilsen (2011). "Ensuring sales: A theory of inter-firm credit". *American Economic Journal: Microeconomics* 3(1): 245–279

Das, Mr Sonali (2019). *China's evolving exchange rate regime*. International Monetary Fund

De Gregorio, José, Pablo García, Emiliano Luttini & Marco Rojas (2024). "From dominant to producer currency pricing: Dynamics of Chilean exports". *Journal of International Economics* 149: 103934

Demir, Banu & Beata Javorcik (2020). "Trade finance matters: evidence from the COVID-19 crisis". *Oxford Review of Economic Policy* 36(Supplement_1): S397–S408

Devereux, Michael B, Wei Dong & Ben Tomlin (2017). "Importers and exporters in exchange rate pass-through and currency invoicing". *Journal of International Economics* 105: 187–204

Djankov, Simeon, Caroline Freund & Cong S Pham (2010). "Trading on time". *The review of Economics and Statistics* 92(1): 166–173

Driscoll, John C & Aart C Kraay (1998). "Consistent covariance matrix estimation with spatially dependent panel data". *Review of economics and statistics* 80(4): 549–560

Du, Wenxin, Alexander Tepper & Adrien Verdelhan (2018). "Deviations from covered interest rate parity". *The Journal of Finance* 73(3): 915–957

Fabbri, Daniela & Anna Maria C Menichini (2010). "Trade credit, collateral liquidation, and borrowing constraints". *Journal of Financial Economics* 96(3): 413–432

Filipe, Sara Ferreira, Juuso Nissinen & Matti Suominen (2023). "Currency carry trades and global funding risk". *Journal of Banking & Finance* 149: 106800

Fong, Wai-Ming, Giorgio Valente & Joseph KW Fung (2010). "Covered interest arbitrage profits: The role of liquidity and credit risk". *Journal of banking & finance* 34(5): 1098–1107

Fukuda, Shin-ichi & Mariko Tanaka (2017). "Monetary policy and covered interest parity in the post GFC period: Evidence from the Australian dollar and the NZ dollar". *Journal of International Money and Finance* 74: 301–317

Georgiadis, Georgios, Gernot J Müller & Ben Schumann (2024). "Global risk and the dollar". *Journal of Monetary Economics* 144: 103549

Giannetti, Mariassunta, Mike Burkart & Tore Ellingsen (2011). "What you sell is what you lend? Explaining trade credit contracts". *The Review of Financial Studies* 24(4): 1261–1298

Giuliano, Fernando & Emiliano Luttini (2020). "Import prices and invoice currency: Evidence from Chile". *Journal of International Money and Finance* 106: 102183

Goldberg, Linda S & Cédric Tille (2008). "Vehicle currency use in international trade". *Journal of international Economics* 76(2): 177–192

Goldsmith-Pinkham, Paul, Isaac Sorkin & Henry Swift (2020). "Bartik instruments: What, when, why, and how". *American Economic Review* 110(8): 2586–2624

Gopinath, Gita (2015). "The international price system". *Technical report*, National Bureau of Economic Research

Gopinath, Gita, Emine Boz, Camila Casas, Federico J Díez, Pierre-Olivier Gourinchas & Mikkel Plagborg-Møller (2020). "Dominant currency paradigm". *American Economic Review* 110(3): 677–719

Gopinath, Gita & Oleg Itskhoki (2022). "Dominant currency paradigm: A review". *Handbook of international economics* 6: 45–90

Gopinath, Gita & Jeremy C Stein (2021). "Banking, trade, and the making of a dominant currency". *The Quarterly Journal of Economics* 136(2): 783–830

Gourinchas, Pierre-Olivier (2021). "The dollar hegemon? Evidence and implications for policymakers". In *The Asian monetary policy forum: Insights for central banking*, pp. 264–300. World Scientific

He, Zhiguo, Stefan Nagel & Zhaogang Song (2022). "Treasury inconvenience yields during the COVID-19 crisis". *Journal of Financial Economics* 143(1): 57–79

Hebb, Greg (2021). "On the performance of Bank-managed mutual funds: Canadian evidence". *Journal of Economics and Finance* 45(1): 22–48

Hoekman, Bernard M (2015). *The global trade slowdown: A new normal?* Centre for Economic Policy Research (CEPR)

Hofmann, Boris & Taejin Park (2020). "The broad dollar exchange rate as an EME risk factor". *BIS Quarterly Review* December: 13–26

Hui, Cho-Hoi, Hans Genberg & Tsz-Kin Chung (2011). "Funding liquidity risk and deviations from interest-rate parity during the financial crisis of 2007–2009". *International Journal of Finance & Economics* 16(4): 307–323

Iida, Tomoyuki, Takeshi Kimura & Nao Sudo (2018). "Deviations from covered interest rate parity and the dollar funding of global banks". *55th issue (September 2018) of the International Journal of Central Banking*

Johnson, Robert C & Guillermo Noguera (2012). "Accounting for intermediates: Production sharing and trade in value added". *Journal of international Economics* 86(2): 224–236

Keller, Lorena (2024). "Arbitraging covered interest rate parity deviations and bank lending". *American Economic Review* 114(9): 2633–2667

Kim, Youngju, Hyunjoon Lim & Youngjin Yun (2024). "International transmission of the US dollar liquidity shock: The channel of FX borrowing and lending". *Journal of International Economics* 150: 103907

Klapper, Leora, Luc Laeven & Raghuram Rajan (2012). "Trade credit contracts". *The Review of Financial Studies* 25(3): 838–867

Levchenko, Andrei A, Logan T Lewis & Linda L Tesar (2010). "The Collapse of International Trade during the 2008–09 Crisis: In Search of the Smoking Gun". *IMF Economic Review* 58(2): 214–253

Levich, Richard M (2012). "FX counterparty risk and trading activity in currency forward and futures markets". *Review of Financial Economics* 21(3): 102–110

Liao, Gordon & Tony Zhang (2020). "The Hedging Channel of Exchange Rate Determination". *International Finance Discussion Papers* 1283, Washington, DC: Board of Governors of the Federal Reserve System

Liao, Gordon Y (2020). "Credit migration and covered interest rate parity". *Journal of Financial Economics* 138(2): 504–525

Lilley, Andrew, Matteo Maggiori, Brent Neiman & Jesse Schreger (2022). "Exchange rate reconnect". *Review of Economics and Statistics* 104(4): 845–855

Ma, Sai & Tim Schmidt-Eisenlohr (2023). "The Financial Channel of the Exchange Rate and Global Trade"

Maggiori, Matteo, Brent Neiman & Jesse Schreger (2019). "The rise of the dollar and fall of the Euro as international currencies". In *AEA Papers and Proceedings*, volume 109, pp. 521–26

Manova, Kalina (2013). "Credit constraints, heterogeneous firms, and international trade". *Review of Economic Studies* 80(2): 711–744

Miglioretti, Diana L & Patrick J Heagerty (2007). "Marginal modeling of nonnested multilevel data using standard software". *American journal of epidemiology* 165(4): 453–463

Muûls, Mirabelle (2015). "Exporters, importers and credit constraints". *Journal of International Economics* 95(2): 333–343

Obstfeld, Maurice & Haonan Zhou (2022). "The global dollar cycle". *Brookings Papers on Economic Activity* 2022(2): 361–447

Ollivaud, Patrice & Cyrille Schwellnus (2015). "Does the post-crisis weakness of global trade solely reflect weak demand?"

