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Abstract

We show that capital controls (CC), by slowing-down firm debt-growth in the boom, improve firm performance during crises. Exploiting a tax on foreign-currency (FX) debt inflows in Colombia before the Global Financial Crisis (GFC) and multiple firm-level and loan-level administrative datasets, we find that CC reduce FX-debt inflows. Firms with weaker local banking relation nships cannot fully substitute FX-debt with domestic-debt, thereby reducing firm-level total debt and imports during the boom. However, by preemptively reducing firm-level debt, CC boost exports and employment during the subsequent GFC, especially for financially-constrained firms. Moreover, CC do not significantly alter credit allocation between productive and unproductive firms.

Keywords: capital controls; firm FX-debt; real effects; macroprudential policy; capital inflows; crises.

JEL Classification: E58; F34; F38; G01; G21.

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Controles de capital, deuda corporativa y efectos reales: Evidencia en tiempos de Auge y Crisis

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Resumen

Mostramos que los controles de capital (CC), al desacelerar el crecimiento de la deuda de las empresas en el auge, mejoran el desempeño en firmas durante las crisis. Aprovechando un impuesto sobre las entradas de deuda en moneda extranjera (ME) en Colombia antes de la Crisis Financiera Global (CFG) y múltiples bases de datos administrativos a nivel de empresa y préstamo, encontramos que CC reduce las entradas de deuda en ME. Las empresas con relaciones bancarias locales más débiles no pueden sustituir completamente la deuda en divisas por deuda local, lo que reduce la deuda total a nivel de empresa y las importaciones durante el auge. Sin embargo, al reducir de manera preventiva la deuda a nivel de empresa, CC impulsa las exportaciones y el empleo durante la CFG, especialmente para las empresas con limitaciones financieras. Además, CC no altera significativamente la asignación de crédito entre empresas productivas e improductivas.

Clasificación JEL: E58; F34; F38; G01; G21.

Palabras Clave: controles de capital; deuda en moneda extranjera; efectos reales; política macroprudencial; entradas de capital; crisis.

1. Introduction

Firms outside the U.S. have massively borrowed in dollars, especially in Emerging Markets (EM) (e.g. IMF, 2015; FSB, 2022). Global banks –and local banks borrowing in dollars – have been key intermediaries for this increase in firms' foreign dollar funding (Ivashina, Scharfstein and Stein, 2015; Bräuning and Ivashina, 2019, 2020; IMF, 2019). Cross-border loans, however, are especially fragile during financial downturns (De Haas and Van Horen, 2013; Giannetti and Laeven, 2012; Hale, Kapan and Minoiu, 2020). Moreover, large capital inflows tend to precede credit booms, often followed by financial crises (Jordà, Schularick, and Taylor, 2011; Gourinchas and Obstfeld, 2012; Danielsson, Valenzuela and Zer, 2022). More generally, high corporate leverage, especially if FX-financed, is a first-order risk for EM (Acharya et al., 2015; IMF, 2015; Alfaro et al., 2019; Bruno and Shin, 2019; Du and Schreger, 2022), and high corporate leverage is also important for subsequent aggregate economic performance (Giroud and Mueller, 2017, 2021; Jordà et al., 2022).

After the last global financial crisis (GFC), capital controls have become increasingly popular among both policy-makers and academics, despite the well-known costs associated with them (Johnson and Mitton, 2003; Rajan and Zingales, 2003), and the positive effects linked to financial liberalization (Henry, 2000a, 2000b). Most notably, the IMF has endorsed capital controls, initially as a last-resort and temporary tool for managing credit booms led by large capital inflows (IMF, 2012, 2018; Blanchard, 2013); more recently, also as an ex-ante policy aimed at mitigating risks triggered by external borrowing (IMF, 2022). In the same spirit, a class of international finance-macro models rationalizes capital controls as a Pigouvian tax cutting the negative externalities due to excessive foreign capital inflows (Bianchi, 2011; Brunnermeier and Sannikov, 2015; Jeanne and Korinek, 2010; Korinek, 2011; Bianchi and Lorenzoni, 2021). Moreover, other models suggest that capital controls may improve the allocation of capital, as large capital inflows tend to direct excessive credit to unproductive (e.g. non-tradable) sectors and/or firms (Benigno and Fornaro, 2014), while an alternative view (see e.g. Bianchi and Mendoza, 2020) is that capital controls (as well as other macroprudential policies) mainly distort capital allocation.

Despite such growing support and interest for prudential capital controls (in academia and policy institutions), however, empirical evidence on their prudential real effects - including effects during boom and crisis times - remains scant (notably based on micro-level administrative datasets). Our paper tries to fill the gap.

We investigate the effects of capital controls to shed light on their costs and benefits in light of recent theoretical models and policy debate. First, we ask whether, during the boom, the introduction of capital controls affects firms' FX and total debt and its potential consequences for the real economy. In detail, we analyze whether capital controls are effective in cutting FX-debt inflows, and also whether firms circumvent them via domestic bank debt (and if so, the mechanism). Moreover, we check whether capital controls affect the allocation of credit during the boom by redistributing resources toward relatively more or less profitable or productive firms and toward tradable versus non-tradable sectors. Second, we analyze the real effects of capital controls during a subsequent bust, via a reduction of debt in the boom –i.e., a prudential perspective of capital controls during a boom and bust and the debt channel as a potential mechanism.

Our identification exploits the introduction - during a strong credit boom before the GFC - of a 40% *unremunerated* reserve requirement (URR) on foreign currency (FX) debt inflows in Colombia. The URR worked as follows. Upon disbursement of the FX-debt inflow, the ultimate borrower (who bears the costs of CC) would deposit 40% of the nominal FX-loan amount for 6 months at the central bank without any remuneration; for comparison, the local overnight interbank rate was at the time as high as 8.40%. Hence, the new regulation resulted in high taxation of FX debt inflows. There was, in principle, a possibility to withdraw the deposit before the 6-month deadline, but against a heavy penalty fee. Importantly, CC extended to commercial FX-loans by local banks (not only by foreign banks). The Central Bank of Colombia lifted CC in early October 2008, amid signs of an economic slowdown related to the unfolding of the GFC after Lehman's collapse.

We analyze the effects of the policy through the lens of rich administrative and confidential datasets. First, we have access to the National Credit Registry (CR), provided by the Colombian

Financial Supervisory Authority, which collects detailed quarterly information at the loan-level for corporate loans, with information on loan volume, collateralization, maturity, currency, and, unlike most credit registers around the world, loan rates. Second, we exploit the Balance of Payments records on firm-level quarterly borrowing from foreign banks and in the form of trade credit and bond issuances, as well as firm-level quarterly imports and exports. Finally, we collect data on firms' and banks' (supervisory) balance sheet, with annual and quarterly frequency, respectively. Additionally, we access employment data at the firm-level for a shorter subsample running from 2008 onward. We match all datasets through firms' unique tax identifiers or through banking groups denomination codes. Ultimately, our sample comprises 2,861 firms active in FX-debt markets before the URR. Given the introduction of CC in May 2007 and the GFC after mid-September 2008, our analysis of FX and total debt dynamics runs over 5-quarter symmetric windows around the policy introduction. That is, the sample starts in 2006:Q1 and ends in 2008:Q2 before the global crisis; we label 2007:Q2 as the first year-quarter under CC. Next, for testing firm-level real effects during the bust, we expand our sample so to include the GFC. Our sample period is therefore 2006-2009, at a quarterly level.

As capital controls are non-random, but rather induced by the credit boom that affects corporate debt and real activity, we exploit firm heterogeneity in difference-in-difference (DID) models, thereby controlling for common observed or unobserved time-varying shocks. We measure exposure to CC through ex-ante reliance on FX-debt. Moreover, we proxy firms' ability to substitute FX with peso credit depending on their access to *relationship* or *transactional* FX-lending, i.e. depending on whether firms borrow (before CC) in FX from local or foreign intermediaries, respectively.[1]

Our main findings are as follows. We first establish that capital controls are effective in reducing FX-debt inflows (for ex-ante FX-active companies). Relative to the average FX-debt pre-policy exposure, capital controls reduce inflows by 30%. Moreover, the decline is stronger for ex-ante highly

[1] Bolton et al. (2018) define relationship and transactional lending similarly, depending on whether the borrower and the lender are located in the same region, or not. The idea that geographical distance between banks and firms impedes the formation of strong lending relationships is explored also by Mian (2006) and Agarwal and Hauswald (2010).

exposed firms: a 1 standard deviation (s.d.) increase over the mean implies an additional 10% cut. The reduction is effective for FX-loans granted both abroad and domestically.[2]

Next, we investigate whether more affected firms substitute the forgone FX-debt with domestic (peso) loans from local banks.[3] Importantly, CC would apply to FX-debt irrespective of the lender's nationality. Thus, we distinguish companies depending on whether they borrowed (pre-policy) in FX from relationship (domestic) or from transactional (foreign) lenders. We use this grouping to compare the relative performance in the domestic peso-lending market through credit register data. We find that after the implementation of the capital controls, companies with transactional FX-debt face a relative credit restriction of 13% vis-à-vis companies *with* ex-ante relationship FX-debt. A relative interest rate jump of 79bp accompanies such a reduction in credit volume, suggesting that the credit changes across firms are (bank) credit supply-driven. In addition, the described relative credit supply cutback is stronger among companies with larger ex-ante FX exposure to arm-length, foreign intermediaries. Or, put differently, credit supply expansion is stronger among firms with larger ex-ante FX-exposure to relationship, local intermediaries.

Overall, these results are consistent with a mechanism guided by the ex-ante strength of domestic lending relationships. Further corroborating this hypothesis, we find that the domestic FX-lender, often coinciding with the main lender,[4] is responsible for the relative expansion in credit supply enjoyed by these firms, rather than remaining local banks from which they borrow only in pesos.

The loan-level findings go through also when we aggregate to the firm-level. That is, firms with ex-ante weaker relationships with local banks cannot fully substitute FX-debt with domestic peso

[2] Results are robust if we repeat the analysis over any symmetric window around the introduction of capital controls, including a 1-quarter exercise where we compare FX-debt flows in 2007:Q2 and 2007:Q1.

[3] On the extensive margin, the relative likelihood of issuing peso debt (relative to FX-debt) rises with CC and proportionally to pre-policy FX-debt exposure. Also, the share of FX-debt out of total debt issuance declines accordingly. Note that CC also tax FX lending by domestic banks.

[4] FX-lending is a good predictor of whether a bank is the main lender of a firm, i.e. the bank with the highest loan share across all firm's lenders. Among firms borrowing in FX from Colombian banks, the likelihood of being an FX-lender for the main relationship-bank is roughly twice as large as for the rest of peso-lender Colombian banks, 56% against 29%, respectively. Moreover, the loan share of an FX-lender is 10 p.p. larger than that of all the other (peso)-lenders.

borrowing. Hence, capital controls constrain their total debt growth. Comparing annual balance sheet data for end of 2006 and end of 2007,[5] we find that these firms experience a relative average reduction of approximately 4.5% in total debt liabilities, which is moreover increasing along ex-ante FX-exposure to transactional lenders. We also check whether the reduction in total indebtedness spurred by CC is especially strong for firms operating in non-tradable sectors and/or firms with low profitability or productivity, as proxied by ROA or by profits per worker, to empirically assess whether CC improve or worsen credit allocation during a boom. Our results suggest that capital controls do not significantly tilt credit allocation towards tradable/non-tradable sectors nor towards more versus less profitable/productive firms. Next, we look for the real effects of CC during the boom, i.e. upon implementation, and find that with CC in place more affected companies consistently reduce imports. In particular, an interquartile variation in exposure to capital controls (i.e. larger ex-ante FX-debt from arm-length banks, or weaker local banking relationships) implies a 4.4% fall in firm-level imports.

As the Central Bank of Colombia introduced capital controls on FX inflows before the GFC (and removed them in October 2008), we verify whether the pre-crisis reduction in total firm debt due to the capital controls is beneficial during an exogenous external negative strong financial shock, by exploiting Lehman's failure. Colombia did not have any signs of an economic slowdown before the GFC in mid-September 2008. Moreover, the GFC triggered a collapse in world trade (exports and imports), and our matched administrative data have quarterly information for each firm on imports and exports.

Our robust results suggest that capital controls improve exports during the global financial crisis (and world trade collapse) through a preemptive reduction in firm-level debt before the crisis (and after the policy introduction). In particular, an inter-quartile increase in ex-ante exposure to the policy

[5] Results are virtually identical if we compare total liabilities at the end of 2006 and at end of 2008. However, we prefer the end-of-2006-to-2007 regressions as the end of 2008 is characterized by the GFC.

(associated with larger pre-crisis firm debt reduction) implies during the crisis higher exports growth by 7.2%. Upon enforcement of CC, i.e. during the boom and before the GFC, higher exposure to CC does not affect exports.[6] Among other robustness checks, we show that results stem from the reduction in firm debt due to the capital controls. Differently, endogenous changes in corporate debt (between the CC policy introduction and the start of the GFC) unrelated (orthogonal) to capital controls do not affect trade during the crisis.[7]

Consistent with the firm debt channel within the crisis, estimated effects are stronger for ex-ante financially-constrained firms, in particular firms with ex-ante higher cost of loans or with greater reliance on short-term debt. Separating firms based on the median value of these proxies of financial constraints, we find for ex-ante high loan interest-rate and more short-term debt firms, effects are stronger both statistically and economically and amount to a 10% and 13% increase, respectively, in correspondence of the usual interquartile jump in exposure to the policy.

Furthermore, we also analyze employment dynamics at the firm-level during the shorter sample period from 2008 to the end of 2009. It turns out that firms relatively more exposed to CC experience a relative jump in employment during the GFC (by at least 1.4% in correspondence of an interquartile increase in exposure to CC), as compared to the pre-crisis period (i.e. the period of enforcement of CC).[8] Further corroborating the firm debt channel, also employment benefits are stronger among financially constrained firms.

[6] The estimated coefficient remains virtually unchanged in the least and most saturated (with control variables and/or fixed effects) versions of the model, despite the R-squared jumps by 84 p.p.. Relatedly, both the Oster (2017) test and propensity score matching regressions rule out self-selection as a significant driver of our estimates.

[7] It is not clear how an *endogenous* change in firm debt should correlate with posterior firm-level real effects. For example, on the one hand, firms with higher debt will have higher fragility once the crisis hits (see e.g. Giroud and Mueller, 2017, and Kalemli-Özcan, Laeven and Moreno, 2022), but on the other hand, higher firm leverage may reflect looser financing constraints and hence better firm fundamentals (see e.g. Albuquerque and Hopenhayn, 2004; Dinlersoz et al., 2019), especially during booms (Begenau and Salomao, 2019) as in our setting.

[8] We verify that the jump in employment associated with CC during the GFC is not driven by a mechanical rebound after a negative impact during the boom. To this end, we collect quarterly employment data for 27 manufacturing industries covering the whole period of analysis. Results from industry-level regressions suggest that binding exposure to CC does not affect employment upon enforcement (i.e., during the boom) and boosts it during the GFC.

Our results are robust to a variety of robustness checks. First, since we run DID models, we check that the main results of the paper are not imputable to existing pre-trends by running versions of our regressions with time-varying parameters. Second, we exploit two potentially non-random layers of heterogeneity, i.e. ex-ante heterogeneity in FX-debt levels or access to different financial intermediaries. As a result, our findings may be driven by self-selection. We run two tests for ruling this possibility out. First, regarding firm unobservables, we run the test for self-selection into the treatment developed by Oster (2017), based on seminal work by Altonji, Elder and Taber (2005). In our setting, this exercise is very informative, as by saturating models with high-dimensional fixed effects and by controlling for time-varying observables, there are very large changes in the R-squared relative to the baseline versions of our models to formally test for coefficient stability. Even under more demanding assumptions than those conventionally applied for performing the test, results suggest that self-selection (including based on further unobservables) does not drive any of the estimated coefficients.[9] Second, concerning firm observables, we run propensity score matching (PSM) regressions (Heckman et al. 1997, Abadie and Imbens, 2016). By doing so, we estimate our coefficients of interest across firms with comparable observable characteristics, including most importantly several indicators of financial constraints, potentially driving firms' access to transactional-vs-relationship local lending.

The rest of the paper is organized as follows. Section 2 discusses our findings in the context of the related literature. Section 3 describes the policy and datasets. Section 4 presents the results of capital controls on FX debt inflows. Section 5 adds local bank credit supply. Section 6 presents the real effects during the boom and the bust. Section 7 concludes.

[9] At the time of the CC there was a change in traditional reserve requirements on Colombian banks' deposits. We isolate the effects of CC (i) applying bank*time fixed effects in loan-level regressions, fully absorbing all banks' idiosyncratic shocks, including the reserve policy ones; (ii) controlling for exposure to the reserve policy in firm-level exercises using banks' balance sheet data. Decisively, our coefficients do not change significantly upon the inclusion of such controls.

2. Related literature

Our main contribution to the literature is to show that capital controls have some benefits for the real economy, and the mechanism is via firms' capital structure – an *FX firm-debt channel mechanism*.[10] In addition to the literature on international capital flows, firm FX-debt, and capital controls, we also contribute to the large literature on credit in general.

Despite the increasing attention on prudential capital controls by both academia and policy, empirical evidence remains scarce, relying mostly on cross-country macro data, with typical identification problems; in addition, there is limited evidence using micro data during a boom and crisis.[11] These studies normally try to assess the effectiveness of controls in terms of reduced inflows and domestic credit (e.g. Edwards, 2007, and Forbes, Fratzscher and Straub, 2015). Moreover, Zeev (2017) and Das, Gopinath and Kalemli-Ozcan (2022) document that Emerging Economies employing capital controls on inflows experience milder reactions to global shocks in terms of output losses and spikes in external finance premia, respectively. On the other hand, existing studies on capital controls based on firm-level micro-data have mostly focused on the *negative* effects, studying stock returns, investment rates, and financial constraints of listed companies from Emerging Markets *during the phase of implementation* of the policy (see, among others, Johnson and Mitto, 2003, Harrison, Love and McMillan, 2004, Desai, Foley and Hines, 2006, Forbes, 2007a, 2007b and Alfaro, Chari and Kanczuk, 2017). We contribute to this literature by showing the FX firm-debt channel, including local bank-firm relationships, as a mechanism associated with positive, prudential real-economy benefits of capital controls during an (exogenous) crisis, which is absent in the empirical literature, as well as the analysis of capital controls on a large sample of non-listed companies, which is crucial for the

[10] For instance, Ottonello, Perez and Varraso (2022) show that in a macroeconomic model with financial (collateral) constraints, the ultimate welfare effects of CC (and of macroprudential policy more in general) may depend on the specific form of such constraints. However, they show that even when CC reduce welfare due to their negative bearing on household consumption, they are nonetheless associated with prudential (financial-stability) benefits, i.e. they reduce the likelihood and the depth of financial crises.

[11] For a detailed account of recent theoretical and empirical findings in the literature on capital controls, see Erten, Korinek and Ocampo (2019), Rebucci and Ma (2019) and Bianchi and Lorenzoni (2021).

results (benefits), as these firms tend to be more financially constrained, and effects stemming from capital controls during the crisis (we find) are stronger for these type of firms.

Interestingly, our results are likewise very different from a recent paper on capital controls using credit register data. Keller (2019) documents an unintended consequence of Peruvian controls in 2011, namely an increase in domestic firms' debt dollarization and associated fragility during a subsequent sudden stop. Such negative effects are due to the fact that capital controls inhibited Peruvian banks from investing local dollar deposits in global forward markets, so they were consequently redirected towards non-exporting firms. Her results and ours are not directly comparable, because of the different institutional frameworks of the Colombian and Peruvian capital controls and other institutional settings. Colombian banks could not raise dollar deposits from Colombian households and firms at the time of CC (and still cannot). Crucially, the Colombian controls applied to FX-debt granted by *both local and foreign* financial intermediaries. That is, in Colombia even if local banks would lend in dollars to local firms, the tax (URR) would apply, i.e. there was no possibility to arbitrage capital controls via local banks lending to local firms in dollars.

Importantly, the joint reading of the two papers raises a warning against reliance on cross-country studies on capital controls and helps to explain why related empirical evidence is largely inconclusive (Magud, Reinhart and Rogoff, 2011). Such studies generally label policies with different legal and institutional arrangements as capital controls. However, the two credit papers (ours and Keller, 2019), each one with very different results, show that institutional details are of first-order importance for understanding how capital controls transmit to banks and non-financial borrowers.

We further contribute to (and build a bridge between) the strands of literature on capital inflows and bank credit by showing complementarities between FX debt and local banks' credit supply, depending on the strength of local banking relationships. First, we show the mechanism of the firm-debt channel for our results on capital controls, where both FX debt inflows to firms and local credit supply to firms matter. Second, we are not aware of other studies identifying a credit channel behind the transmission of capital controls to the real economy that levers firms' heterogeneity in terms of

the strength of local lending relationships (Sharpe, 1990; Rajan, 1992; Hoshi, Kashyap and Scharfstein, 1991; Petersen and Rajan, 1994; Berger and Udell, 1995). In this respect, our study adds to the evidence on how relationship lending shields commercial credit during financial downturns (Bolton et al., 2016; Beck et al., 2018). Third, the previous result in conjunction with the finding that local credit supply depends on foreign FX-debt reduction (affected by CC) suggests strategic complementarities between cross-border and local lending (Bebchuk and Goldstein, 2011; and Vives, 2014). Both channels are absent in Keller (2019), who also uses credit register data.

We finally highlight three additional contributions stemming from our findings on real effects. First, our paper relates to a novel empirical literature that tries to quantify the real effects of macroprudential measures with micro-level data (e.g. Igan and Kang, 2011, Jiménez et al., 2017). In the context of EM, the only study that looks directly at firms' activity in relation to macroprudential policy is Ayyagari, Beck and Martinez Peria (2018), who find in a cross-country setting that companies operating in countries with tighter macroprudential stance invest less on average. Relative to them, we focus on a specific policy – (macroprudential) capital controls – and analyze its effects during a boom and a bust. Second, by showing the ramifications of capital controls on firm-level trade, our study adds to a growing body of papers on the impact of financial shocks on trade (e.g. Amiti and Wenstein, 2011; Chor and Manova, 2011; Paravisini, Rappoport and Schnabl, 2015). In this respect, the negative impact of capital controls on imports mirrors Alfaro and Hammel (2007)'s findings that financial liberalizations spur imports. Differently, our documented macroprudential benefits in terms of higher exports suggest that capital controls could have partly mitigated the Great Trade Collapse in EM. Last, as we find that the firm-level indebtedness reduction due to capital controls is associated with greater employment (in addition to exports) during the bust, we complement the evidence in Giroud and Mueller (2021) that corporate-leverage cycles are a key driver of employment fluctuations.

3. Institutional Settings and Data

3.1 Capital Controls on Capital Inflows in Colombia

The Colombian economy experienced rapid expansion in the mid-2000s, with annual GDP growth above 4% in both 2004 and 2005. As early as 2006, inflationary pressures further intensified due to a pronounced surge in domestic credit. The annual growth rate of commercial credit more than doubled throughout 2006, reaching a value of roughly 25% at the end of the year from an initial point of less than 10% (Figure 1, Panel A). The Central Bank reacted by steadily increasing the interest rate, which jumped from 6% at the end of 2005 to 8% by early 2007, and further up to 10% in mid-2008. The tightening of monetary policy correlated with a sharp increase in inflows and exchange rate appreciation already by the third quarter of 2006 (Figure 1, Panel B).

To deal with the acceleration of domestic and foreign credit booms, the Central Bank resorted to capital controls on foreign inflows on May 7th, 2007, under the form of an Unremunerated Reserve Requirement (URR) on all new FX bank-loans granted to Colombian individuals and companies. By May 23rd, the Central Bank extended the URR to portfolio investments. In practice, the URR works as follows: upon disbursement of the FX-credit, the Colombian firm deposits 40% of the nominal loan amount in an account at the Central Bank, without receiving any remuneration back. The ultimate borrower always bears the deposit (i.e. firms in our analysis) and can eventually withdraw it freely only after 6 months. At the time, local interest rates – as reflected by the overnight interbank rate – were as high as 8.40%. Hence, the new regulation resulted in high taxation of FX debt inflows. There was a chance to withdraw the deposit before the 6-month deadline, though against the payment of a heavy penalty fee, decreasing in time and ranging from 9.4% of the deposit itself during the first month to 1.6% during the sixth and last month.

Importantly, firms would always pay the URR on FX-loans, independently of them being granted by local or foreign banks.[12] Moreover, when local banks lend in FX, they finance such operations through FX-funding from abroad.[13] To avoid double taxation, local banks' FX-financing was thus exempted.[14] Capital controls were enforced immediately upon announcement and eliminated by the 9th of October 2008, amid signs of an economic slowdown related to the global unfolding of the financial crisis after Lehman Brothers' collapse.

Contemporaneously to the introduction of CC, the Central Bank also changed the regulation on traditional banks' reserve requirements, applying generally higher requirements on saving and checking deposits. Given our granular data, we can isolate the effects of capital controls from those of traditional banks' reserve requirements: (i) in loan-level regressions, where we exploit firm heterogeneity on ex-ante FX exposure, by applying bank*time fixed effects, hence fully controlling for any credit-supply variation connected to banks' idiosyncratic shocks, including the reserve policy ones; (ii) in firm-level models, by controlling for direct exposure to the reserve policy using banks' supervisory balance sheet data. Decisively, none of our results change based on the inclusion of such controls (or more generally due to other controls).

3.2 Data and Summary Statistics

Our work primarily exploits two administrative and confidential datasets observed during the period of interest 2006-2009. First, we have access to the National Credit Registry (CR) - provided by the Colombian Financial Supervisory Authority (*Superintendencia Financiera de Colombia*) – which collects detailed quarterly information at the loan-level on commercial debt outstanding. We

[12] By local banks, we refer to both banks with their main headquarter in Colombia (e.g. Bancolombia) and to banks with foreign headquarters but with a subsidiary incorporated in Colombia (e.g. BBVA Colombia). Foreign banks are intermediaries located abroad and without a subsidiary incorporated in Colombia.

[13] Colombian banks, as banks from other countries which follow the Basel capital rules, basically fully hedge their FX-exposure. Already before CC, banks could not have negative on-balance-sheet FX positions, whereas the global net FX-position (comprehending off-balance-sheet assets and liabilities in FC) could not go below -5% of regulatory capital.

[14] Banks' FX-borrowing would be subject to CC if used for financing peso-denominated investments. Also, joint with CC, the Central Bank introduced an upper bound on the gross FX-position (i.e. the sum of in- and off-balance-sheet FX assets) equal to 500% of banks' regulatory capital. We analyze the (bank) credit-supply channels of CC in a companion paper (Fabiani et al., 2022).

aggregate information on the size of the loan, collateralization, and maturity at the firm-bank-currency level. The distinction across currencies is not available for loan interest rates, which are consequently available at the firm-bank level. Second, we observe Balance of Payments records on firm-level quarterly borrowing from foreign banks and in the form of trade credit (from foreign firms) and bond issuances. One key difference between these two datasets is that while CR data refer to the firm-bank-currency *stock* of debt, we observe firm-level debt *flows* from abroad. We also obtain information on firm-level quarterly imports and exports. Information on firm employment is available only starting in 2008 and comes from the *Planilla Integrada de Liquidación de Aportes* (PILA), containing information at the employer-employee level and collected by the Colombian Social Security Authority.[15] Finally, we collect publicly available data on firms' and banks' balance sheets, at an annual and quarterly frequency, respectively. We match different datasets through firms' unique tax identifiers or banking groups' denomination codes.

Our sample comprehends 2,861 firms active in FX-debt markets before the CC, excluding financial companies (ISIC codes 65 to 67) and utilities (ISIC codes 40 and 41). Unless otherwise stated, we conduct our analysis in 5-quarter symmetric windows around the policy introduction. That is, the sample starts in 2006:Q1 (with 2007:Q2 labeled as the first year-quarter under capital controls) and ends in 2008:Q2 before the crisis. We compute summary statistics over the pre-policy period 2006:Q1-2007:Q1 and report them in Table 1.

Panel A contains firm-level summary statistics. FX $\text{Inflows}_{f,yq}$, represents the quarterly flow amount (summing up FX-loans disbursed by foreign and local agents) rescaled by total assets. This variable can take either positive or nil values, depending on whether a firm issues FX-debt, or not, respectively. The presence of zeros and the rescaling by total assets produces small numbers in absolute value. This should not lead one to underestimate the importance of FX-debt issuance for our

[15] We follow the algorithm developed by Aristizábal-Ramírez and Posso (2021) for matching firm-level data to employer's employee records from PILA as the two datasets use different firm identifiers.

companies, though. The variable YearlyShare-$FX_{f,yq}$ describes the fraction accounted for by FX debt flows out of total debt issuance in a given year. Conditional on issuing any foreign or domestic currency debt, FX-debt represents on average around 30% of yearly total debt flows. There are differences in the distribution of FX-debt inflows lent by relationship (local) and transactional (foreign) banks, denoted by FX-R $Inflows_{f,yq}$ and FX-T $Inflows_{f,yq}$, respectively. For both variables, we compute summary statistics over companies that have at least a positive entry during the pre-policy period. First, FX-lending from relationship banks is more common (note the larger number of observations). 1,684 companies have FX-ties to relationship banks, whereas 402 companies borrow in FX from transactional banks and 775 firms borrow in FX from both. Second, transactional FX-debt flows are significantly larger. This reflects heterogeneity across firms borrowing in FX. Moreover, for the average firm borrowing in FX from relationship banks FX-flows account for 20% of yearly debt flows. Differently, for firms borrowing in FX exclusively from transactional banks FX-debt inflows account for nearly 35% of total debt flows.[16] As domestic banks intermediate none of such debt, lending relationships for this group of firms are on average weaker.

Table 2 indeed indicates differences across companies in the two segments of the FX-debt market. Firms borrowing in FX from both relationship and transactional intermediaries are larger, with balance sheets around 3.6 and 1.4 times bigger than those of companies borrowing exclusively from relationship banks, respectively. The same ranking holds for both imports and exports. One important remark is that all bank balance sheet characteristics distribute nearly identically across the different groups of companies. This is a first reassurance that banks idiosyncratic characteristics do not interfere with the identification of the effects of capital controls based on the comparison between companies borrowing in FX.

[16] Furthermore, the median share of annual debt inflows represented by FX-debt inflows is 4% for firms with relational FX-debt and 18% for firms with transactional FX-debt.

A crucial variable in our analysis is the ex-ante exposure to FX-debt. Specifically, we aim to gauge a measure of pre-policy involvement in foreign currency borrowing. We do not have data on the stock of foreign currency borrowing from abroad, in which case one might look at debt outstanding just at the onset of the policy. Therefore, we rely on a proxy given by the average issuance (rescaled by total assets) during the 2005:Q1-to-2007:Q1 period, the longest available pre-policy period in which we observe FX-inflows. The related summary statistics for overall FX-debt exposure are those referring, in Tables 1 and 2, to the variable $\text{Exposure}_{f,pre}$. Similar definitions apply to the exposures to FX-debt granted by relationship and transactional banks, respectively denoted by Exposure-$R_{f,pre}$, and Exposure-$T_{f,pre}$. Within subgroups of active companies, exposures contain heterogeneity. Across subgroups, firms with relationship FX-ties only are less reliant on FX-debt than the others, on average. Throughout the paper, we assess the robustness of our results by employing alternative measures of ex-ante exposure to FX-debt. These include rescaling inflows over total liabilities, or simply by taking logs, or considering their realization in 2007:Q1, or, finally, computing the average inflow over the fully predetermined period 2005:Q1-2005:Q4. We report their summary statistics in Panel A of Table A1 of the Internet Appendix and they depict a substantially unmuted picture.