Pinnington, James & Maral Shamloo (2016). "Limits to arbitrage and deviations from covered interest rate parity". *Technical report*, Bank of Canada

Rajan, Raghuram G. & Luigi Zingales (1998). "Financial Dependence and Growth". *The American Economic Review* 88(3): 559–586. URL http://www.jstor.org/stable/116849

Rime, Dagfinn, Andreas Schrimpf & Olav Syrstad (2022). "Covered Interest Parity Arbitrage". *Review of Financial Studies* 35(11) (November): 5185–5227

Schmidt-Eisenlohr, Tim (2013). "Towards a theory of trade finance". *Journal of International Economics* 91(1): 96–112

Tang, Ke & Haoxiang Zhu (2016). "Commodities as collateral". *The Review of Financial Studies* 29(8): 2110–2160

Thompson, Samuel B (2011). "Simple formulas for standard errors that cluster by both firm and time". *Journal of financial Economics* 99(1): 1–10

Wu, Wenfeng, Michael Firth & Oliver M Rui (2014). "Trust and the provision of trade credit". *Journal of Banking & Finance* 39: 146–159

Online Appendix

Contents

A.1 Data appendix 34
A.2 Table appendix 36
A.3 Additional robustness checks 45
A.4 Dollar liquidity of the trading partners 55
A.5 Trade intensity with the United States alleviates firms' dependence on CCB . . . 57
A.6 Figure appendix 59
A.7 Full set results for the 1-year tenor estimations 61

Online Appendix (Not for Publication)

A.1 Data appendix

This section gives information on the data used in the paper. In particular, the descriptive statistics of the firms from Chile are presented in Table A.1, while the sector classification applied in the baseline (6) is shown in Table A.2.

Table A.1: Descriptive statistics for firms in Chile[†]

	Exporting firms		
	2009	2016	2022
No. of firms	7,518	8,181	11,080
No. of destinations	191	198	194
No. of measure of unit	9	9	8
Exports volume (net kg)	167,863.20	192,818.90	152,687.80
Exports value (USD)	147,030.90	148,512.40	220367.00
	Importing firms		
	2009	2016	2022
No. of firms	30,199	41,441	15,491
No. of origins	170	176	176
No. of measure of unit	11	11	11
Imports volume (net kg)	52,662.98	50,877.52	52,936.34
Imports value(USD)	34,779.28	34,046.53	57,735.93

[†] I report the mean values for exports (imports) volume and value in this table. For the volume, only those measured in kilograms are counted.

Table A.2: 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

[†] The sector classification follows the guidelines provided by the World Integrated Trade Solution (WITS)."

A.2 Table appendix

For the interest of space, some results are not reported in the main text but presented here instead. First, the results for the value specification correspond to the baseline (6) are shown in Table A.3, while the robustness results with variations in model specification and variable measurement for the trade value are presented in Table A.4. Next, I report the results for (5) where currency exposure is replaced by the U.S. dollar exposure, U.S. dollar dummy, and currency liquidity indicator in Tables A.5, A.6 and A.7, respectively. Subsequently, the regression results for the alternative sector intensity SI' are reported in Table A.8, and the results for falsification test with value estimation prior to the GFC for the baseline (4) are shown in Table A.9. Furthermore, the results for value specification for the comparison between the broad dollar index and cross-currency basis are shown in Table A.10. Finally, I report the estimation results for the heterogeneity by firm size in Table A.11, and the volume estimations for the CCB in China and Chile at the one-year tenor in Table A.12, respectively.

Table A.3: The effects of dollar liquidity with firms' sector intensity on trade *value* in Chile[†]

	All counterparties			U.S. only			Excluding U.S.		
	(1) OLS	(2) IV1	(3) IV2	(4) OLS	(5) IV1	(6) IV2	(7) OLS	(8) IV1	(9) IV2
Imports value									
$SI \times \Delta CCB\_Chile\_3m$	0.4800**	0.6370*	0.6084*	0.4432**	0.6238*	0.5457*	0.4879**	0.6405*	0.6246**
	(0.1631)	(0.2991)	(0.2749)	(0.1530)	(0.3053)	(0.2755)	(0.1664)	(0.2989)	(0.2758)
Observations	837,548	837,548	801,276	154,417	154,417	148,031	683,131	683,131	653,245
F	8.66	4.53	4.90	8.40	4.17	3.92	8.60	4.59	5.13
Cragg-Donald F		806066.00	564816.53		177494.76	110402.38		637155.91	462539.55
Kleibergen-Paap rk LM		4.95**	5.80*		4.95**	5.64*		4.95**	5.80*
Hansen J			0.89			1.90			0.60
Exports value									
$SI \times \Delta CCB\_Chile$	0.3518***	0.3865**	0.3865**	0.3039*	0.3001*	0.3036*	0.3563***	0.3954**	0.3953**
	(0.1043)	(0.1311)	(0.1315)	(0.1392)	(0.1624)	(0.1620)	(0.1020)	(0.1294)	(0.1296)
Observations	132,212	132,212	132,193	10,583	10,583	10,572	121,629	121,629	121,621
F	11.37	8.69	8.64	4.77	3.42	3.51	12.19	9.34	9.30
Cragg-Donald F		448602.45	225918.92		70,312.82	35,310.30		392485.00	198059.20
Kleibergen-Paap rk LM		4.68**	5.02*		4.50**	5.09*		4.70**	5.00*
Hansen J			0.09			1.42			0.03

[†] This table reports the regression results between the yearly changes in imports and exports *values* for firms in Chile and their trade in sector intensity interacted with the one-year lagged dollar liquidity condition, measured as the yearly change in the cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor. SI is a ratio of the trade value of a certain sector for a firm to the total trade value of that firm, which is instrumented with the one-year lagged sector currency exposure (IV1 specification) and both the lagged sector currency exposure and one-year lagged sector intensity at the country level (IV2 specification). Test statistics for instrument quality are the Kleibergen-Paap rk LM statistic, Cragg-Donald Wald 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 IV2 specifications, and 16.4 for IV1 specifications. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Sensitivity of cross-currency basis and trade *value* 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		
	(1a[§])	(1b[§])	(1c[§])	(2a)	(2b)	(2c)	(3a)	(3b)	(3c)	(4a)	(4b)	(4c)	(5a)	(5b)	(5c)	(6a)	(6b)	(6c)
Imports																		
Dollar liquidity	0.3441***	0.3771***	0.7156***	0.0878	0.0980	0.1640	0.3242**	0.3457*	0.7599*	0.3199*	0.3447*	0.6515*	0.0435*	0.0465*	0.1021*	0.3216**	0.3470**	0.6453*
	(0.0749)	(0.0859)	(0.1694)	(0.2211)	(0.2424)	(0.4541)	(0.1410)	(0.1578)	(0.3576)	(0.1404)	(0.1589)	(0.3069)	(0.0245)	(0.0249)	(0.0573)	(0.1403)	(0.1572)	(0.3028)
R^2	0.141	0.141	0.007	0.133	0.133	0.001	0.139	0.138	0.005	0.115	0.114	0.005	0.045	0.045	0.000	0.142	0.141	0.005
Observations	837,548	837,548	837,548	837,548	837,548	837,548	558,408	558,408	558,408	767,906	767,906	767,906	1,464,895	1,464,895	1,464,895	833,359	833,359	833,359
Exports																		
Dollar liquidity	0.3279***	0.3488***	0.4024***	0.0240	0.0268	0.0306	0.3198**	0.3382**	0.3780**	0.3188**	0.3353**	0.3869**	0.0468	0.0478	0.0562	0.3221**	0.3371**	0.3879**
	(0.0445)	(0.0487)	(0.0531)	(0.1976)	(0.2117)	(0.2433)	(0.1040)	(0.1144)	(0.1255)	(0.1075)	(0.1169)	(0.1331)	(0.0319)	(0.0329)	(0.0383)	(0.1079)	(0.1168)	(0.1329)
R^2	0.141	0.141	0.016	0.125	0.125	0.000	0.136	0.135	0.013	0.136	0.136	0.012	0.057	0.057	0.000	0.139	0.138	0.012
Observations	132,212	132,193	132,212	132,212	132,193	132,212	121,213	121,194	121,213	132,169	132,169	132,169	283,720	283,720	283,720	131,803	131,784	131,803