We measure firms' total indebtedness through total liabilities, expressed in logs (of millions of Colombian pesos as of 2006:Q1, like other variables which are not rescaled by total assets) and denoted by the variable $\text{Liabilities}_{f,y}$, observed with annual frequency. Comparing the mean for total firm assets ($\text{Size}_{f,y-1}$) and liabilities, the latter account on average for 60% of a firm balance sheet.

We analyze the real effects of capital controls over the period 2006-2009, so to study prudential benefits during the global financial crisis, primarily exploiting quarterly data on imports and exports, expressed as well in logs and indicated by the variables $\text{Imports}_{f,yq}$ and $\text{Exports}_{f,yq}$, respectively. In exports (imports) regressions, we restrict our attention to those companies that export (import) during the period 2006-2009 in at least one year-quarter. For this reason, the number of observations drops, as several companies in our sample do not engage in trade. Moreover, we study the evolution of firm-

level employment over the period 2008Q2-2009Q4, consistently with available information. We match employment data only for a subset of 844 firms based on the procedure proposed by Aristizábal-Ramírez and Posso (2021). We build a measure of firm-level employment by counting the number of employees per firm in a given year-quarter (and taking the log). The average firm in our sample has 142 employees, though there is large heterogeneity, as suggested by the interquartile range of 97 employees (Panel B of Table A1 in the Internet Appendix).

Our analysis of the substitution of FX with local currency lending takes advantage of the credit registry, i.e. loan-level data on domestic credit. Panel B of Table 1 contains related summary statistics. The variable $\text{PesoLoan}_{f,b,yq}$ defines the log of the end-of-quarter firm-bank outstanding peso-denominated debt. The average peso-loan, expressed in end-of-2019 US dollars, is valued at about $60,000. The variable $\text{InterestRate}_{f,b,yq}$ represents the average interest rate applied over a company's debt balance with a given bank and we express it in percentage points. The mean rate is 13.5%. Roughly 42% of the loans are collateralized and the average loan maturity is close to 4 years. Moreover, in 38% of the cases, a given bank grants not only peso credit, but also FX lending (as signaled by the variable $\text{FX-Lender}_{f,b,pre}$, a dummy with value 1 if a bank provides FX debt to a given firm before capital controls and 0 otherwise).

We report additional summary statistics for macroeconomic controls and industry-level variables in Panel A of Table A1 of the Internet Appendix.

4. Impact of Capital Controls on FX-Debt Inflows

We start our empirical analysis by looking at the influence of CC on FX-debt inflows. We study the behavior of the 2,861 companies ex-ante active in FX-debt markets during the period from 2006:Q1 to 2008:Q2. We intentionally exclude the third quarter of 2008 despite the Central Bank of Colombia removing controls by early October of the same year. This is to separate the effects of capital controls from those of the GFC following the collapse of Lehman Brothers in mid-September of 2008, associated with high volatility of capital flows and their retrenchment from EM towards

Advanced Economies (Forbes and Warnock, 2012). All presented results nonetheless hold if we include 2008:Q3 in the regression sample (tables available upon request).

First, we look at the unconditional impact of capital controls, by exploiting the following model:

$$(1) \quad \text{FX Inflows}_{f,yq} = \beta_1 \text{Post}_{yq} + \beta_2 \text{Macro}_{yq-1} + \beta_3 \text{Firm}_{f,yq-1} + \delta_q + \delta_f + \varepsilon_{f,yq}$$

The dependent variable aggregates local-driven and foreign-driven FX-debt inflows;[17] later, we will consider both markets separately. The key parameter of interest is β_1, loading Post_{yq}, a dummy with a value of 1 starting from 2007:Q2, the quarter of introduction of the CC, and 0 before. Therefore, we analyze CC over 5-quarter windows before and after their introduction. We augment the model with quarter-of-the-year fixed effects (i.e., seasonal effects) and firm fixed effects, δ_q and δ_f, controlling for quarter-specific shocks to FX-debt issuance and for time-invariant firm heterogeneity, respectively. In addition, we include a vector of time-varying macroeconomic controls, Macro_{yq-1}, comprehending: the lagged yearly variation of GDP and CPI index (i.e. yearly inflation); lagged values of the VIX and the exchange rate, both expressed in logs, and of the monetary policy rate. We also augment the model with a battery of firm controls, including lagged values of firm size, ROA, imports, exports, and firm-level weighted averages (across loans shares) of multiple bank balance sheet items – most notably, the share of assets accounted for by saving and checking deposits, differently affected from 2007:Q2 onwards. We double-cluster standard errors at the firm and industry*year-quarter level, in line with fixed effects saturation.

We show results in columns (1) to (3) of Table 3. Column (3) displays the coefficients for the most robust version of the model which we just described. With capital controls in place, total FX-debt inflows are on average smaller by 0.004 (statistically significant at the 1% level). This coefficient is small in absolute terms, due to data on inflows being rescaled by total assets, but still reflects a large effect of CC. Comparing this number with firm-level summary statistics in Table 1, it equals

[17] That is, the sum of FX bank loans, provided by local and foreign banks, bond issuance in FX and trade credit from foreign firms. Note that FX-bonds issuance and trade credit are tiny relative to bank loans in our sample. For this reason, we normally refer to FX-bank loans and FX-inflows interchangeably.

30% of the ex-ante mean FX-debt inflow (which, in turn, accounts on average for roughly 30% of total debt issuance). The effect is similar in columns (1) and (2), i.e. in less saturated versions of the model. In Panel A of Table A2 of the Internet Appendix, we repeat the same analysis for different groups of companies, sorted according to whether they ex-ante borrowed in FX from: relationship banks (column 1); both relationship and transactional banks (column 2), or transactional banks only (column 3). The estimates for β_1 suggest that the unconditional reduction of debt inflows is similar across the three groups of firms.

To check whether CC impact differently firms ex-ante more reliant on FX-debt, we next run the following regression:

$$(2) \quad \text{FX Inflows}_{f,yq}=\beta_1 \text{Post}_t*\text{Exposure}_{f,pre}+(\beta_2+\beta_3*\text{Post}_t)\text{Firm}_{f,yq-1}+\delta_{i,yq}+\delta_f+\varepsilon_{f,yq}$$

That is, we condition the effect of capital controls on the ex-ante FX-debt exposure, $\text{Exposure}_{f,pre}$. For easing the comparison of the coefficients in columns 3 and 4, we de-mean such exposure variable. We now further include interacted industry and year-quarter fixed-effects, $\delta_{i,yq}$, controlling for time-varying industry-wide (ISIC 4-digit level) shocks. We finally interact firm controls with the Post_{yq} dummy, potentially allowing for different relations among firm characteristics and FX-debt intakes before and after the CC. Table 3, columns (4) to (10), shows the estimated coefficients, revealing that CC have a stronger impact on relatively more exposed companies, as β_1 is negative and statistically significant.

Regarding the economic significance of our estimates, considering the pooled estimates in column 7, for firms with FX-exposure 1 s.d. above the mean, there is an additional 0.0106 reduction in FX-debt inflows. Overall, adding up this additional effect to the average reduction in FX-debt estimated in column 4 gives a total reduction close to 40% of their mean ex-ante FX-exposure, hence an additional 10% reduction relative to the average firm (for which FX-debt inflows contract by 30% as compared to the pre-policy exposure). In columns (8)-(10) of Table 3, we run separate regressions

for different groups of companies, sorted depending on whether they ex-ante borrow in FX from relationship and/or arm-length banks, and confirm the baseline results from pooled regressions.

4.1 Robustness

We perform a list of robustness checks. First, companies with different FX-exposure may vary along dimensions that we do not control for through our set of controls and fixed effects. Among observable characteristics, for instance, FX-exposure positively correlates with firm size, which, in turn, may endogenously correlate with firm productivity. If this was a threat to our identification assumption – namely, the interaction between the $Post_{yq}$ dummy and ex-ante FX-debt exposure being orthogonal to firm-specific unobserved time-varying shocks – we would observe instability of the coefficients of interest when adding controls and fixed effects. In this sense, we formally check the extent of self-selection along unobservables through the Oster (2017)'s test. Building on seminal work from Altonji, Elder and Taber (2005), she derives the proportional degree of selection into the treatment (relative to that inferred from the data) needed to nullify the estimated treatment effect, assuming a value $\tilde{R}^2$ for the hypothetical share of variance one would explain, were all the relevant residual heterogeneity controlled for. A "coefficient of proportionality" $\tilde{\delta}>1$ is interpreted as reassuring evidence, implying that further unobservable characteristics should correlate with treatment more strongly than observables and unobservables captured by fixed effects. In Table A3 of the Internet Appendix we provide the results of the test, both under the standard assumption that $\tilde{R}^2=\min\left\{1.3\hat{R}^2;1\right\}=1.3\hat{R}^2$, where $\hat{R}^2=0.4615$ is the explained variability of column (7) of Table 3, and under the very restrictive assumption that $\tilde{R}^2=1$. In both cases, the resulting degree of proportionality is strictly larger than 1.

Second, we analyze a relatively long 5-quarter window around the policy, so that other events (than CC) taking place either in 2006 or in late 2007 and/or early 2008 could in principle drive the results in Table 3. For this reason, we also consider all the shorter windows around the policy

announcement. Estimates in Panel B of Table A2 of the Internet Appendix display a persistently negative and statistically significant coefficient throughout all the different specifications.

Third, we allow for different definitions of the exposure variables, including: values as of 2007:Q1; non-linear transformation of our averaged measure through log exposures; rescaling by total liabilities rather than by total assets; average pre-determined exposure over the period 2005Q1:2005Q4. All results go through (see Panel C of Table A2 in the Internet Appendix). In addition, all the discussed robustness exercises perform similarly when considering separate regressions for the different groups of companies. The tables, not reported for brevity, are available on request.

Finally, as our analysis corresponds to a diff-in-diff exercise, we check whether the parallel trends assumption holds by estimating a version of the model in which the ex-ante FX-debt exposure is allowed to exert a time-varying effect on FX-debt intakes. In practice, we estimate the following equation:

$$(3) \quad \text{FX-Inflows}_{f,yq} = \sum_{yq \neq 2007Q1} (\beta_{yq} * \text{Exposure}_{f,pre} + \gamma_{yq} * \text{Firm}_{f,yq-1}) + \delta_{i,yq} + \delta_f + e_{f,yq}$$

We impose the impact in 2007Q1 – the last year-quarter before the introduction of capital controls – as the baseline (unestimated) value, so that a validation of the parallel trends assumption requires that coefficients are about zero before it, and negative thereafter. Indeed, the coefficients displayed in Figure A1 of the Internet Appendix suggest that before capital controls there is not a significant (increasing or decreasing) trend in FX-debt inflows associated with ex-ante FX-debt exposure.[18] Following the implementation of capital controls in 2007Q2, however, the effect of higher ex-ante FX-exposure becomes markedly negative.

[18] The marginally significant coefficient in 2006Q2 is not linked to a particular ex-ante time trend and is most likely due to noisy seasonal effects driving, among others, cyclical fluctuations in FX-debt inflows.

5. Substitution of Foreign Debt with Domestic Bank Debt

We investigate whether firms substitute the forgone foreign currency debt with domestic peso lending. To this end, first, we study substitution along the extensive margin and next over the intensive margin.

5.1 Impact of Capital Controls on Currency Composition of Corporate Debt Issuances

FX-debt intakes become much less frequent under capital controls. On the extensive margin, this can imply that ex-ante more FX-exposed companies issue domestic currency debt more frequently. We verify this hypothesis by borrowing the identification strategy from Becker and Ivashina (2014). In detail, we retain firm*year-quarter pairs where firms issue either FX or peso-debt, so to control for positive credit demand, while dropping those with no debt issuance or intakes of both types of financing, as they do not bring any information about the relative ability of companies to issue debt in different currencies.[19] The equation of interest takes the form:

$$(4)\quad \text{DebtType}_{f,yq}=\beta_1\ \text{Post}_{yq}*\text{Exposure}_{f,pre}+\left(\beta_3+\beta_4*\text{Post}_{yq}\right)\text{Firm}_{f,yq-1}+\delta_{i,yq}+\delta_f+e_{f,yq}$$

The dependent variable, $\text{DebtType}_{f,yq}$, is a dummy variable with a value of 1 if firm f issues only debt in peso and with a value of 0 in the opposite case (firm f issues FX-debt but not peso debt). The saturation with fixed effects and controls mirrors the model for evaluating the impact of capital controls on debt inflows. The main coefficient of interest, β_1, describes the impact of ex-ante exposure to FX-debt on the relative likelihood of issuing peso-debt (as opposed to FX-debt) after the imposition of CC, and compared to before. Columns (1) and (2) in Table 4 indicate that firms relatively more ex-ante reliant on FX-debt become relatively more likely to issue peso debt. Based on point estimates in column (2), a 1 interquartile jump in pre-determined exposure to FX-debt boosts the likelihood of issuing peso-debt by roughly 3.7%, corresponding to a 4.7% increase relative to the

[19] Including firm*year-quarter pairs where both peso and FX-debt is issued, and coding the entry as peso issuance or FX-issuance based on the largest value among the two, does not alter results.

pre-policy average. Columns (3)-(5) report analogous figures for regressions run over separated samples for companies with relationship and/or transaction FX-credit ties.

This result points to a CC-induced drag on companies' debt dollarization. We formally verify this hypothesis in columns (6)-(10), where we run a model with the share of FX-debt out of total debt issuance as the dependent variable. The equation is otherwise identical to those analyzed so far, as long as we consider right-hand side variables. Results indicate a decrease in the share of FX-debt over total debt issuance for more ex-ante FX-exposed companies. Results are again consistent across the three different groups. The presented findings differentiate the Colombian capital controls from the Peruvian case studied by Keller (2019) and, generally, from those FX-policies which put caps on banks' foreign currency funding and/or other investments different from lending, which tend to increase non-financial agents' usage of FX-loans (Ahnert et al., 2021).

5.2 Substitution with Peso Debt from Local Banks

For highly ex-ante FX-exposed firms, after capital controls, the issuance of peso debt becomes more frequent and represents a larger share of total debt issuance. Nonetheless, it remains to be understood whether the same firms also adjust on the intensive margin. To this end, we investigate loan-level data for loans denominated in pesos from the CR.

We contrast the post-CC dynamics in the domestic peso-credit market of the different groups of companies based on whether, before the policy, they borrowed in FX from transactional, arm-length banks or relationship, domestic banks, or from both. First, borrowing in FX from relationship lenders grants a closer relationship with the local credit system. The CR records all locally issued FX-loans, along with their entire credit history of repayments and defaults, whereas it does not track loans issued abroad. Moreover, the local FX-lender will also access additional soft information not recorded in the CR, therefore establishing an even tighter connection. Moreover, crucially, foreign (non-resident) banks cannot directly lend in pesos to Colombian firms, implying that they cannot step in for substituting FX- with domestic-currency peso debt.

These differences are important to explain our results, presented in four subsections. First, we describe the empirical strategy for detecting relative changes in the volume and in the price of credit caused by capital controls. Second, we report results from our baseline model. Third, we perform a list of robustness exercises. Fourth, we investigate a mechanism that explains our results.

5.2.1 Empirical Model

We group companies into three categories based on mutually exclusive 0/1 dummies. First, $Relationship_{f,pre}$ equals 1 for firms borrowing in FX before capital controls from relationship banks only. Second, $Transactional_{f,pre}$ has value 1 for firms ex-ante indebted in FX exclusively with transactional, arm-length banks. Third, $Both_{f,pre}$ equals 1 for firms ex-ante borrowing in FX from both types of banks.

Firms with only relationship FX-debt represent the baseline group in the following regression:

$$(5) \quad Y_{f,b,yq}=(\beta_1 Both_{f,pre}+\beta_2 Transactional_{f,pre})*Post_{yq}+\theta X_{f,b,yq}+\delta_{f,b}+\delta_{i,yq}+\delta_{b,yq}+\epsilon_{f,b,yq}$$

The dependent variable, $Y_{f,b,yq}$, is either the log of peso-loan provided by bank *b* to firm *f*, or the interest rate applied over it. β_1 and β_2 are the two parameters of interest, describing the post-CC dynamics of "Both" and "Transactional" firms in domestic credit markets, compared to "Relationship". $X_{f,b,yq}$ is a vector of firm and loan-level controls. Firm controls include, on top of the usual variables applied in firm-level analysis, a dummy for whether a company defaulted on any loan over the past year. Loan Controls include a 0/1 collateralization dummy and the (log)-maturity of the loans. We interact all controls with the $Post_{yq}$ dummy. $\delta_{f,b}$ is a full set of interacted firm and bank fixed effects, controlling for firm-bank matching, whereas $\delta_{i,yq}$ are industry*year-quarter fixed effects.

The dynamics of peso lending may reflect the contemporaneous shock to banks' reserve requirements, in addition to (or rather than) capital controls. In turn, this might generate a bias in our estimates if banks' sources of financing correlate with companies' choice to participate in different FX-debt markets. Summary statistics in Table 2, however, tell us that this is not likely to be the case, as bank attributes are distributed identically across the different groups of companies. Still, there

might be other unobserved banks' idiosyncratic shocks that differentially affect the willingness of banks to extend credit to the various groups of companies before and after CC, for reasons unrelated to CC. Thanks to the granularity of our datasets, we directly tackle these concerns by applying bank*year-quarter fixed-effects, $\delta_{b,yq}$, controlling for all time-varying (observed and unobserved) idiosyncratic bank shocks.

5.2.2 Baseline Results

Before showing the estimates from the formal regression analysis, we investigate graphically the overall dynamics of domestic peso credit across relational and/or transactional FX-borrowers. In Figure 2, we depict the aggregate raw loan quantity across groups, normalizing it to 1 in 2007:Q1, the last quarter before the introduction of CC. Each group of companies experiences positive credit growth before capital controls. After CC, however, only companies ex-ante indebted in FX exclusively with relationship banks remain on such an increasing trend, with a decline for firms with ex-ante FX credit from transactional banks only and flat dynamics for companies borrowing in FX from both types of banks. Similarly, in Figure 3, before the introduction of CC the average loan interest rate is on a rising path for all companies, with diverging dynamics following the implementation of CC (note that monetary rates were continuously increasing from 2006 to 2008, so rates go up always for all firms). This preliminary visual inspection suggests a credit supply cutback for firms indebted in FX with transactional (foreign) lenders, confirmed from the formal regression analysis in Table 5.

Panel A of Table 5 displays the results from the estimation of our regression equation (5) for loan quantity. The most robust specification presented above is in column (5). Relative to firms borrowing ex-ante in FX exclusively from relationship banks, firms ex-ante indebted in FX only with transactional banks experience a credit reduction of about 13%. Moreover, companies borrowing ex-ante in FX from both types of banks suffer a halfway cut of 6.9%. Importantly, and confirming the exogeneity of the choice of a transactional versus relationship FX-banker with respect to bank-level heterogeneity, the coefficients are virtually unaffected by the inclusion of bank*year-quarter fixed

effects, whose addition to the model also implies a tiny change in the R-squared. Put differently, the differences between the coefficients in columns (3) and (4) are not significant and bank time-varying heterogeneity explains a very small share of the relative changes in loan volume across companies (e.g. traditional RR do not affect the estimated coefficient nor add any statistical explanation).

Since we shut down Colombian banks' idiosyncratic shocks channel, we study the simultaneous loan interest rate dynamics across groups to understand whether demand or supply drives the changes in credit. Panel B of Table 5 shows results for the model with loan interest rate as dependent variable. In column (5), which displays estimates for the most robust version of the model, the price of credit increases by 79bp (30bp) for firms ex-ante indebted in FX only (also) with transactional banks, relative to firms with ex-ante FX credit relationships exclusively with relationship banks. The joint reading of Tables 5 and 6 reveals that the relative quantity and price of credit move in opposite directions after the implementation of capital controls: therefore, supply factors are key to explaining the suggested credit variations across groups of companies, consistent with the strength of local lending relationships.

5.2.3 Robustness

To start with, the consistency of our estimates depends on the validity of the parallel-trend assumption: absent capital controls, firms in different groups would have gone through parallel credit dynamics. Figure A2 in the Internet Appendix displays the coefficients β_{yq} from the estimation of the following regression equation:

(6) $$Y_{f,b,yq}=\sum_{yq\neq 2007Q1}(\beta_{1,yq}*Both_{f,pre}+\beta_{2,yq}*Transactional_{f,pre}+\theta_{yq}*X_{f,b,yq-1})+\delta_{b,yq}+\delta_{f,b}+\delta_{i,yq}+e_{f,b,yq}$$

In particular, Panels A and B of the Internet Appendix Figure A2 shows the estimates of coefficient $\beta_{2,yq}$ from model (6) using loan volume and loan price as dependent variable, respectively. Before the enforcement of CC, we generally observe insignificant effects of ex-ante transactional FX-exposure on both volume and prices. After impact of the CC, more exposed transactional banks experience a decline in the loan volume and a rise in the interest rate, with statistically and economically significant effects in 2008.

There may be concerns that ex-ante heterogeneity in FX-debt levels or access to different financial intermediaries is not random, i.e. our findings are due to self-selection along observable and unobservable firm characteristics. On firm observables, we run propensity score matching (PSM) regressions (Heckman et al. 1997, Abadie and Imbens, 2016). Moreover, we deal with self-selection along unobservables through the Oster (2019) test (following Altonji et al., 2005).

Through the PSM, we estimate our coefficients of interest across firms with comparable observable characteristics, including most importantly several indicators of financial constraints, potentially driving firms' access to transactional-vs-relationship local lending. As a matter of fact, for instance, summary statistics in Table 2 show that, among others, firms ex-ante indebted in FX with transactional banks are relatively larger and more involved in international trade than firms borrowing from relationship banks only. At the same time, they are less profitable, i.e. they have lower ROA on average. Hence, borrowing from either relationship or transactional banks likely correlates with other types of financing frictions which, affecting credit demand and supply, may bias our estimates. Performing a PSM allows us to contrast credit outcomes across firms borrowing in FX from arm-length or relationship lenders, though with comparable exposure to financing frictions of different natures. We compute the propensity score through the following regression equation, estimated as a logit model:

$$
\begin{aligned}
(7)\ Transactional_f = {} & \alpha + \beta_1\, Size_{f,2005} + \beta_2\, ROA_{f,2005} + \beta_3 Imports_{f,2005} + \beta_4 Exports_{f,2005} + \\
& \beta_5\, Relationships_{f,2005} + \beta_6\, BankCET1_{f,2005+} \beta_7\, BankSize_{f,2005} + \\
& \beta_8\, ExtFinLev_{f,2005} + \beta_9\, EBIT_{f,2005} + \beta_{10}\, HasCollatLoan_{f,2005} + \\
& \beta_{11}\, IntCov_{f,2005} + \beta_{12}\, Tang_{f,2005} + \beta_{13}\, TotCashandInv_{f,2005} + \\
& \beta_{14}\, LogMaturity_{f,2005} + u_f
\end{aligned}
$$

We exclude companies borrowing from both types of intermediaries as we focus explicitly on contrasting relationship versus transactional FX-borrowers.[20] The dependent variable is a dummy with value 1 (0) if a firm ex-ante (i.e., before 2007Q2) borrows in FX only from arm-length (relationship) banks. We predict the likelihood of sorting into either type of FX-borrowing through several pre-determined variables, including the usual firm-level controls (coefficients 1-to-7). We also add several proxies of financing frictions, which other studies have shown to affect firms' response to aggregate shocks and boom and bust cycles. $ExtFinLev_{f,2005}$ represents external financial leverage, i.e. the ratio between total liabilities and total assets (e.g. Bernanke and Gertler, 1989; Ottonello and Winberry, 2020; Caglio, Darst and Kalemli-Ozcan, 2021). $EBIT_{f,2005}$ and $HasCollatLoan_{f,2005}$ represent earnings before interest and taxes and a dummy for whether a firm's bank loans are collateralized, or not. $IntCov_{f,2005}$ is the interest coverage ratio and $Tang_{2005}$ is the share of tangible assets out of total assets. These four variables take into account the effect of different credit limits on firms' constraints and sensitivity to aggregate shocks (Lian and Ma, 2021; Drechsel, forthcoming; Greenwald, 2019), whereas $TotCashandInv_{2005}$ represents cash and other short-term investments, a proxy of firm liquidity position (Froot, Scharfstein and Stein, 1989; Jeenas, 2019). $LogMaturity_{f,2005}$ is the log of the average loan maturity across a firm's bank loans (Gomes, Jermann and Schmid, 2016; Jungherr and Schott, 2022). As a matter of fact, firms borrowing in FX from relationship or transactional banks are on average different along different proxies of financing frictions, as evident from Panel A of Table A4 in the Internet Appendix, where we report the unconditional mean and standard deviations across the two groups of firms. For instance, transactional firms are on average more leveraged (higher ExtFinLev), less liquid (lower TotCashandInv), and operate with a higher interest coverage ratio (higher IntCov). Considering these

[20] This is also the relevant comparison for pinning down real effects. As it will be clear in Section 5 on real effects, CC are binding only for firms borrowing in FX exclusively for arm-length banks.

noticeable differences in financing friction, we aim to develop a balanced group of transactional and relationship firms.

Estimating the equation above, we obtain the propensity score, i.e. $\widehat{Trans}_f$, representing the predicted firm-level likelihood of borrowing in FX from arm-length banks, conditional on our set of observable controls and financing frictions. Then, we pair each firm in the treatment (transactional) group with the firm in the control (relationship) group with the closest value of the propensity score. This allows us to focus on a sample of firms for which, apart from the treatment status, there are no statistically significant differences along observable characteristics, as one can see in Panel B of Table A4 of the Internet Appendix. Finally, we estimate our baseline model on such PSM sample. Reassuringly, results in Table A5 of the Internet Appendix indicate that, also in this subsample of comparable companies, ex-ante transactional FX-borrowing is associated with lower loan credit volumes and higher interest rates. If anything, the magnitude of both the cut in credit volumes and the increase in loan rates is larger in the PSM-sample regressions in Appendix Table A5 than in the baseline regressions in Table 5.

There may still be concerns that firms differ along endogenous unobservables, which the PSM fails to take into account. To check the validity of these concerns, we rely again on the Oster (2017)'s. We run the exercise using two benchmarks for the hypothetical R-squared: first, the value associated with the inclusion of firm*year-quarter fixed effects, which would absorb all firm-specific time-varying shocks, i.e. the main candidates as potential omitted variables in our model; second, the usual upper bound at 1. The resulting proportionality coefficients are in Table A6 of the Internet Appendix and are both above 1 in quantity regressions. For price regressions, they are negative, suggesting that selection along unobservables reinforces the described patterns, if anything.[21]

[21] In other terms, in this case, the correlation between residual unobservables and the treatment should have an opposite sign than the correlation between observables (and unobservables controlled for by fixed effects) and the treatment itself.

On top of clustering standard errors at the firm-level in all loan-level regressions, as we exploit firm time-varying heterogeneity for our main coefficients of interest, we also collapse our observations in a firm-bank average pre/post dimension, following Bertrand, Duflo and Mullainathan (2004), and re-run our model. The main finding that companies that ex-ante borrow in FX only from foreign banks suffer a credit supply cut from local banks still applies (Table A7 of the Internet Appendix).

An additional sensitivity check regards the fact we observe interest rates at the firm-bank level, rather than at the firm-bank-currency level. For validating that peso borrowing drives our findings, we run the same regression on firm*bank*year-quarter triples with positive peso loans and no FX-debt. The results, available on request, confirm qualitatively and quantitatively those described for the larger sample.

5.2.4 Substitution with Peso Debt from Local Banks – Mechanism

Building on the large literature on lending relationships, we investigate a mechanism for explaining our results that describes potential complementarities between domestic and external credit. Our test involves two steps. So far, we just compared credit outcomes across firms, depending on whether they borrow in FX from relationship and/or transactional banks. However, if a mechanism based on FX lending relationships is at play, the strength of such transactional/relationship FX-ties should also be connected to adjustments in credit supply. That is, all else equal, domestic Colombian lenders should further restrict (expand) credit supply for firms with relatively larger transactional (relationship) FX-exposures. Moreover, if FX-lending relationships are key for substitution, the relative credit expansion in favor of (ex-ante) FX-customers of local banks must be mostly provided by their Colombian FX-lenders themselves.

We verify the first conjecture in column (6) of both panels of Table 5. Indeed, higher exposure to relationship (arm-length) banks, i.e. *stronger* (*weaker*) relationships with the local banking system, grants larger (lower) levels of credit following capital controls, at a relatively lower (higher) price. Quantitatively speaking, a 1 interquartile increase in ex-ante FX-exposure to relationship banks is

associated with a 3.67% jump in credit and an interest rate descent of roughly 30bp. Conversely, a 1 interquartile increase in ex-ante FX-exposure to arm-length banks is associated with a 2.77% decline in credit and a hike in the interest rate of 12bp. Note that coefficients are remarkably stable in different and less saturated versions of the model and across different definitions of the variables for FX-exposures (see Table A8 and Table A9 of the Internet Appendix, respectively).

Finally, we confirm in Table 6 that the relative credit supply expansion for companies borrowing in FX from relationship banks is driven by *their FX-lender(s)*. We perform the following exercise. Throughout the different regressions, we always maintain the group of companies with no ex-ante FX-debt from relationship banks (as a benchmark group). We compare the evolution of the price and quantity of their peso loans with those of peso loans granted to the other companies by the local FX-lenders (columns indexed by even number) and by the rest of the banks from which they borrow exclusively in peso (columns indexed by odd numbers). Results indicate that the relative credit expansion (and contemporaneous price descent) experienced by companies borrowing in FX only from relationship banks is due to a change in credit supply by those local banks which provided FX-loans before CC.

Overall, the evidence in this subsection suggests a mechanism based on companies being penalized (favored) because of weaker (stronger) relationships with the local credit system.

6. Real effects

In this section, we study whether capital controls impact the real economy through their influence on firm debt. In detail, we first check that capital controls impacted the growth of firms' total debt. Consistently with the evidence presented so far, we will confirm that this is the case for firms with weaker relationships with local banks, whose ex-ante exposure to FX-debt is ultimately binding. Next, we exploit this heterogeneity to investigate the real effects on firm-level trade and employment.

The Central Bank introduced CC in May of 2007 and removed them in October 2008. Interestingly, from our perspective, the lifting of the CC coincides with the eruption of the global financial crisis (GFC) beyond US borders due to the collapse of Lehman Brothers. Note that one of

the distinctive features of the GFC was a world-level collapse in trade. Hence, exploiting our data on imports and exports, we can analyze not only the impact of the capital controls upon implementation but also their prudential benefits, potentially associated with a preventive slowdown of debt growth just before a major financial crisis (a "firm-debt channel").

Moreover, we exploit the information on firm-level quarterly employment, available however only from 2008 onward, so that we can compare the evolution of employment during the GFC, as opposed to the CC-period. Eventually, we show robustness checks including pre-CC quarters using quarterly industry-level data on employment.

6.1 Real Effects: Capital Controls and Reduced Growth of Total Liabilities

For understanding whether the CC have ramifications for the real economy, we first check that they affect the growth of firms' total debt. CC might influence especially companies with weak ex-ante credit relationships with local banks, as they suffer larger FX-credit cutbacks from capital controls and are further restricted peso-credit supply from domestic lenders. Nonetheless, other forms of financing (e.g. trade credit provided by other Colombian firms) might have compensated for the negative credit supply shocks.