	Est: unit FE			Est: currency-unit FE			Est: Driscoll-Kraay			Cluster: country			Cluster: product			Cluster: country product		
	(7a)	(7b)	(7c)	(8a)	(8b)	(8c)	(9a)	(9b)	(9c)	(10a)	(10b)	(10c)	(11a)	(11b)	(11c)	(12a)	(12b)	(12c)
Imports																		
Dollar liquidity	0.3205**	0.3469*	0.6494*	0.3266**	0.3526**	0.6584*	0.3266*	0.3526*	0.4979**	0.3155**	0.3412**	0.6370*	0.3155**	0.3412**	0.6370*	0.3155**	0.3412**	0.6370*
	(0.1403)	(0.1583)	(0.3058)	(0.1431)	(0.1601)	(0.3097)	(0.1571)	(0.1761)	(0.1844)	(0.1288)	(0.1444)	(0.2991)	(0.1332)	(0.1512)	(0.2991)	(0.1245)	(0.1402)	(0.2991)
R^2	0.137	0.136	0.005	0.140	0.140	0.005				0.138	0.137	0.005	0.138	0.137	0.005	0.138	0.137	0.005
Observations	817,249	817,249	817,249	812,030	812,030	812,030	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548	837,548
Exports																		
Dollar liquidity	0.3191**	0.3361**	0.3874**	0.3229**	0.3382**	0.3890**	0.3229**	0.3382**	0.3574***	0.3186**	0.3352**	0.3865**	0.3186**	0.3352**	0.3865**	0.3186***	0.3352**	0.3865**
	(0.1055)	(0.1152)	(0.1305)	(0.1077)	(0.1166)	(0.1325)	(0.1064)	(0.1150)	(0.1015)	(0.1031)	(0.1123)	(0.1311)	(0.1034)	(0.1138)	(0.1311)	(0.1007)	(0.1105)	(0.1311)
R^2	0.141	0.140	0.012	0.143	0.143	0.013				0.136	0.136	0.012	0.136	0.136	0.012	0.136	0.136	0.012
Observations	131,294	131,275	131,294	130,862	130,843	130,862	132,212	132,200	132,212	132,212	132,193	132,212	132,212	132,193	132,212	132,212	132,193	132,212

[†] This table reports the regression between yearly (except where specified) change in imports and exports *values* for firms in Chile and yearly (except where specified) change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at a three-month tenor (except where specified). The sample starts from 2009 to 2022. Country-firm-product level fixed effects are controlled, and robust standard errors clustered at the firm and year levels (except specified) are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

[§] For simplicity, a, b, and c in each column denote ΔCCB_Chile, $CE \cdot \Delta CCB$ and $SI \cdot \Delta CCB$, respectively, corresponding to the three baselines described in section 2.2.

Table A.5: The effects of dollar liquidity with firms' *dollar* exposure on trade in Chile[†]

	All counterparties			U.S. only			Excluding U.S.		
	(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	0.3203*	0.3209*	0.3377*	0.2976*	0.3006*	0.3039*	0.3270*	0.3268*	0.3484*
	(0.1549)	(0.1558)	(0.1585)	(0.1458)	(0.1485)	(0.1492)	(0.1582)	(0.1584)	(0.1632)
R^2	0.136	0.134	0.136	0.128	0.123	0.126	0.138	0.137	0.139
Volume									
Dollar exposure · ΔCCB_Chile	0.3175*	0.3207*	0.3307*	0.3136*	0.3178*	0.3123*	0.3186*	0.3216*	0.3366*
	(0.1661)	(0.1696)	(0.1641)	(0.1567)	(0.1585)	(0.1588)	(0.1698)	(0.1738)	(0.1677)
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									
Dollar exposure · ΔCCB_Chile	0.3304**	0.3149**	0.3942**	0.2722*	0.2255	0.4318**	0.3360**	0.3230**	0.3876**
	(0.1142)	(0.1097)	(0.1239)	(0.1431)	(0.1640)	(0.1498)	(0.1126)	(0.1065)	(0.1349)
R^2	0.135	0.140	0.140	0.138	0.152	0.119	0.135	0.139	0.144
Volume									
Dollar exposure · ΔCCB_Chile	0.2997**	0.2793**	0.3629**	0.2214	0.1770	0.3717*	0.3073**	0.2885**	0.3614**
	(0.1227)	(0.1204)	(0.1350)	(0.1584)	(0.1750)	(0.1954)	(0.1203)	(0.1169)	(0.1408)
R^2	0.128	0.134	0.130	0.122	0.136	0.103	0.129	0.133	0.135
Observations	132,193	95,286	11,523	10,572	7,466	1,607	121,621	87,820	9,916
Fixed effects:									
country-firm-product	Y	Y	Y				Y	Y	Y
firm-product				Y	Y	Y			

[†] This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor, interacted with the two-year lagged firm level dollar exposure. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: The effects of dollar liquidity with firms' US dollar dummy on trade in Chile†

	All counterparties			U.S. only			Excluding U.S.		
	(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
firm-product				Y	Y	Y			

† This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor, interacted with the firm-level U.S. dollar dummy. The dummy equals 1 when the invoicing currency is the U.S. dollar, and 0 otherwise. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ *** $p < 0.01$

Table A.7: The effects of dollar liquidity with currency liquidity on firms' trade in Chile[†]

	All counterparties			U.S. only			Excluding U.S.		
	(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
firm-product				Y	Y	Y			

[†] This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor, interacted with the firm-level currency indicator, where it equals 1 if the invoicing currency is U.S. dollar, 0.5 if the invoicing currency is other G10 currencies, and 0 otherwise. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ *** $p < 0.01$

Table A.8: The effects of dollar liquidity with firms' sector intensity (relative to all firms) on trade in Chile†