We verify that this (potential) substitution mechanism is not sufficient to undo the documented debt reduction by analyzing the evolution of total firms' liabilities, whose information is available only at an annual frequency. This generates ambiguity for the definition of the timing of the CC, adopted in 2007:Q2 and removed in 2008:Q3. We try to overcome it by taking a dual approach. First, we consider only end-of-2006 and end-of-2007 data, which is our preferred choice. By leaving out end-of-2008, we avoid confounding shocks associated with CC with those stemming from the GFC. Next, however, we also check that results hold in a different sample including observations for end-of-2008. This strategy allows comparing ex-ante and ex-post firm liabilities, though it is subject to the critique that end-of-2008 contains shocks due to the GFC. In practice, we show that irrespectively of the terminal year, more ex-ante exposed companies to CC (through weak relationships with relationship banks and high FX-debt) experience a relative drop in total liabilities.

We present the results in Panel A of Table 7. Here the $Post_{yq}$ dummy takes a value of 0 in 2006 and a value of 1 in subsequent years. In columns (1)-(6), the terminal year is 2007. First, we run a relative exercise across groups. In the most robust version of the model in column (5), we find that CC reduce total liabilities for companies with ex-ante FX transactional borrowing by 4.7%. The reduction holds if we fix 2008 as the terminal year of the sample (column (7)). We also verify that the reduction in total liabilities is increasing along (constraining) exposure to the policy (through ex-ante higher arm-length FX-debt inflows and weak lending relationships with local banks), consistently with the evidence from previous sections. Excluding 2008 from the analysis, the coefficients in column (6) reveal that an interquartile increase in pre-policy exposure to capital controls prompts an additional reduction in total liabilities of 1.05%. These figures nearly double in regressions where 2008 is the terminal year with CC in place.

We conclude this section by asking whether the debt adjustments we have discussed vary across tradable/non-tradable sectors and firms with high versus low profitability, as measured by firm-level ROA or profits per worker. Some models suggest that capital inflows can lead to an inefficient allocation of capital by tilting credit toward non-tradable sectors and/or firms with low profitability, and that capital controls can help to improve the efficiency of capital allocation (Benigno and Fornaro, 2014). Other models, however, suggest that capital controls themselves can lead to a distortion in credit allocation (Bianchi and Mendoza, 2020). Therefore, whether capital controls change credit allocation, and whether they have a positive or negative impact on it, is ultimately an empirical question.

Our findings from Panel B of Table 7 indicate that capital controls do not significantly change credit allocation between more versus less productive firms, as proxied by tradable/non-tradable sectors or firm profitability. In column 1 of Table 7, we find that the reduction in total debt for firms with transactional FX lending relationships is not statistically different across firms in tradable versus non-tradable sectors. In column 2, we test whether additional FX exposure through arm-length lenders, which predicts stronger FX-debt flow reductions, is associated with differential cutbacks in

total liabilities across tradable/non-tradable sectors. The estimated coefficients suggest that capital controls reduce credit more strongly to firms in non-tradable sectors, although the difference between firms in tradable versus non-tradable sectors is not statistically significant. Columns 3 and 4 show similar results for firms with high versus low ROA, and columns 5 and 6 present the results for firms with high versus low profits per worker. In all cases, we cannot reject the null hypothesis that the debt adjustments induced by capital controls do not significantly alter the allocation of capital across sectors and firms with different levels of profitability.[22]

6.2 Real effects: Capital Controls and Trade during the Boom and the Bust

Figure 4 shows that aggregate-level Colombian trade grew at fast and stable annual rates, close to 20%, from 2006 to mid-2008. Nonetheless, posterior dynamics indicate that Colombian imports and exports declined during the Great Trade Collapse associated with the GFC of 2008-2009 (Bems, Johnson and Yi, 2013). The timing of CC (introduced in the boom and removed just before the unfolding of the GFC), the global financial and trade shock, and the availability of administrative quarterly firm-level data on imports and exports allow us to ask whether CC smooth the contraction in trade associated with the GFC by preemptively reducing corporate debt.

6.2.1 Empirical model

We extend our sample to include 2009, hence we retain observations over the period 2006:Q1-2009:Q4. We exploit the following regression model at the firm*year-quarter level:

$$(8)\quad Y_{f,yq}=\left(\beta_1 Post_{yq}+\beta_2 Crisis_{yq}\right)Exposure\text{-}T_{f,pre}+\left(\gamma_1+\gamma_2 Post_{yq}+\gamma_3 Crisis_{yq}\right)Firm_{f,yq-1}+\delta_{i,yq}+\delta_f+\varepsilon_{f,yq}$$

The dependent variable is either imports or exports, defined in logs. We aim to measure how ex-ante binding exposure to the CC (through the effect of Exposure-$T_{f,pre}$ on total debt) impacts firm-level trade both during the policy period (2007:Q2 to 2008:Q2) and during the crisis (2008:Q3 to

[22] We also rerun the same exercise comparing total liabilities in 2006 and 2008 - rather than in 2006 and 2007 as in Panel B of Table 7 – and obtain similar findings. Results are not reported for brevity and are available upon request.

2009:Q4). To this scope, Exposure-$T_{f,pre}$ is interacted with the $Post_{yq}$ and the $Crisis_{yq}$ dummies: the former has value 1 from 2007:Q2 onwards, the latter only starting from 2008:Q3.

The parameters of interest are β_1 and β_2, measuring the impact of exposure to capital controls on firm-level trade. In particular, β_1 describes the effect of capital controls during the phase of enforcement and relative to the pre-CC period. β_2 estimates the effect of CC during the crisis, and relatively to the CC period. We include our standard set of firm controls, fully interacting them with the $Post_{yq}$ and $Crisis_{yq}$ dummies. In each regression, we will include the interacted ex-ante FX-debt exposure to relationship banks, Exposure-$R_{f,pre}$, not associated with reduced debt growth through capital controls, and which should therefore not cause any real effect. Consistent with previous firm-level regressions, we saturate the model with firm and industry*year-quarter fixed effects.

6.2.2 Baseline Results

Panel A of Table 8 contains the baseline results on firm-level trade from the estimation of model (8). We focus our discussion primarily on columns (1) and (2), excluding firms ex-ante indebted in FX with both relationship and transactional banks.[23] The estimates indicate that firms with higher ex-ante FX-debt and strong FX-lending relationships with local banks adjust neither imports nor exports, both during the implementation of the CC and during the crisis, in line with our results that they could undo the external shocks due to CC through an increase of domestic credit supply.

Higher exposure to capital controls (resulting from the combination of larger ex-ante FX-debt exposure and weak relationships with local banks), interestingly, delivers imports losses on impact (i.e. during the period of enforcement of CC), with an inter-quartile increase in CC-exposure associated with a marginal 4.4% fall. Note also that imports do not revert to pre-CC levels during the crisis. In contrast, there is virtually no effect on exports upon implementation of the CC.

[23] Such companies experience a relatively milder credit supply cut (see Table 5) and their total liabilities do not fall (see Table 7). Hence, among these firms CC are not associated with a debt channel for the real effects of CC during the crisis.

However, during the global crisis, exposure to capital controls is beneficial, with an interquartile increase associated with a 7.2% jump in exports. In robustness checks below, we will show that both results on imports and exports are robust across different versions of the model, including one with no controls nor fixed effects; consistently with previous sections, we additionally perform both PSM estimation and the Oster (2017)'s test.

Before, however, one first interesting observation emerges from the regression for exports in column (3) where we include companies with both ex-ante relational and transactional FX-ties: the benefits of ex-ante transactional FX-exposure during the crisis diminish. We interpret this finding as prima-facie evidence supporting our "debt channel" mechanism: as already mentioned, CC do not constrain the debt growth of the newly included companies, serving their "prudential" role imperfectly and bringing weaker benefits during the GFC.

We have therefore highlighted both costs and benefits of CC. On one side, CC reduce imports; on the other side, exports are unaffected in the aftermath of the policy but grow relatively faster during the crisis. The magnitudes of the benefits during the bust outweigh those of the costs during the boom, though, as suggested by our discussion on the economic significance of the estimated coefficients. However, our paper does not perform a welfare analysis: we just report some benefits and costs.

6.2.3 Mechanism

We run a direct test for our mechanism, the firm debt channel, based on the hypothesis that the pre-crisis reduction in total debt due to CC is beneficial and drives the relative increase in exports for exposed firms.

In particular, we verify that endogenous drops in total debt – i.e. cuts in total liabilities growth orthogonal to exposure to capital controls – do not trigger post-crisis differences in exports. We do not have a strong prior about the real effects of *endogenous* change in firm debt. On the one hand, firms with higher debt may be more fragile once the crisis hits (see e.g. Giroud and Mueller, 2017, and Kalemli-Özcan, Laeven and Moreno, 2022); on the other hand, higher firm leverage may reflect looser financing constraints and hence better fundamentals (see e.g. Albuquerque and Hopenhayn,

2004 and Dinlersoz et al., 2019), especially during booms when large and unconstrained firms substitute equity with debt more strongly (Begenau and Salomao, 2019). Hence, firms that accumulate more debt during the boom and just before the crisis (for endogenous reasons, i.e. orthogonal to CC) may perform better or worse. Our empirical results suggest that this endogenous debt part is not associated with any effect, differently from firm debt reductions in booms due to CC.

The test involves two steps. First, we run a cross-sectional regression of yearly reduction in total liabilities (i.e., yearly debt growth rate with negative sign) as of end-of-2007 against ex-ante exposure to capital controls and industry fixed effects. This model is similar, but not identical, to the one which we used in the estimates of Table 7 (column 6),[24] and produces comparable coefficients (with higher significance at a 1% level). The predicted values from such regressions are denoted by $-\Delta_{1y}\text{Liabilities}_{f,2007}^{\text{predicted}}$: they represent the drop in total firm debt prompted by exposure to capital controls. The residuals from the same regression are labeled as $-\Delta_{1y}\text{Liabilities}_{f,2007}^{\text{residual}}$, and constitute the endogenous variation in total firm debt, orthogonal to CC by construction. In the second step, we replicate our trade regressions, though substituting exposure to CC with $-\Delta_{1y}\text{Liabilities}_{f,2007}^{\text{predicted}}$, and further including $-\Delta_{1y}\text{Liabilities}_{f,2007}^{\text{residual}}$ as an additional independent variable. We show summary statistics for both variables in Table A1 of the Internet Appendix.

Panel B of Table 8 shows the results. The coefficients suggest that the reduction in firm debt caused by capital controls is associated with benefits in terms of exports during the GFC. Importantly, the endogenous reduction in total liabilities (orthogonal to CC) does not affect exports, providing evidence in favor of a firm debt mechanism exclusively linked to CC.

6.2.4 Robustness

To start with, we check the validity of the parallel-trend assumptions by estimating the following regression equation with time-varying parameters:

$$(9)\quad Y_{f,yq}=\sum_{yq\neq 2007Q1}(\beta_{yq}*\text{Exposure-T}_{f,pre}+\gamma_{yq}*\text{Firm}_{f,yq-1})+\delta_{i,yq}+\delta_{f}+e_{f,yq}$$

[24] The only difference is the exclusion of firm controls, contributing marginally to the total variation in total liabilities.

Figure A3 of the Internet Appendix reports estimates of our coefficients of interest β_{yq} from regression equation (9) with exports and imports as dependent variables, respectively in Panel A and Panel B. For exports, coefficients are centered around 0 both before the introduction of the CC and during the boom, i.e. upon enforcement (2007Q2-2008Q2), and eventually shift upward during the crisis. This reassures that the jump in exports associated to binding exposure to CC through transactional intermediaries does not reflect existing pre-CC trends. Moreover, for imports (Panel B), the introduction of CC in 2007Q2 marks a strong downward shift in the coefficients.

We perform many other robustness checks, reported in Table A10 of the Internet Appendix.

First, in Panel A and B, we report the model for exports and imports, respectively, under different and progressively saturated specifications. The described results persist from the most basic version of the model with neither controls nor fixed effects, to the most robust one in column (4), which mirrors Table 8.

In Panel C, we run our regressions over the PSM sample, taking care of self-selection along observables. In practice, we compare trade outcomes of firms exposed to CC (thought arm-length FX-debt exposure) with those of a subset of firms ex-ante borrowing in FX-debt from relationship banks, but with comparable balance sheet characteristics and exposure to several proxies of financing frictions (see section 5.2.3 for details). Both the fall in imports during the boom and the increase in exports are qualitatively and quantitatively unchanged in the smaller PSM sample.

We also formally test coefficient stability through the Oster's test. In particular, for exports we run the test for the coefficient loading the interaction between the $Crisis_{yq}$ dummy and the constraining exposure to CC, capturing the real effects of CC during the crisis. Moreover, for imports, we run the test for the coefficient loading the interaction between the $Post_{yq}$ dummy and the constraining exposure to CC, capturing the costs of CC during the boom. In both cases, we assume $\tilde{R}^2=\min\left\{1.3\hat{R}^2;1\right\}=1$, where $\hat{R}^2$ is the R-squared from the most saturated model (retrieved from

column (4) of Panels A and B for exports and imports, respectively). We report the coefficients of proportionality in Panel D and they are both strictly above 1, with an especially high value of about 33 for exports regressions.

In Panel E, we check that results are robust to different definitions of the variables measuring ex-ante FX-debt exposures. Consistently with previous sections of the paper, we employ proxies that rescale inflows by total liabilities, or simply by taking logs, or consider realizations as of 2007:Q1, or, finally, compute the average inflow over the period 2005:Q1-2005:Q4. Results generally hold across alternative definitions.[25]

Additionally, we collapse our observations as firm-level averages during the three periods of interest, following Bertrand, Duflo and Mullainathan (2004), and re-run our model. That is, for each firm, we compute the mean value of imports and exports, and of the left-hand side variables as well, over the periods: 2006:Q1-2007:Q1 (pre); 2007:Q2-2008:Q2 (policy); 2008:Q3-2009:Q4 (crisis). In this framework, the dummy $Post_{yq}$ has a value of 0 during the pre-CC period and a value of 1 during the policy and crisis periods. Furthermore, the dummy $Crisis_{yq}$ has a value of 1 during the crisis period and a value of 0 otherwise. We report results in Panel F and they are both qualitatively and quantitatively similar to those from baseline regressions.

In Panel G, we check the robustness of our results to different definitions of the crisis and of the policy periods. The Central Bank lifted CC in early October 2008 and Lehman Brothers failed in mid-September of the same year. Therefore, we may label 2008:Q3 as a policy quarter (columns 1 and 2) or exclude it from the analysis (columns 3 and 4). In both cases, baseline findings are unaffected.

In Panel H, we exclude companies operating in sectors related to the extraction, production, and processing of oil (corresponding to ISIC sectors 10, 11, 12, 13, 14, 23 and industries 2521, 2529, and

[25] Measuring exposures through the realization of relationship or transaction-driven FX-inflows (rescaled by total assets) as of 2007:Q1 generates inconsistent results (relative to the baseline findings) for imports. However, for all other measures taking averages over longer periods, baseline results hold. Note that taking a single year-quarter realization of FX-inflows may be problematic, as flow variables can be noisy and highly volatile in a given quarter. As a result, a single entry may not appropriately reflect the FX-debt exposure of a given company.

2924), which represents a high share of Colombian trade. One concern is that the findings disproportionately reflect the behavior of oil-related companies, which might have experienced specific dynamics unrelated to CC (while being at the same time exposed to them). Nonetheless, estimated coefficients indicate that oil companies do not drive our results.

In Panel I, we use as control group those companies that do not borrow at all in FX, hence unaffected by the CC. Comparing their trade performance with FX-indebted companies is therefore informative for isolating the effects of CC through the firm debt channel. Indeed, results are very similar.