	All counterparties			U.S. only			Excluding U.S.		
	(1) OLS	(2) IV1	(3) IV2	(4) OLS	(5) IV1	(6) IV2	(7) OLS	(8) IV1	(9) IV2
Imports value									
$SI' \cdot \Delta CCB\_Chile$	0.1000***	1.5579**	1.5806**	0.1487**	2.6765*	2.5787*	0.0944**	1.4043**	1.4494**
	(0.0317)	(0.6965)	(0.7027)	(0.0664)	(1.2402)	(1.2293)	(0.0327)	(0.6246)	(0.6339)
Observations	837,548	837,548	801,276	154,417	154,417	148,031	683,131	683,131	653,245
F	9.97	5.00	5.06	5.01	4.66	4.40	8.31	5.06	5.23
Cragg-Donald F		28,780.00	14,006.43		3,142.93	1,566.98		26,549.57	12,967.28
Kleibergen-Paap rk LM		4.34**	4.47		4.41**	4.63*		4.32**	4.44
Hansen J			2.44			1.26			2.56
Exports value									
$SI' \cdot \Delta CCB\_Chile$	0.0278***	0.2475***	0.2456**	0.0236**	0.2834*	0.2837*	0.0281***	0.2451***	0.2435***
	(0.0067)	(0.0796)	(0.0799)	(0.0079)	(0.1414)	(0.1427)	(0.0067)	(0.0765)	(0.0767)
Observations	132,212	132,212	132,193	10,583	10,583	10,572	121,629	121,629	121,621
F	17.36	9.68	9.46	8.88	4.02	3.95	17.52	10.27	10.08
Cragg-Donald F		11,573.80	5,881.72		749.07	376.98		10,871.47	5,525.84
Kleibergen-Paap rk LM		4.06**	4.13		3.78*	3.76		4.07**	4.14
Hansen J			0.17			1.29			0.12

† This table reports the regression results between the yearly changes in imports and exports *values* for firms in Chile and their trade in sector intensity interacted with the one-year lagged dollar liquidity condition, measured as the yearly change in the cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor. SI' is the ratio of a firm's trade value within a particular sector to the total trade value of that sector, measured as percentage points, which is instrumented with the one-year lagged sector currency exposure (IV1 specification) and both the lagged sector currency exposure and one-year lagged sector intensity at the country level (IV2 specification). Test statistics for instrument quality are the Kleibergen-Paap rk LM statistic, Cragg-Donald Wald 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 IV2 specifications, and 16.4 for IV1 specifications. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.9: The effects of dollar liquidity on trade *value* in Chile, pre-crisis period†

	All counterparties			U.S. only			Excluding U.S.		
	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
firm-product				Y	Y	Y			

† This table reports the regression results between the yearly changes in imports and exports *values* for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor. The sample starts from 2003 to 2007. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.10: The effects of dollar liquidity on trade *value* in Chile: broad dollar versus CCB[†]

	Imports			Exports		
	(1)	(2)	(3)	(4)	(5)	(6)
ΔCCB_Chile		0.3867***	0.4009***		0.3090***	0.3265***
		(0.0571)	(0.0411)		(0.0694)	(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	Y	Y
R^2	0.133	0.142	0.144	0.131	0.140	0.143
Observations	801,720	801,720	801,720	128,203	128,203	128,203

[†] This table reports the regression results between the yearly changes in trade (both imports and exports) *value* of firms in Chile and yearly change of the one-year lagged U.S. dollar index, or the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the US dollar at the three-month tenor, and both. 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. Country-firm-product level fixed effects are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$,

Table A.11: The effects of dollar liquidity on trade in Chile, 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 results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor, interacted with a firm size indicator. A firm is classified as a large importer (exporter) if its total import (export) value during the sample period ranks in the top third. Firms in the bottom third are considered small, while those in the middle third are categorized as medium-sized. The sample starts from 2009 to 2022. The country-product level fixed effects are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.12: The effects of the one-year CCB on trade *value*: Chile versus China[†]

	Chile			China		
	(1) All counterparties	(2) U.S. only	(3) Excluding U.S.	(4) All counterparties	(5) U.S. only	(6) Excluding U.S.
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
firm-product		Y			Y	

[†] This table reports the results for trade *value* Chile and China, where the one-year tenor cross-currency basis is used for the respective local currency against the U.S. 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 effects are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

A.3 Additional robustness checks

Variations in currency exposure In the first shift-share style specification (5), currency exposure is lagged by two years to ensure its exogeneity to the one-year lagged CCB of Chile. One might argue that currency exposure should be contemporaneous with the CCB to better explore how dollar liquidity affects firms' trade through their currency exposure, as this guarantees that both the shock and the share variable occur simultaneously. Therefore, I regress the specification below:

$$\Delta Y_{fpciut} = \alpha' CE_{fpi,t-1} \cdot \Delta CCB\_Chile_{t-1} + \beta'_{fpc} + \varepsilon'_{fpciut} \tag{A.1}$$

The corresponding results are reported in Table A.13, which prove qualitatively consistent with the baseline. As an additional robustness check, currency exposure is treated as predetermined using its 2009 value. I re-run the estimations and present these results in Table A.14. Furthermore, I employ a *value*-based measure of currency exposure instead of the frequency-based one as described in Section 2.2. The regression results are reported in Table A.15. Again, the positive effects of CCB on firm's trade persist.

Sector intensity with a lag of two years In the baseline (6), the firm-level sector intensity is contemporaneous with the dependent variable. While sector intensity should be exogenous, as it is instrumented with lagged sector currency exposure and country-level sector intensity, it is worth exploring a specification where the two-year lagged sector intensity interacted with the one-year lagged CCB of Chile. Consistent with the baseline approach, I instrument the two-year lagged sector intensity with its two-year lagged sector currency exposure (IV1) and an instrument set comprising the two-year lagged sector currency exposure and the three-year lagged sector intensity at the country level (IV2). The results are reported in Table A.16. Once again, the positive and significant coefficient is observed across all specifications, despite the insignificant Kleibergen-Paap *rk LM* statistic for all IV2 estimations. Overall, these findings provide further evidence of the role of dollar liquidity plays on firms' trade in Chile.

Different standard errors clustering In the baseline specification, I cluster the standard errors at the firm and year levels. Additionally, I apply clustering at the invoicing currency, unit of measurement, and both for the baseline model (4) with the full sample.[67]The results, presented in Table A.17, show that the coefficient on ΔCCB_Chile remains positive and statistically significant, despite the variations in standard error clustering.

Full results for specification with currency fixed effects While I report some results for the specification (4) with currency fixed effects in Section 3.2, I show the full results for different samples in Table A.18. Overall, the findings remain consistent with the baseline, confirming that dollar liquidity has a positive impact on trade in Chile.

Variations in liquidity measure While the CCB measure captures well how costly it is for foreign borrowers to obtain dollars, one might still think it is a relative measure and what matters should be the real cost. To take this into account, I calculate the synthetic dollar rate[68] for Chilean borrowers, and use its lagged differences as an alternative dollar liquidity access for regressions. The corresponding results are reported in Table A.19. Interestingly, a negative and statistically significant coefficient is found across different specifications for both imports and exports volumes. This suggests that a hike in the cost of accessing dollar liquidity discourages trade transactions, which aligns well with the baseline findings. I also perform a placebo test by treating the *euro liquidity*[69] as the independent variable in the estimations. I report these results in Table A.20. Unsurprisingly, none of the coefficient on ΔCCB_CLPEUR is found

[67]Full sample refers to all counterparties and all units of measurement.

[68]The term inside the square brackets of Equation (3).

[69]It is measured as the cross-currency basis of the Chilean Peso against the Euro, also at the three-month tenor.

significant, implying that the euro liquidity access does not affect firm's trade transactions in Chile. Overall, these analyses remain consistent with the baseline, providing further evidence on the role that dollar liquidity plays in affecting trade flows at firm-level in Chile.