In a similar vein, in Panel J, we re-run the baseline regressions within the group of firms ex-ante indebted in FX with arm-length lenders, i.e. the firms for which capital controls bind. By doing so, we address residual worries about firms' self-selection into different segments (relationship vs transactional) of the FX-debt markets (despite previous results on coefficients stability in Panels A, B, and C suggest that self-selection does not drive results). In column 1, we report coefficients for the baseline version of the model for exports. Like in pooled regressions, exposure to controls has no impact during the phase of enforcement of CC and, at the same time, exerts benefits during the crisis. The usual interquartile increase in exposure to the policy boosts exports by 5.68% during the GFC. The coefficient is slightly smaller relative to the baseline version of the model, which is not surprising, given that the average company in the group is constrained by capital controls, so variation takes place just on an intensive margin. In column 2, we find again that benefits stem from variations in total debt caused by CC, rather than by endogenous changes in total debt orthogonal to the policy (which have zero effect). In columns 3 and 4, results for imports are comparable to those commented for pooled regressions.

6.2.5 Heterogeneity

We test for further heterogeneous effects of capital controls across companies. The economics of prudential capital controls suggest that financially constrained companies benefit more from a preemptive reduction in debt growth, as they would otherwise find it more difficult to refinance

themselves during a negative financial shock, the downside being that upon implementation they might be affected more strongly (see e.g. Korinek, 2011). Hence, we separate companies according to two proxies of ex-ante financial constraints derived from loan-level data: the interest rate paid on loans and the share of bank credit with short maturity (i.e., below or equal to 1 year). Note that companies paying high interest rates are on average riskier. Similarly, companies relying extensively on short-term debt are more vulnerable to unexpected negative liquidity shocks. During an unexpected crisis, all these firms are likely to experience worse outcomes if their debt balance is relatively larger. Hence, they are also supposed to benefit more from pre-crisis reduction in total indebtedness.

Before moving to the discussion of results, we describe how we build proxies of financing constraints. First, we run loan-level regressions of interest rate and short-term loan dummy against bank*industry*year-quarter fixed effects, over the period 2005:Q1-2007:Q1. The residuals denote financial constraints due to firm-specific factors and "cleaned" from industry, lender-specific, or common macroeconomic time-varying factors (and from all potential interactions among them). Then, in each year-quarter, we build a weighted firm-level average, with weights given by the loan share over the total firm's bank credit. Finally, we compute the firm-level mean over the period.[26] We display results in Table 8, Panel C (Panel D) for exports (imports). Firms are split into highly and lowly constrained along the two margins taking the median value in the regression sample as a benchmark.[27] As we lose few observations in the process, we check that the baseline results hold in the overall smaller samples (see columns 1 and 4 of Panels C and D of Table 8).

[26] The results presented below go through both if we build our measures based on the original loan rates or short-term debt shares or on residuals derived from more saturated models (including for instance other loan characteristics). We also make sure that each of these methodologies works if we were to repeat them over the longer pre-crisis period 2005:Q1-2008:Q2. Related tables are available upon request.

[27] Our measures of constraints are built as the firms' specific differences relative to the average values applied over loans granted in a given sector by the same bank in a specific year-quarter. Hence, an alternative reasonable choice is splitting companies based on whether their proxy is above or below zero. Firms with positive values are in fact more constrained than the average industry peer applying for a loan to a given bank over the pre-CC period. Indeed, results are robust to such specifications. Tables are available upon request.

Regressions on exports suggest that the benefits of capital controls concentrate among ex-ante more financially constrained companies. While benefits are not statistically significant among low interest-rate and low short-term debt companies, they are both statistically and economically significant for constrained companies along both margins – and amount to 10% and 13%, respectively, in correspondence of an interquartile jump in exposure to the policy. Overall, the evidence presented in this subsection suggests that the benefits of capital controls are larger among ex-ante more financially constrained companies, in line with the firm debt channel documented in previous subsections.

6.3 Real effects: Capital Controls and Employment

We finally check that CC consistently impact other margins of firms' real activity. To this end, we exploit firm-level employment data, available from 2008:Q2 onward. No other variables (such as investment) are available at firm-level with quarterly frequency.

We employ a model identical to that applied so far for trade regressions, though, as our sample starts in the period of enforcement of CC, we can just compare employment dynamics during the crisis to those during the period of enforcement of CC. We report baseline regression estimates in Panel A of Table 9. We include only companies (ex-ante) borrowing in FX from either relationship or transactional banks, to better identify the implications of binding exposure to CC. Column 1 suggests that firms constrained by CC experienced a relative jump in employment during the crisis by roughly 6.3%. Moreover, in column 2, relatively higher binding exposure to CC is associated with larger employment, whereas stronger relationship FX-lending ties is not. Finally, in column 3, we retain just the last quarter before and during the crisis, i.e. we retain observations for 2008:Q2 and 2009:Q4, removing the imbalance in observations across the two periods due to uneven data availability. Results go through. Depending on whether one considers estimates in column 2 or in column 3, a 1 interquartile higher (ex-ante) exposure to CC is associated with a jump in employment during the crisis by 1.4% and 2.2%, respectively. Column 4 shows that the component of total debt

growth orthogonal to CC does not drive our findings, confirming the CC-induced corporate debt mechanism.

In Panel B, we explore the extent to which financial constraints affect employment outcomes during the crisis. We run the regression of column 2 depending on the firm's interest rate and short-term indebtedness. Overall, we find similar results to those in export regressions (reported in Table 8, Panel C), in that more financially constrained transactional firms (higher interest rates and more short term loans) exhibit a larger effect of ex-ante FX-exposure on employment during the crisis.

A crucial concern applying to these findings is that they may reproduce a mechanical rebound during the GFC, after that CC-exposed firms reduce employment upon implementation of the policy. Unfortunately, firm-level data do not allow us to verify whether this is the case, as they start in 2008:Q2. Our second-best approach consists of exploiting industrial-level data on employment for 27 manufacturing industries. In particular, we translate the approach followed so far at the firm-level at a less granular 3-digit industrial level.[28] For exposure variables, we collapse firm-level data by taking weighted industry-averages, with weights given by the size of a company's assets over total assets in the industry (as of end of 2006). We augment the model with the same firm controls[29] applied in previous sections and industry and year-quarter fixed effects. Estimates from the most robust version of the model in column (4) of Table A11 in the Internet Appendix indicate - in line with firm-level results - that higher pre-policy exposure to CC increases employment during the crisis. In detail, an inter-quantile variation in industrial pre-policy exposure to CC raises employment by 1.9% during the crisis (robust to other definitions of exposure to CC, i.e. proxies which rescale debt flows by total

[28] The hypothesis that we test is whether capital controls, by reducing total debt growth, made companies more resilient to the crisis, with consequential effects at the industrial level. A key step, therefore, is to show that looser FX-ties to relationship banks constraint debt growth also at the industrial level. In the Internet Appendix, Figure A4, Panel A, suggests indeed that for the 27 industries that we match with firm-level data, the relation between exposure to capital controls and subsequent *reduction* in total liabilities between 2006 and 2007 is markedly positive. Note that such relation controls for industry and year fixed effects and is significant at the 1% level and is robust to the inclusion of firm controls. It implies a 5.8% reduction in total liabilities for a 1 interquartile increase in exposure to capital controls at the industrial level. Furthermore, also at the industry level, like in firm-level analysis, ex-ante FX-exposure to relationship banks does *not* constrain total debt growth (Figure A4, Panel B).

[29] For time-varying firm controls, we take a similar approach and build time-varying weighted averages. All firm controls are interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies.

liabilities in column 5 or by taking logs in column 6). Industrial-level estimates are therefore also quantitatively in line with firm-level estimates. Finally, and importantly, CC do not affect employment during the period of enforcement of CC (i.e. before the GFC).

7. Conclusions

In this paper, we ask whether prudential capital controls, by reducing firm debt during a boom, are associated with real effects. Differently from previous studies, we investigate such real effects not only during the boom itself but also during the subsequent bust, thereby identifying positive real effects (or prudential benefits) of capital controls, due to their preemptive mitigation of firm indebtedness and fragility.

Our empirical identification exploits the introduction (during a strong credit boom and high interest rates) of a 40% *unremunerated* reserve requirement (URR) on foreign currency (FX) debt inflows in Colombia, i.e. capital controls (CC). Eventually, the URR was lifted just before the Global Financial Crisis: the timing of the policy allows us therefore to test whether the preemptive debt reduction during the boom due to CC was beneficial amid a large, negative, and exogenous financial shock such as the GFC. Moreover, we access matched administrative datasets, most importantly the credit registry and firm-level data on FX debt inflows and trade, all at a quarterly frequency. Through these data, we study the dynamics of capital inflows and of the local credit cycle altogether and uncover a firm debt channel through which capital controls impact the real economy.

Our robust results show that capital controls reduce FX-debt inflows (by 30%) and that the reduction is relatively stronger for firms with larger ex-ante FX borrowing (by a further 10%). Crucially, not all the affected companies can substitute this credit cutback with lending in peso from domestic banks. In particular, firms with ex-ante relatively weaker relationships with Colombian banks suffer an additional restriction in credit supply and hence experience a slowdown in credit growth and in total debt. This firm-debt channel has real ramifications both during the phase of implementation of capital controls (the boom) and during the subsequent GFC (the bust). During the boom, firms more constrained by capital controls reduce imports. However, slower debt growth in

the boom grants a better performance during the bust, in the form of larger exports (by 7.2%), especially for financially constrained firms (between 10% and 13%). Effects during the crisis fully stem from a reduction in firm debt associated with capital controls and not from endogenous debt change orthogonal to the policy (where the firm debt changes are between the introduction of CC and the start of the GFC). We also provide evidence of stronger employment performance during the GFC for firms constrained by CC. Finally, we check whether the reduction in total indebtedness spurred by CC is especially strong for firms operating in non-tradable sectors and/or firms with low profitability or productivity, to empirically assess whether CC improve or worsen credit allocation during a boom. Our results suggest that capital controls do not significantly tilt credit allocation towards tradable/non-tradable sectors nor towards more versus less profitable/productive firms.

Our key contribution to the literature is to show several benefits of capital controls for the real economy, starting from micro-level data (loan, firm, and bank) and based on a firm debt channel mechanism. This exploits the relative strength of firms' relationships with the local banking system as a channel for partly arbitraging the debt reduction from abroad due to the capital controls. Our results fill the gap between the increasing faith that both policy-makers and academics are arguing towards macroprudential capital controls and the inconclusive and problematic evidence based on time series and cross-country studies. In addition, as highlighted in the Introduction, institutional details are crucial to understanding the effects of capital controls (e.g. Keller (2019)'s results versus our results).

We conclude by stressing the fact that we *do not* perform a welfare analysis, we are just reporting prudential benefits (and some costs) of capital controls via the firm debt channel. Pinning down the net welfare effects of the policy requires a macroeconomic model accounting for all those different effects and trade-offs, a task falling outside the scope of this work. We leave these important questions for future research.

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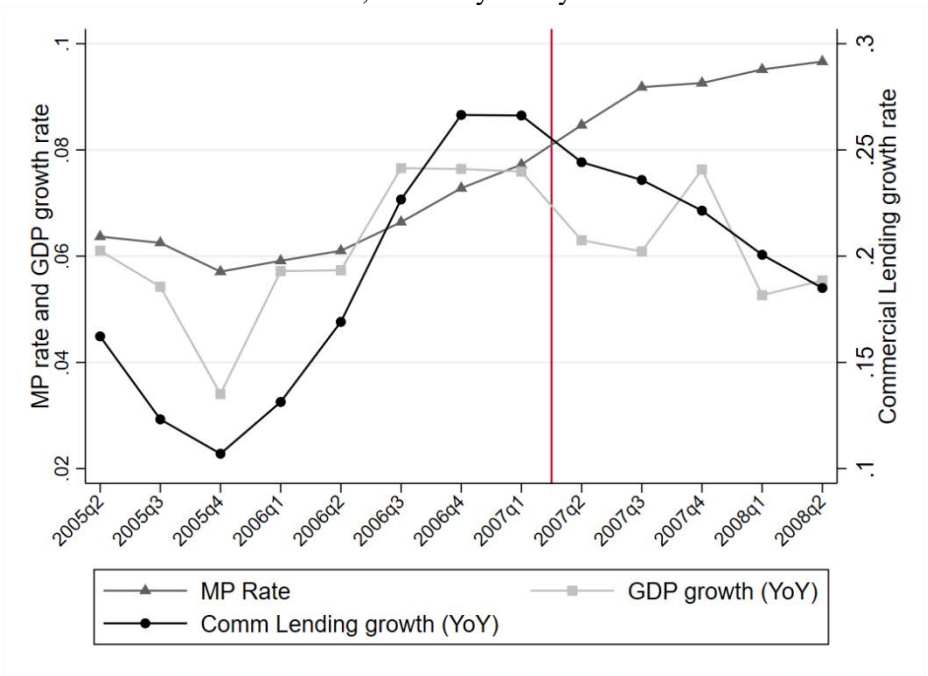
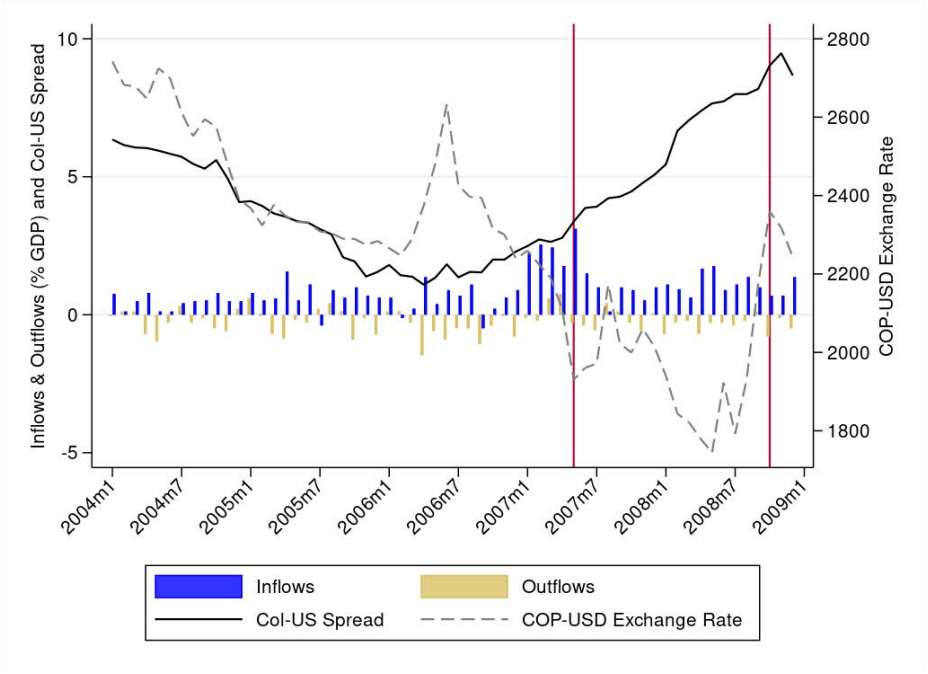
Figures