Sector intensity with U.S. dollar dummy As an alternative robustness test, I estimate a specification where the independent variable is the sector intensity interacted with both the dollar liquidity condition and a U.S. dollar dummy. Similarly, I perform regressions for both imports and exports, with the results presented in Table A.21. The coefficient stays consistently positive and statistically significant across all specifications, further reinforcing the effect of dollar liquidity on firms' trade in Chile.

Additional robustness for the firm size heterogeneity I further control for firm-level fixed effects[70] and re-estimate the regressions as done for the interaction with the firm size dummy, as reported in Section 4.4. The corresponding results are presented in Table A.22. Again, the coefficient on the interaction between large firms and the CCB of Chile remains uniformly positive, although not always statistically significant. Additionally, I consider a continuous measure of firm size, where firm size is calculated as the ratio of a firm's trade value to the total trade value of all firms over the entire sample period. I then interact firm size with the dollar liquidity condition and run regressions for both imports and exports as a robustness check. These results are reported in Table A.23. Overall, the coefficient on the interaction term is positive and statistically significant for both imports and exports, further supporting the conclusion that larger firms tend to trade more when the dollar liquidity condition improves in Chile.

[70]Previously, I only controlled for country-product level fixed effects, as the firm size dummy was constructed based on the firm's trade value, which already captures some firm characteristics and could be collinear with firm fixed effects. Here, I additionally control for firm-level fixed effects and find that the coefficient on the individual firm size dummy is absorbed due to collinearity.

Table A.13: The effects of dollar liquidity with firms' (one-year lagged) currency exposure on trade in Chile†

	All counterparties			U.S. only			Excluding U.S.		
	(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									
CE · ΔCCB_Chile	0.3266*	0.3317*	0.3321*	0.2852*	0.2940*	0.2771	0.3366*	0.3407*	0.3465*
	(0.1614)	(0.1611)	(0.1682)	(0.1499)	(0.1512)	(0.1550)	(0.1646)	(0.1638)	(0.1729)
R^2	0.137	0.135	0.136	0.128	0.123	0.125	0.139	0.138	0.139
Volume									
CE · ΔCCB_Chile	0.3165	0.3245	0.3147	0.2972*	0.3086*	0.2815	0.3211	0.3283	0.3234
	(0.1830)	(0.1857)	(0.1834)	(0.1619)	(0.1619)	(0.1664)	(0.1888)	(0.1921)	(0.1892)
R^2	0.136	0.133	0.139	0.125	0.124	0.123	0.138	0.135	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									
CE · ΔCCB_Chile	0.3310**	0.3135**	0.3908**	0.2647	0.2197	0.4099**	0.3374**	0.3218**	0.3876**
	(0.1174)	(0.1117)	(0.1344)	(0.1466)	(0.1661)	(0.1495)	(0.1158)	(0.1085)	(0.1461)
R^2	0.135	0.140	0.140	0.139	0.153	0.118	0.135	0.139	0.144
Volume									
CE · ΔCCB_Chile	0.2975**	0.2764**	0.3469**	0.2134	0.1740	0.3316	0.3055**	0.2855**	0.3495*
	(0.1275)	(0.1231)	(0.1483)	(0.1610)	(0.1756)	(0.2000)	(0.1253)	(0.1196)	(0.1554)
R^2	0.128	0.134	0.130	0.122	0.138	0.102	0.129	0.133	0.135
Observations	132,187	95,284	11,523	10,568	7,466	1,607	121,619	87,818	9,916
Fixed effects:									
country-firm-product	Y	Y	Y				Y	Y	Y
firm-product				Y	Y	Y			

† This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor interacted with the *one*-year lagged firm level currency exposure. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.14: The effects of dollar liquidity with firms' currency exposure at 2009 value on trade in Chile†

	All counterparties			U.S. only			Excluding U.S.		
	(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									
CE · ΔCCB_Chile	0.3218*	0.3217*	0.3401*	0.2832*	0.2869*	0.2853	0.3317*	0.3305*	0.3551*
	(0.1601)	(0.1594)	(0.1691)	(0.1515)	(0.1519)	(0.1605)	(0.1630)	(0.1619)	(0.1732)
R^2	0.098	0.108	0.103	0.085	0.097	0.090	0.102	0.111	0.107
Volume									
CE · ΔCCB_Chile	0.3141*	0.3105	0.3410*	0.3001*	0.3045*	0.2966*	0.3177*	0.3120	0.3532*
	(0.1699)	(0.1760)	(0.1631)	(0.1549)	(0.1593)	(0.1525)	(0.1748)	(0.1814)	(0.1679)
R^2	0.096	0.105	0.102	0.085	0.097	0.090	0.099	0.108	0.105
Observations	598,719	405,517	176,036	112,639	75,185	35,064	486,080	330,332	140,972
Panel B: Exports									
Value									
CE · ΔCCB_Chile	0.3215**	0.3073**	0.3656**	0.2630*	0.2267	0.3637*	0.3268**	0.3140**	0.3660**
	(0.1230)	(0.1187)	(0.1363)	(0.1362)	(0.1593)	(0.1626)	(0.1228)	(0.1164)	(0.1537)
R^2	0.123	0.130	0.129	0.114	0.138	0.096	0.124	0.129	0.135
Volume									
CE · ΔCCB_Chile	0.2884**	0.2674*	0.3326*	0.2182	0.1780	0.3366	0.2948**	0.2749**	0.3319*
	(0.1308)	(0.1268)	(0.1612)	(0.1611)	(0.1747)	(0.2247)	(0.1289)	(0.1239)	(0.1689)
R^2	0.117	0.124	0.120	0.101	0.122	0.090	0.119	0.124	0.126
Observations	111,522	79,296	9,116	8,491	5,938	1,310	103,031	73,358	7,806
Fixed effects:									
country-firm-product	Y	Y	Y				Y	Y	Y
firm-product				Y	Y	Y			

† This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor interacted with the 2009 firm-level currency exposure. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.15: The effects of dollar liquidity with firms' currency exposure (*value-based*) on trade in Chile[†]

	All counterparties			U.S. only			Excluding U.S.		
	(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									
CE · ΔCCB_Chile	0.3379*	0.3382*	0.3559**	0.2971*	0.2999*	0.3047*	0.3477**	0.3473**	0.3693**
	(0.1544)	(0.1541)	(0.1610)	(0.1437)	(0.1458)	(0.1475)	(0.1575)	(0.1564)	(0.1659)
R^2	0.137	0.135	0.137	0.128	0.123	0.126	0.140	0.138	0.140
Volume									
CE · ΔCCB_Chile	0.3313*	0.3335*	0.3447*	0.3130*	0.3196*	0.3070*	0.3357*	0.3368*	0.3545*
	(0.1742)	(0.1771)	(0.1728)	(0.1544)	(0.1552)	(0.1578)	(0.1796)	(0.1831)	(0.1780)
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									
CE · ΔCCB_Chile	0.3352**	0.3171**	0.3986**	0.2696*	0.2228	0.4234**	0.3415**	0.3255**	0.3944**
	(0.1156)	(0.1103)	(0.1296)	(0.1441)	(0.1647)	(0.1482)	(0.1141)	(0.1071)	(0.1415)
R^2	0.136	0.140	0.141	0.138	0.152	0.119	0.135	0.139	0.144
Volume									
CE · ΔCCB_Chile	0.3029**	0.2805**	0.3625**	0.2175	0.1739	0.3565*	0.3111**	0.2899**	0.3635**
	(0.1253)	(0.1214)	(0.1421)	(0.1594)	(0.1755)	(0.1917)	(0.1230)	(0.1179)	(0.1496)
R^2	0.129	0.134	0.130	0.122	0.136	0.103	0.129	0.134	0.135
Observations	132,193	95,286	11,523	10,572	7,466	1,607	121,621	87,820	9,916
Fixed effects:									
country-firm-product	Y	Y	Y				Y	Y	Y
firm-product				Y	Y	Y			