Figure 1: Macroeconomic Environment

Panel A: Credit Growth, Monetary Policy and Economic Growth

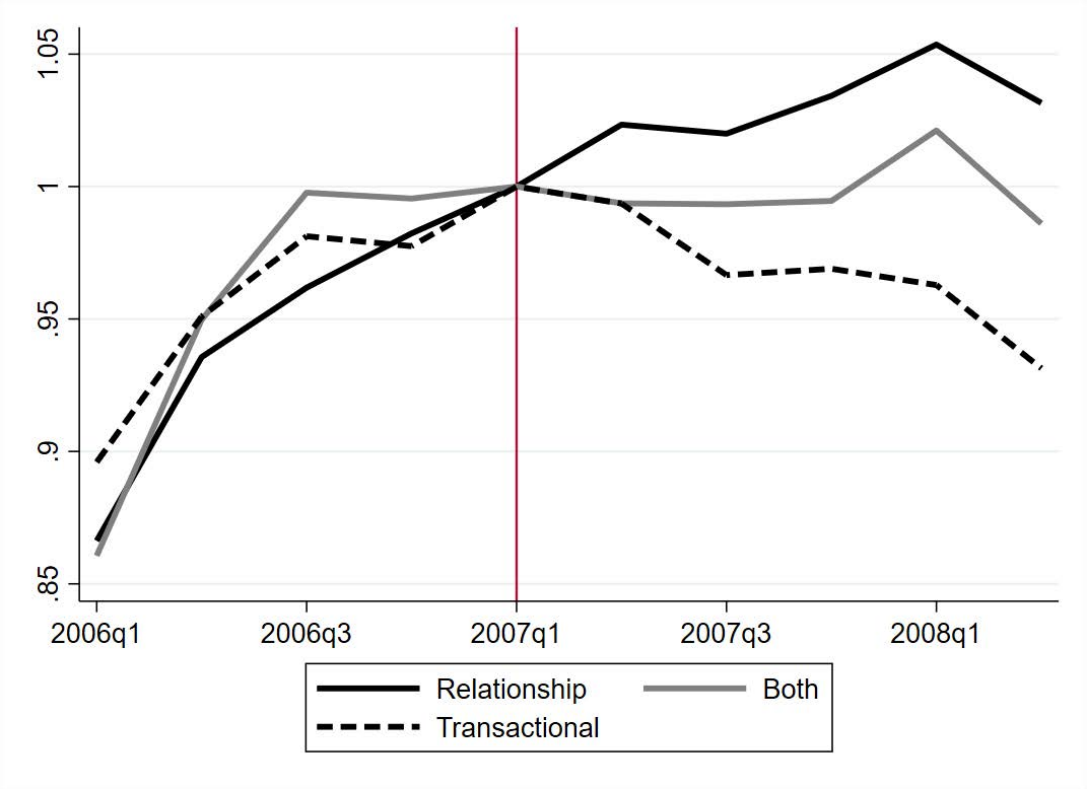


Panel B: Exchange Rate and Financial Flows



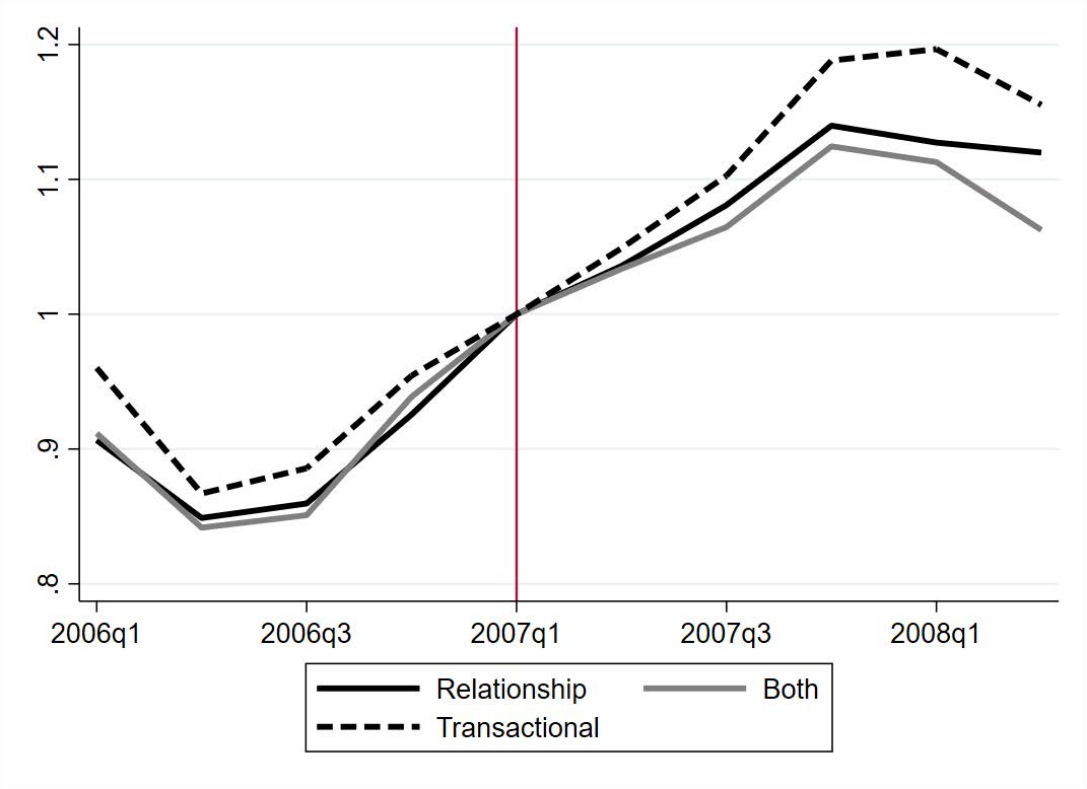
This figure depicts macroeconomic developments in Colombia. In Panel A, the dark grey line (connected by triangles) indicates the Colombian monetary policy rate. The black line (connected by circles) represents the year-over-year growth rate of commercial lending. The light grey line (connected by squares) denotes the year-over-year growth rate of GDP. In Panel B, the blue (yellow) bars denote capital inflows (outflows), rescaled by GDP. We apply the convention that inflows (outflows) are measured positively (negatively). The black solid line is the spread between the Colombian and US monetary policy rate. The dashed grey line is the nominal exchange rate between the Colombian Peso (COP) and USD, measured as number of COP per 1 USD.

Figure 2: Aggregate Volume of Loans across Firms



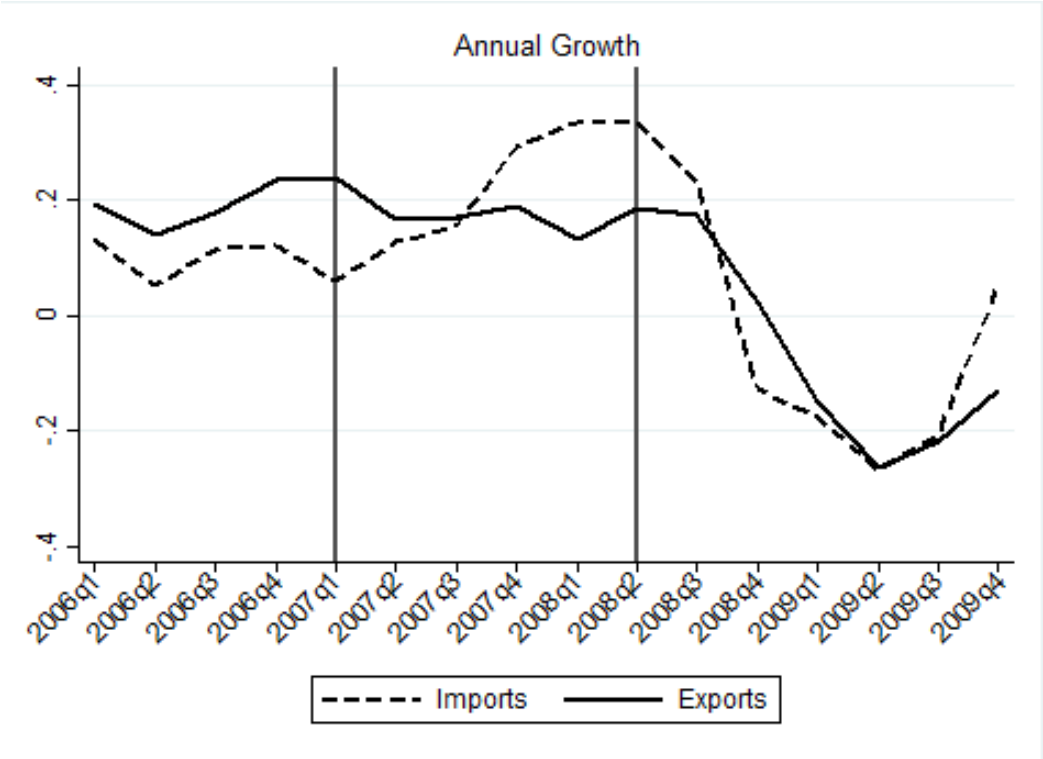
This figure depicts the total amount of (peso-denominated) credit provided to different groups of firms by Colombian banks, depending on whether such firms borrowed in FX from relationship and/or transactional banks before the enforcement of CC. Credit amounts are rescaled by the 2007:Q1 value.

Figure 3: Average Loan Interest Rate across groups of Companies



This figure shows the average loan rate applied by Colombian banks to different groups of firms, depending on whether such firms borrowed in FX from relationship and/or transactional banks before the enforcement of CC. The group-level average loan rate results from a weighted average of the loan rates applied on a single loan, weighted by the share accounted for by that loan as compared to the overall amount of group-level credit. The resulting loan rates are rescaled by the 2007:Q1 value.

Figure 4: Country-level Imports and Exports



This figure shows the annual growth of Colombian imports and exports volumes, represented by the dashed and solid black line, respectively. Imports and exports volumes are deflated using 2005:Q1 constant prices.

Tables

Table 1: Summary Statistics

PANEL A: Firm-level Analysis: 2006:Q1-2007:Q1

VARIABLES	Scale	N	Mean	P25	P50	P75	SD
FX $\text{Inflows}_{f,yq}$	Flow over Total Assets	14,125	0.0133	0	0	0.00660	0.0370
FX-T $\text{Inflows}_{f,yq}$	Flow over Total Assets	5,751	0.0132	0	0	0.00351	0.0421
FX-R $\text{Inflows}_{f,yq}$	Flow over Total Assets	12,176	0.00915	0	0	0.00216	0.0258
Share-$\text{FX}_{f,yq}$	$\in [0,1]$	11,769	0.291	0	0.00371	0.631	0.397
YearlyShare-$\text{FX}_{f,yq}$	$\in [0,1]$	14,125	0.332	0	0.163	0.656	0.369
$\text{DebtType}_{f,yq}$	0/1 Dummy	6,647	0.798	1	1	1	0.401
$\text{Exposure}_{f,pre}$	Flow over Total Assets	14,125	0.0132	0.000245	0.00374	0.0160	0.0231
Exposure-$\text{R}_{f,pre}$	Flow over Total Assets	12,176	0.00853	0.000121	0.00152	0.00979	0.0151
Exposure-$\text{T}_{f,pre}$	Flow over Total Assets	5,751	0.0143	0.00129	0.00506	0.0151	0.0257
$\text{Liabilities}_{f,y-1}$	Logs	14,125	8.374	7.198	8.318	9.512	1.673
$\text{ROA}_{f,y-1}$	Flow over Total Assets	14,125	0.0366	0.00931	0.0296	0.0627	0.0703
$\text{Size}_{f,y-1}$	Logs	14,125	8.848	7.678	8.802	9.952	1.621
$\text{Imports}_{f,yq-1}$	Logs	11,722	4.968	3.048	5.629	7.302	2.974
$\text{Exports}_{f,yq-1}$	Logs	7,938	4.074	0	4.512	7.021	3.362
$\text{BankCET1}_{f,yq-1}$	Stock over Total Assets	14,125	0.0397	0.0328	0.0388	0.0451	0.00865
$\text{BankROA}_{f,yq-1}$	Stock over Total Assets	14,125	0.0152	0.00960	0.0154	0.0197	0.00673
$\text{BankSize}_{f,yq-1}$	Logs	14,125	16.43	16.21	16.43	16.69	0.369
$\text{BankNPL}_{f,yq-1}$	Stock over Total Assets	14,125	0.0221	0.0197	0.0213	0.0235	0.00403
$\text{BankSaving}_{f,yq-1}$	Stock over Total Assets	14,125	0.334	0.303	0.331	0.361	0.0479
$\text{BankCheck}_{f,yq-1}$	Stock over Total Assets	14,125	0.146	0.125	0.140	0.165	0.0335
BankFX-Funds $_{f,yq-1}$	Stock /	14,125	0.0519	0.0392	0.0505	0.0638	0.0197
$\text{Default}_{f,yq}$	0/1 Dummy	14,125	0.0920	0	0	0	0.289
$\text{Relationships}_{f,yq}$	Discrete	14,125	3.816	2	4	5	1.996

Summary statistics are computed over the period: 2006:Q1-2007:Q1. *Definition of the variables*. FX $\text{Inflows}_{f,yq}$ represents total FX debt inflows, rescaled by total assets. FX-T $\text{Inflows}_{f,yq}$ and FX-R $\text{Inflows}_{f,yq}$ refer to FX-inflows intermediated by transactional (i.e., foreign) and relationship (i.e., local) banks, respectively, both rescaled by total assets. $\text{Exposure}_{f,pre}$ is the average of FX $\text{Inflows}_{f,yq}$ in the period from 2005:Q1 to 2007:Q1. Exposure-$\text{R}_{f,pre}$ and Exposure-$\text{T}_{f,pre}$ are the averages of FX-R $\text{Inflows}_{f,yq}$ and FX-T $\text{Inflows}_{f,yq}$ in the period from 2005:Q1 to 2007:Q1, respectively. Share-$\text{FX}_{f,yq}$ is the share of FX-Debt flows out of total debt flows in a given quarter. YearlyShare-$\text{FX}_{f,yq}$ is the ratio between yearly FX-flows and yearly total debt flows. $\text{Liabilities}_{f,y-1}$ is the logarithm of firm total liabilities. $\text{ROA}_{f,y-1}$ is previous year return on assets and $\text{Size}_{f,y-1}$ is the logarithm of total firm assets over the same period. $\text{Imports}_{f,yq-1}$ and $\text{Exports}_{f,yq-1}$ are the logarithm of (1 + firm imports) and (1 + firm exports), respectively. All variables with Bank prefix refer to firm-level weighted averages of local banks characteristics, where weights are loan share in total bank debt accounted for by a specific bank. $\text{BankCET1}_{f,yq-1}$ is bank common equity over total assets; $\text{BankROA}_{f,yq-1}$ is bank return on assets; $\text{BankSize}_{f,yq-1}$ is the logarithm of total bank assets; $\text{BankNPL}_{f,yq-1}$ is bank non-performing loans over total assets; $\text{BankSaving}_{f,yq-1}$ is bank saving deposits over total assets; $\text{BankChecking}_{f,yq-1}$ is bank checking deposits over total assets and $\text{BankFX-Funds}_{f,yq-1}$ is bank FX-liabilities rescaled by total assets. $\text{Default}_{f,yq}$ is a dummy with value 1 in case of firm default in at least one bank loan over previous year. $\text{Relationships}_{f,yq}$ is the number of local banks from which a company borrows.

PANEL B: Loan-Level Analysis (Regressions on Substitution of FX Debt with Peso Debt): 2006:Q1-2007:Q1

VARIABLES	Scale	N	Mean	P25	P50	P75	SD
Loan-level Variables							
$PesoLoan_{f,b,yq}$	Logs	50,527	5.145	3.836	5.349	6.758	2.233
$Interest\ Rate_{f,b,yq}$	%	50,527	13.57	9.400	13.42	18	7.142
$Maturity_{f,b,yq}$	Months	50,527	46.63	6	23.15	43.00	115.9
$Collateral_{f,b,yq}$	0/1 Dummy	50,527	0.422	0	0	1	0.494
$FX\text{-}Lender_{f,b,pre}$	0/1 Dummy	50,527	0.377	0	0	1	0.485
Firm-level Variables							
$ROA_{f,y-1}$	Flow over Total Assets	50,527	0.0337	0.00941	0.0278	0.0581	0.0636
$Size_{f,y-1}$	Logs	50,527	9.169	8.051	9.107	10.23	1.563
$Imports_{f,yq-1}$	Logs	50,527	4.381	0	5.262	7.227	3.359
$Exports_{f,yq-1}$	Logs	50,527	2.510	0	0	5.629	3.352
$Default_{f,yq}$	0/1 Dummy	50,527	0.111	0	0	0	0.314
$Relationships_{f,yq}$	Discrete	50,527	4.764	3	5	6	2.088
$Exposure\text{-}T_{f,pre}$	Flow over Total Assets	50,527	0.0120	0.00124	0.00466	0.0120	0.0225
$Exposure\text{-}R_{f,pre}$	Flow over Total Assets	50,527	0.00949	0.000156	0.00254	0.0114	0.0154

Summary statistics are computed over the period: 2006:Q1-2007:Q1. *Definition of the variables*. Loan-level variables. Peso $Loan_{f,b,yq}$ is defined as the logarithm of the loan in Pesos. $Interest\ Rate_{f,b,yq}$ is the interest rate paid on a given loan, defined in percentage points. $Maturity_{f,b,yq}$ is the maturity of the loan, in months. $Collateral_{f,b,yq}$ is a dummy variable with value 1 if a loan is collateralized and 0 otherwise. $FX\text{-}Lender_{f,b,pre}$ is a dummy variable with value 1 if bank b provides also FX debt (in addition to peso debt) to firm f between 2005:Q1 and 2007:Q1, and 0 otherwise. Firm-level variables. $ROA_{f,y-1}$ is firm-level previous year return on assets and $Size_{f,y-1}$ is the logarithm of total firm assets over the same period. $Imports_{f,yq-1}$ and $Exports_{f,yq-1}$ are the logarithm of (1 + firm imports) and (1 + firm exports), respectively. $Default_{f,yq}$ is a dummy with value 1 in case of firm default in at least one bank loan over previous year. $Relationships_{f,yq}$ is the number of local banks from which a company borrows. $Exposure_{f,pre}$ is the average of FX $Inflows_{f,yq}$ (ratio between FX-debt inflows and total assets) in the period from 2005:Q1 to 2007:Q1. $Exposure\text{-}R_{f,pre}$ and $Exposure\text{-}T_{f,pre}$ are the averages of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) and FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively.