[†] This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor interacted with the firm-level currency exposure based on *trade values*. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.16: The effects of dollar liquidity with (two-year lagged) firms' sector intensity on trade volume in Chile†

	All counterparties			U.S. only			Excluding U.S.		
	(1) OLS	(2) IV1	(3) IV2	(4) OLS	(5) IV1	(6) IV2	(7) OLS	(8) IV1	(9) IV2
Imports volume									
$SI \cdot \Delta CCB\_Chile$	0.4833**	0.7815**	0.7255**	0.4342**	0.7632**	0.6835**	0.4942**	0.7867**	0.7375**
	(0.1909)	(0.2947)	(0.2732)	(0.1641)	(0.2858)	(0.2474)	(0.1979)	(0.2986)	(0.2820)
Observations	392,182	392,182	389,807	76,250	76,250	75,678	315,932	315,932	314,129
F	6.41	7.03	7.05	7.00	7.13	7.63	6.24	6.94	6.84
Cragg-Donald F		408340.23	291676.33		93,416.22	57,932.95		320067.22	238991.34
Kleibergen-Paap rk LM		3.32*	3.53		3.33*	3.45		3.31*	3.55
Hansen J			1.64			1.70			1.57
Exports volume									
$SI \cdot \Delta CCB\_Chile$	0.3544***	0.4128***	0.4129***	0.3407*	0.3647*	0.3663*	0.3558***	0.4182***	0.4184***
	(0.1008)	(0.1146)	(0.1152)	(0.1544)	(0.1764)	(0.1771)	(0.0959)	(0.1084)	(0.1090)
Observations	68,929	68,929	68,928	5,799	5,799	5,799	63,130	63,130	63,129
F	12.36	12.98	12.85	4.87	4.27	4.28	13.78	14.90	14.74
Cragg-Donald F		256011.04	128451.22		44,968.41	22,741.33		221270.45	111177.84
Kleibergen-Paap rk LM		3.23*	3.36		3.12*	3.25		3.24*	3.37
Hansen J			0.20			0.71			0.10

† This table reports the regression results between the yearly changes in imports and exports *volume* for firms in Chile and their the two-year lagged sector intensity in trade, interacted with the one-year lagged dollar liquidity condition, measured as the yearly change in the cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor. SI is a ratio of the trade value of a certain sector for a firm to the total trade value of that firm with a two-year lag, which is instrumented with the two-year lagged sector currency exposure (IV1 specification) and both the lagged sector currency exposure and three-year lagged sector intensity at the country level (IV2 specification). Test statistics for instrument quality are the Kleibergen-Paap rk LM statistic, Cragg-Donald Wald 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 IV2 specifications, and 16.4 for IV1 specifications. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.17: 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 results between the yearly changes in trade value and volume for firms in Chile and yearly change in one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor. The sample starts from 2009 to 2022. Country-firm-product level fixed effects are controlled, and robust standard errors clustered at firm, year and the respective additional levels listed in the column are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.18: 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	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	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 results between the yearly changes in imports and exports for 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 effects are controlled, and robust standard errors clustered at the firm and year level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.19: The effects of dollar liquidity (*synthetic rate*) on firms' trade in Chile†

	All counterparties			U.S. only			Excluding U.S.		
	All units (1)	Weight (2)	Quantity (3)	All units (4)	Weight (5)	Quantity (6)	All units (7)	Weight (8)	Quantity (9)
Panel A: Imports volume									
$\Delta Synthetic$	-0.0024***	-0.0025**	-0.0025***	-0.0023***	-0.0023***	-0.0023***	-0.0024**	-0.0025**	-0.0025***
	(0.0008)	(0.0008)	(0.0007)	(0.0007)	(0.0007)	(0.0007)	(0.0008)	(0.0008)	(0.0008)
R^2	0.138	0.135	0.141	0.128	0.126	0.126	0.141	0.138	0.145
Observations	837,548	555,831	248,520	154,417	100,012	48,751	683,131	455,819	199,769
Panel B: Exports volume									
$\Delta Synthetic$	-0.0023***	-0.0022***	-0.0027***	-0.0019*	-0.0017	-0.0029**	-0.0023***	-0.0023***	-0.0027***
	(0.0006)	(0.0006)	(0.0007)	(0.0009)	(0.0010)	(0.0012)	(0.0006)	(0.0006)	(0.0008)
R^2	0.132	0.137	0.132	0.125	0.139	0.105	0.133	0.137	0.136
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
firm-product				Y	Y	Y			

† This table reports the regression between yearly change in imports and exports volumes for firms in Chile and yearly change in the one-year lagged *synthetic dollar rate* for Chilean firms at the three-month tenor. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.20: Placebo: the effects of *euro* liquidity on firms' trade in Chile†

	All counterparties			U.S. only			Excluding U.S.		
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	Quantity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Imports volume									
ΔCCB_CLPEUR	0.0002	0.0004	-0.0001	0.0002	0.0004	-0.0002	0.0002	0.0004	-0.0000
	(0.0008)	(0.0008)	(0.0008)	(0.0007)	(0.0007)	(0.0007)	(0.0008)	(0.0009)	(0.0008)
R^2	0.133	0.129	0.137	0.123	0.121	0.121	0.136	0.132	0.140
Observations	837,548	555,831	248,520	154,417	100,012	48,751	683,131	455,819	199,769
Panel B: Exports volume									
ΔCCB_CLPEUR	0.0006	0.0004	0.0007	0.0001	-0.0001	0.0002	0.0006	0.0005	0.0008
	(0.0008)	(0.0008)	(0.0010)	(0.0009)	(0.0009)	(0.0016)	(0.0008)	(0.0008)	(0.0010)
R^2	0.122	0.127	0.126	0.119	0.134	0.098	0.123	0.127	0.131
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
firm-product				Y	Y	Y			

† This table reports the regression between yearly change in imports and exports (both volume and value) for firms in Chile and yearly change in the one-year lagged synthetic dollar rate for Chilean firms at the three-month tenor. The sample starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.21: The effects of dollar liquidity on firms' trade interacted with sector intensity and U.S. dollar dummy in Chile†

	All counterparties			U.S. only			Excluding U.S.		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All units	Weight	Quantity	All units	Weight	Quantity	All units	Weight	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
firm-product				Y	Y	Y			

† This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the US dollar at the three-month tenor, interacted with the currency exposure and U.S. dollar dummy. The sample starts from 2009 to 2022. Country-firm-product level fixed effects are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.22: The effects of dollar liquidity on trade, conditional on firms' size with additional 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 results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor, interacted with a firm size indicator. A firm is classified as a large importer (exporter) if its total import (export) value during the sample period ranks in the top third. Firms in the bottom third are considered small, while those in the middle third are categorized as medium-sized.. The sample starts from 2009 to 2022. The country-product-*firm* level fixed effects are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.23: The effects of dollar liquidity on trade, conditional on firms' size

	Imports		**Exports**	
	(1) Value	(2) Volume	(3) Value	(4) Volume
$firm\ size$	-3.5726***	-4.2750***	0.8319***	0.8842**
	(1.1187)	(0.6386)	(0.1600)	(0.2890)
ΔCCB_Chile	0.2421*	0.2219	0.2467***	0.2090**
	(0.1210)	(0.1377)	(0.0762)	(0.0870)
$firm\ size \times \Delta CCB\_Chile$	5.0840***	6.9603***	0.8998	1.7326***
	(0.0847)	(1.3138)	(0.6139)	(0.4051)
Fixed effects:				
country-product	Y	Y	Y	Y
R^2	0.006	0.004	0.023	0.018
Observations	909,629	909,629	139,421	139,422

† This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the three-month tenor, interacted with a continuous firm size indicator. Firm size is measured as the ratio of a firm's trade value to the total trade value of all firms during the sample period, which spans from 2009 to 2022. Country-firm-product level fixed effects are controlled, and robust standard errors clustered at the firm and year levels (only year level for exports specifications) are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

A.4 Dollar liquidity of the trading partners

Given the nontrivial impact of dollar financing on both imports and exports activities found among Chilean firms, one might question whether access to dollar liquidity for Chile's trading partners also plays a role. Generally, Chile's imports from (and exports to) a particular country can be seen as that country's exports to (and imports from) Chile. However, the challenge lies in the fact that I only have trade records for each country's transactions with Chile, which do not capture their overall trade flows with the rest of the world. As a result, it is difficult to predict the effect of dollar liquidity on these countries' trade with Chile, particularly as they may not have as strong a trading relationship with Chile compared to larger economies such as the United States.

Nevertheless, I explore this effect by extending the baseline model (4) to consider the dollar liquidity condition of Chile's trading partners, measured as the cross-currency basis of each partner country's currency relative to the U.S. dollar[71] (denoted as $\Delta CCB\_CountParty$). Additionally, I estimate a specification that includes both the dollar financing conditions of Chile and its trading partners, for both imports and exports. The corresponding results are presented in Table A.24.

Interestingly, the coefficient on $\Delta CCB\_CountParty$ reveals an inconsistent pattern between imports (Panel A) and exports (Panel B). While there is little impact on imports, the effect on exports is negative and statistically significant. One possible explanation is that Chile's trading partners may have closer trade or financial relationships with other countries. When dollar liquidity improves, these partners may increase their trade primarily with those countries, rather than with Chile. In this case, the positive wealth effect from better financing conditions could be outweighed by a substitution effect, as partners reallocate their import demand toward their main trading counterparts. This pattern would be consistent with a view that the benefits of improved dollar liquidity are not evenly spread and depend on the structure of trade relationships. In contrast, the coefficient on ΔCCB_Chile remains positive and statistically significant for both imports and exports, highlighting the importance of Chile's dollar liquidity condition for its own trade activities.

[71] Similarly, a one-year lag of the change in the cross-currency basis for the counterparties is used.

Table A.24: The effects of dollar liquidity for trading partners on firm's trade in Chile[†]

	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 results between the yearly changes in imports and exports for firms in Chile and the yearly change in the one-year lagged cross-currency basis of the trading partner's currency against the U.S. dollar at the three-month tenor. The sample starts from 2009 to 2022 for all the specifications. Country-firm-product level fixed effects are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

A.5 Trade intensity with the United States alleviates firms' dependence on CCB

An interesting previous finding is that dollar liquidity seems to matter less for firms' trade when focusing exclusively on their transactions with the United States, particularly in exports. However, examining transactions with U.S. firms alone does not necessarily preclude the possibility that these firms might also trade with other countries, thereby reducing their trade exposure to the United States.[72] Put it another way, it is hard to say that firms exporting to the United States are less impacted by the CCB, as nearly all firms engage in trade with the country. What matters should be the extent of a firm's trade with the United States.

Table A.25: The effects of dollar liquidity on firms' trade *volumes* in Chile, conditional on firms' trade intensity with the United States†

	Imports		Exports	
	(1)	(2)	(3)	(4)
ΔCCB_Chile	0.3164*	0.3254*	0.2913**	0.3174**
	(0.1633)	(0.1724)	(0.1136)	(0.1220)
US intensity	-0.7855***	-0.7708***	-0.7280***	-0.6954***
	(0.1506)	(0.1595)	(0.0968)	(0.0990)
US intensity $\times$ ΔCCB_Chile		-0.0766		-0.2304**
		(0.1081)		(0.0922)
Fixed effects:				
country-firm-product	Y	Y	Y	Y
R^2	0.140	0.140	0.131	0.131
Observations	683,131	683,131	121,630	121,630

† This table reports the regression results between the yearly changes in trade (both imports and exports) *volume* for firms in Chile and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the US dollar at the three-month tenor. *US intensity* is a yearly varying ratio of a firm's trade value with the US to its total trade value. The sample *excludes the U.S. counterparties*, and the sample period starts from 2009 to 2022. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

To further investigate this, I construct a measure of a firm's trade intensity with the United States (denoted as *US intensity*)—defined as the share of its import (or export) value with the United States relative to its total import (or export) value—and either control for it (columns (1) and (3)) or introduce an interaction term between it and ΔCCB_Chile (columns (2) and (4)). I run the regressions for both imports and exports using the sample excluding the U.S.,[73] and I report the results in Table A.25.[74]

[72] For instance, a firm might trade with the United States, with 10% of its exports going there, and the remaining 90% to the rest of the world. An insignificant coefficient on ΔCCB_Chile from an estimation limited to U.S. transactions does not preclude the firm's exposure to trade with other countries, as a firm might still have a substantial share (90% in this case) with the rest of the world.

[73] To interpret the results without too many variations, I focus on the non-U.S. counterparty sample here. However, I also check the full counterparty sample and find qualitatively consistent results. These results are available upon request.

[74] For brevity, I report only the results for volumes in the table. However the values estimations yield qualitatively consistent results, which is available upon request.

Strikingly, the coefficient on *US intensity* is negative and statistically significant for both imports and exports volumes, suggesting that firms trade less with the rest of the world when they trade more intensively with the United States. In terms of the interaction term, the negative coefficient is statistically significant only for exports, indicating that Chilean firms with stronger trade ties to the United States tend to export less when dollar liquidity conditions in the FX market improve. Put it another way, the total effect of CCB on exports should be smaller when considering firms' trade intensity with the United States. This finding provides further evidence on one of the baseline results, where a less significant role for the cross-currency basis is found in the export specifications with U.S. only sample. Overall, these results indicate that access to dollar liquidity through the FX market becomes less relevant to firms' exports when exporters have closer trade relationships with the United States and potentially have alternative funding sources from affiliates or subsidiaries there. This is consistent with Kim *et al.* (2024), who find that overseas banks can support their headquarters by taking advantage of foreign access to funding.

A.6 Figure appendix

I first plot the currency invoicing trends in Chile over the past decade in Figure A.1, with exports shown in the left panel and imports in the right panel. It is clear that the U.S. dollar dominates trade invoicing in the country, accounting for over 90% of exports and 80% of imports.

Figure A.2 illustrates the cross-currency basis of CLP against the U.S. dollar at the 3-month tenor on a yearly frequency, while Figure A.3 shows the cross-currency basis of the Chinese Yuan (CNY) against the U.S. dollar at the 3-month tenor on a daily frequency. Additionally, I show the difference between the one-year and three-month CCB for both the CNY and CLP in Figure A.4. Finally, the volatility of the spot and forward exchange rates for the CNY and CLP is depicted in Figure A.5.

(a) Currency invoicing: Exports (b) Currency invoicing: Imports

Figure A.1: The U.S. dollar has dominated as the invoicing currency for both imports and exports in Chile over the past decade, with imports invoiced in U.S. dollars averaging over 80%, and exports showing an even higher average—exceeding 90%.

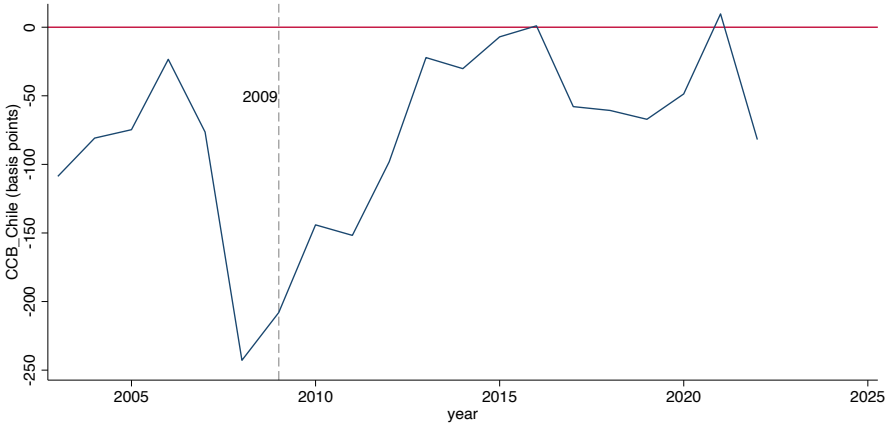


Figure A.2: The cross-currency basis of CLP against USD at the 3 month tenor from 2003 to 2022 at yearly frequency, when the bases are generally negative. The working sample period starts from 2009, as divided by the gray dashed line, witnesses unambiguous negative bases except for the pandemic due to the *in*convenience yield for holding dollars during this period, implying that Chilean firms are indeed in disadvantage of borrowing U.S. dollars from the swap and FX market.

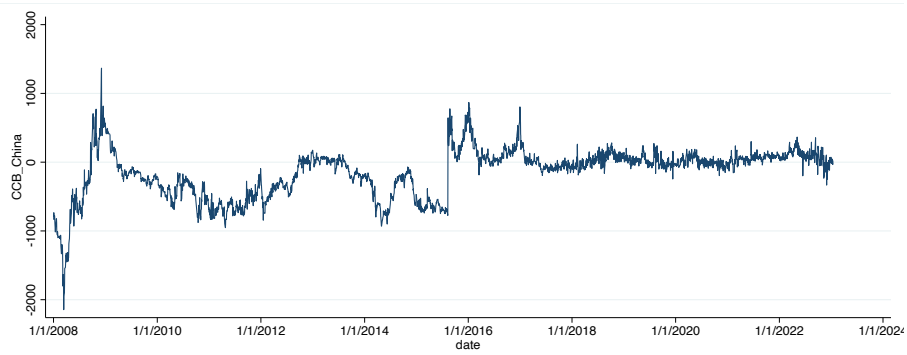


Figure A.3: Cross-currency basis of CNY against USD at the 3 month tenor at the daily frequency

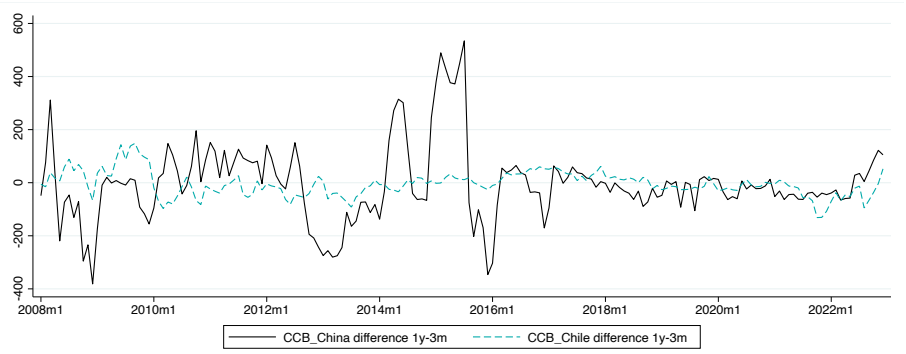
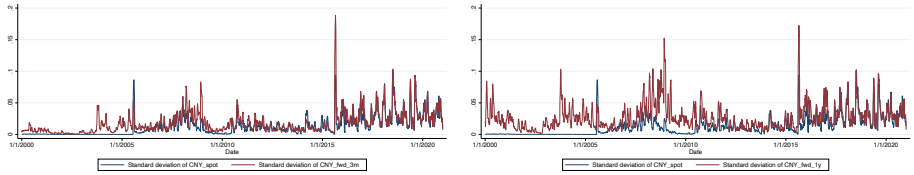
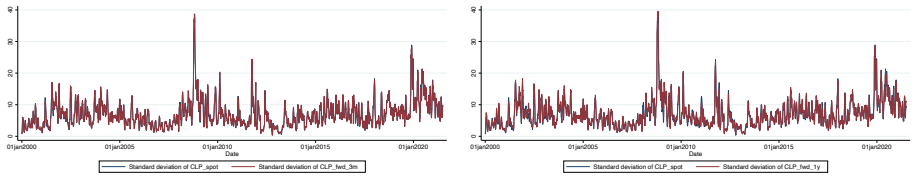


Figure A.4: The difference between one-year and three-month CCB for CNY and CLP



(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 A.5: The (30-day rolling window) volatility for both spot and forward exchange rates (CNY and CLP) is depicted, with each representing the bilateral rate against the U.S. dollar, as indicated in the subcaption. Notably, the standard deviations for the spot and forward exchange rates (both 3-month and 1-year tenors) for the CLP are similar in magnitude. In contrast, the forward exchange rate volatility for the CNY tends to be higher than that of the spot rate, suggesting that the CNY exchange rate adjusts more slowly, which is consistent with China's less flexible exchange rate regime.

A.7 Full set results for the 1-year tenor estimations

I report the full estimation results for the baseline model (4), examining the relationship between trade and the CCB at the one-year tenor in Table A.26 for Chile and Table A.27 for China. The results consistently show that the effects of dollar liquidity on trade are positive and significant across all specifications for China, while it remains insignificant for Chile at the one-year tenor. This suggests that China's less flexible exchange rate regime allows the longer tenor dollar liquidity conditions to have a pronounced impact, as the longer adjustment period remains consistent with the time needed for the exchange rate to reach its long-run equilibrium.

Table A.26: The effects of the 1-year CCB on firms trade in Chile[†]

	All counterparties			U.S. only			Excluding U.S.		
	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

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

Table A.27: The effects of the 1-year CCB on firms trade in China†

	All counterparties			U.S. only			Excluding U.S.		
	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

† This table reports the regression results between the yearly changes in imports and exports (both volume and value) for firms in China and the yearly change in the one-year lagged cross-currency basis of Chilean Peso against the U.S. dollar at the *one-year* tenor. The sample starts from 2009 to 2012. Country-firm-product level fixed effects (where applicable) are controlled, and robust standard errors clustered at the firm and year levels are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$