Table 2: Summary Statistics – Firms Sorted by Pre-Policy Relationship and/or Transactional FX-Borrowing

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	RELATIONSHIP (1684 companies)			BOTH (775 companies)			TRANSACTIONAL (402 companies)		
VARIABLES	Mean	P50	SD	mean	p50	SD	Mean	P50	SD
FX Inflows$_{f,yq}$	0.00826	0	0.0255	0.0229	0.00303	0.0468	0.0160	0	0.0505
FX-T Inflows$_{f,yq}$	0	0	0	0.0118	0	0.0370	0.0160	0	0.0505
FX-R Inflows$_{f,yq}$	0.00826	0	0.0255	0.0111	1.19e-06	0.0263	0	0	0
Share-FX$_{f,yq}$	0.235	0	0.378	0.396	0.261	0.403	0.301	0	0.422
YearlyShare-FX$_{f,yq}$	0.205	0.043	0.292	0.400	0.330	0.310	0.357	0.177	0.392
Exposure$_{f,pre}$	0.00743	0.000736	0.0148	0.0237	0.0141	0.0291	0.0174	0.00541	0.0302
Exposure-R$_{f,pre}$	0.00743	0.000736	0.0148	0.0109	0.00453	0.0155	0	0	0
Exposure-T$_{f,pre}$	0	0	0	0.0128	0.00492	0.0228	0.0174	0.00541	0.0302
ROA$_{f,y-1}$	0.0437	0.0332	0.0714	0.0289	0.0251	0.0574	0.0211	0.0226	0.0832
Size$_{f,y-1}$	8.334	8.297	1.461	9.854	9.816	1.498	9.089	9.125	1.524
Imports$_{f,yq-1}$	2.850	0.774	3.136	6.028	6.745	2.773	4.716	5.485	3.136
Exports$_{f,yq-1}$	1.382	0	2.564	4.107	4.562	3.732	2.517	0	3.209
BankCET1$_{f,yq-1}$	0.0392	0.0381	0.00865	0.0403	0.0399	0.00799	0.0405	0.0396	0.00969
BankROA$_{f,yq-1}$	0.0154	0.0157	0.00672	0.0149	0.0148	0.00662	0.0150	0.0152	0.00693
BankSize$_{f,yq-1}$	16.46	16.46	0.363	16.40	16.39	0.336	16.36	16.40	0.436
BankNPL$_{f,yq-1}$	0.0220	0.0212	0.00402	0.0219	0.0213	0.00360	0.0227	0.0214	0.00478
BankSaving$_{f,yq-1}$	0.336	0.334	0.0484	0.329	0.326	0.0435	0.332	0.328	0.0526
BankCheck$_{f,yq-1}$	0.147	0.141	0.0337	0.144	0.139	0.0301	0.146	0.140	0.0384
BankFX-Funds$_{f,yq-1}$	0.0528	0.0510	0.0200	0.0520	0.0504	0.0180	0.0479	0.0478	0.0209
Default$_{f,yq}$	0.0774	0	0.267	0.111	0	0.314	0.117	0	0.321
Relationships$_{f,yq}$	3.631	3	1.889	4.635	4	2.127	3.012	3	1.614

RELATIONSHIP are companies that borrowed in FX only from local banks in the period from 2005:Q1 to 2007:Q1 and TRANSACTIONAL only from foreign ones. BOTH refers to the set of firms borrowing in FX from both local and foreign banks in the period from 2005:Q1 to 2007:Q1. Summary statistics are computed over the period: 2006:Q1-2007:Q1. FX Inflows$_{f,yq}$ represents total FX debt inflows, rescaled by total assets. FX-T Inflows$_{f,yq}$ and FX-R Inflows$_{f,yq}$ refer to FX-inflows intermediated by relationship and transactional banks, respectively, both rescaled by total assets. Share-FX$_{f,yq}$ is the share of FX-Debt flows out of total debt flows. Exposure$_{f,pre}$ is the average of FX Inflows$_{f,yq}$ in the period from 2005:Q1 to 2007:Q1. Exposure-R$_{f,pre}$ and Exposure-T$_{f,pre}$ are the averages of FX-R Inflows$_{f,yq}$ and FX-T Inflows$_{f,yq}$ in the period from 2005:Q1 to 2007:Q1, respectively. Exposure$_{f,pre}$ is the average of FX Inflows$_{f,yq}$ in the period from 2005:Q1 to 2007:Q1. Exposure-R$_{f,pre}$ and Exposure-T$_{f,pre}$ are the averages of FX-R Inflows$_{f,yq}$ and FX-T Inflows$_{f,yq}$ in the period from 2005:Q1 to 2007:Q1, respectively. ROA$_{f,y-1}$ is previous year return on assets and Size$_{f,y-1}$ is the logarithm of total firm assets over the same period. Imports$_{f,yq-1}$ and Exports$_{f,yq-1}$ are the logarithm of (1 + firm imports) and (1 + firm exports), respectively. All variables with Bank prefix refer to firm-level weighted averages of local banks characteristics, where weights are loan share in total bank debt accounted for by a specific bank. BankCET1$_{f,yq-1}$ is bank common equity over total assets; BankROA$_{f,yq-1}$ is bank return on assets; BankSize$_{f,yq-1}$ is the logarithm of total bank assets; BankNPL$_{f,yq-1}$ is bank non-performing loans over total assets; BankSaving$_{f,yq-1}$ is bank saving deposits over total assets; BankChecking$_{f,yq-1}$ is bank checking deposits over total assets and BankFX-Funds$_{f,yq-1}$ is bank FX-liabilities rescaled by total assets. Default$_{f,yq}$ is a dummy with value 1 in case of firm default in at least one bank loan over previous year. Relationships$_{f,yq}$ is the number of local banks from which a company borrows.

Table 3: Impact of Capital Controls on FX-Debt Inflows

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	FX Inflows$_{f,yq}$									
$Post_{yq}$	-0.003***	-0.003***	-0.004***	-0.005***	-	-	-	-	-	-
	(0.001)	(0.000)	(0.001)	(0.001)						
$Post_{yq}$ *$Exposure_{f,pre}$				-0.429***	-0.429***	-0.459***	-0.461***	-0.401***	-0.377***	-0.533***
				(0.050)	(0.050)	(0.052)	(0.051)	(0.047)	(0.082)	(0.121)
N	28288	28288	28288	28288	28288	28288	28288	16394	7192	3317
R^2	0.0016	0.3903	0.3938	0.4149	0.4149	0.4167	0.4615	0.4748	0.5105	0.4954
Companies	All	All	All	All	All	All	All	Relationship	Both	Transactional
Firm FE	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
Quarter FE	NO	NO	YES	YES	-	-	-	-	-	-
Macro Controls	NO	NO	YES	YES	-	-	-	-	-	-
Firm Controls	NO	NO	YES	YES	YES	-	-	-	-	-
Bank Controls	NO	NO	YES	YES	YES	-	-	-	-	-
Year-quarter FE	NO	NO	NO	NO	YES	YES	-	-	-	-
Firm Controls*Post	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES
Bank Controls*Post	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES
Industry*Year-quarter FE	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES

This table shows the effect of the introduction of capital controls on total FX debt inflows (rescaled by total assets), depending on pre-policy exposure to FX debt inflows. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 to 2008:Q2 and 0 from 2006:Q1 to 2007:Q1. $Exposure_{f,pre}$ is the average FX debt inflow (rescaled by total assets) over the period from 2005:Q1 to 2007:Q1. For easing comparisons between results in columns 4 and 5, we demean this variable. Macro Controls include lagged values of: GDP yearly growth rate; yearly inflation rate; log of VIX and of exchange rate and of the lagged monetary policy rate. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1}$. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$ and $BankFX\text{-}Funds_{b,yq-1}$. The sign "-" denotes cases where a variable (or a group of variables or of fixed effects) is spanned out by other controls and/or fixed effects. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Table 4: Impact of Capital Controls on Currency Composition of Corporate Debt Issuances

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	$DebtType_{f,yq}$ (1=Peso; 0=FX)					$ShareFX_{f,yq}$				
$Post_{yq}$	0.019	-	-	-	-	-0.016	-	-	-	-
	(0.020)					(0.014)				
$Post_{yq}$*$Exposure_{f,pre}$	2.111***	2.376***	1.770**	3.122***	1.637**	-1.691***	-1.980***	-2.134***	-1.875***	-1.627***
	(0.346)	(0.385)	(0.850)	(0761)	(0.634)	(0.217)	(0.247)	(0.456)	(0.363)	(0.464)
N	13485	13485	8317	2384	1527	23278	23278	13181	6546	2237
R^2	0.3871	0.4846	0.4639	0.6022	0.6723	0.3594	0.4248	0.4187	0.4545	0.5970
Companies	All	All	Relationship	Both	Transactional	All	All	Relationship	Both	Transactional
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Quarter FE	YES	-	-	-	-	YES	-	-	-	-
Macro Controls	YES	-	-	-	-	YES	-	-	-	-
Firm Controls	YES	-	-	-	-	YES	-	-	-	-
Bank Controls	YES	-	-	-	-	YES	-	-	-	-
Year-quarter FE	NO	-	-	-	-	NO	-	-	-	-
Firm Controls*Post	NO	YES	YES	YES	YES	NO	YES	YES	YES	YES
Bank Controls*Post	NO	YES	YES	YES	YES	NO	YES	YES	YES	YES
Industry*Year-quarter FE	NO	YES	YES	YES	YES	NO	YES	YES	YES	YES

This table shows the effect of the introduction of capital controls on the relative frequency of peso vs FX debt issuance (columns 1 to 5) and on the share of FX debt out of total debt issuance (Columns 6 to 10), depending on pre-policy exposure to FX-debt. Debt $Type_{f,yq}$ is a dummy with value 1 if a company issues peso-debt and value 0 if it issues: any FX-debt (columns 1, 2 and 4), relationship FX-debt (column 3) or transactional FX-debt (column 5). $Post_{yq}$ is a dummy with value 1 from 2007:Q2 to 2008:Q2 and 0 from 2006:Q1 to 2007:Q1. $Exposure_{f,pre}$ is the average FX-inflow (rescaled by total assets) over the period from 2005:Q1 to 2007:Q1. For easing comparisons between results in columns 1 and 2 and 6 and 7, we de-mean such variable. Macro Controls include lagged values of: GDP yearly growth rate; yearly inflation rate; log of VIX and of exchange rate and the lagged monetary policy rate. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1}$. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$ and $BankFX\text{-}Funds_{b,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ dummy. The sign "-" denotes cases where a variable (or a group of variables or of fixed effects) is spanned out by other controls and/or fixed effects. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Table 5: Substitution with Peso Debt from Local Banks

Panel A: Loan Volume

	(1)	(2)	(3)	(4)	(5)	(6)
			PesoLoan$_{f,b,yq}$			
Post$_{yq}$	0.259***	-0.087	-0.104	-	-	-
	(0.019)	(0.095)	(0.083)			
Post$_{yq}$*Both$_{f,pre}$	-0.093***	-0.077**	-0.062*	-0.064*	-0.069**	
	(0.035)	(0.038)	(0.035)	(0.035)	(0.035)	
Post$_{yq}$*Transactional$_{f,pre}$	-0.178***	-0.114**	-0.140***	-0.118***	-0.133***	
	(0.048)	(0.045)	(0.040)	(0.040)	(0.041)	
Post$_{yq}$*Exposure-T$_{f,pre}$						-2.007*
						(1.134)
Post$_{yq}$*Exposure-R$_{f,pre}$						3.793***
						(1.199)
N	102035	102035	102035	102035	102035	102035
R^2	0.044	0.258	0.789	0.791	0.802	0.802
Companies	All	All	All	All	All	All
Firm Controls*Post	NO	YES	YES	YES	YES	YES
Firm*Bank FE	NO	NO	YES	YES	YES	YES
Bank*Year-quarter FE	NO	NO	NO	YES	YES	YES
Industry*Year-quarter FE	NO	NO	NO	NO	YES	YES
Loan Controls*Post	NO	NO	NO	NO	YES	YES

This table shows the effect of capital controls on the quantity of commercial (peso) credit granted from Colombian banks. The dependent variable is defined as the logarithm of the loan in pesos granted from bank b to firm f in year-quarter yq. In columns (1) to (5), the baseline category is given by companies borrowing in FX before 2007:Q2 from relationship banks only. Transactional$_{f,pre}$ is a dummy with value 1 if a company borrowed in FX only from transactional banks before 2007:Q2 and 0 otherwise. Both$_{f,pre}$ refers to companies resorting to both relationship and transactional banks for peso credit before 2007:Q2. Post$_{yq}$ is a dummy with value 1 from 2007:Q2 to 2008:Q2 and 0 from 2006:Q1 to 2007:Q1. In column (6), Exposure-T$_{f,pre}$ and Exposure-R$_{f,pre}$ are the average of FX-T Inflows$_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R Inflows$_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. Firm Controls include ROA$_{f,y-1}$, Size$_{f,y-1}$, Imports$_{f,yq-1}$, Exports$_{f,yq-1,}$ Default$_{f,yq}$ and Relationships$_{f,yq.}$ Loan Controls include: Maturity$_{f,b,yq}$ and Collateral$_{f,b,yq}$. Both Firm and Loan controls are fully interacted with the Post$_{yq}$ dummy. The sign "-" denotes cases where a variable (or a group of variables or of fixed effects) is spanned out by other controls and/or fixed effects. Standard errors in parentheses are clustered at the firm level. *** p<0.01, ** p<0.05, *p<0.1.

Panel B: Loan Price

	(1)	(2)	(3)	(4)	(5)	(6)
			InterestRate$_{f,b,yq}$			
$Post_{yq}$	2.943***	6.683***	6.564***	-	-	-
	(0.073)	(0.373)	(0.373)			
$Post_{yq}$*$Both_{f,pre}$	-0.559***	0.365***	0.377***	0.327***	0.305**	
	(0.121)	(0.133)	(0.134)	(0.124)	(0.128)	
$Post_{yq}$*$Transactional_{f,pre}$	0.272	0.429**	0.358*	0.707***	0.786***	
	(0.190)	(0.192)	(0.186)	(0.170)	(0.170)	
$Post_{yq}$*Exposure-$T_{f,pre}$						9.103**
						(3.552)
$Post_{yq}$*Exposure-$R_{f,pre}$						-30.710***
						(4.135)
N	102035	102035	102035	102035	102035	102035
R^2	0.052	0.094	0.536	0.609	0.624	0.625
Companies	All	All	All	All	All	All
Firm Controls*Post	NO	YES	YES	YES	YES	YES
Firm*Bank FE	NO	NO	YES	YES	YES	YES
Bank*Year-quarter FE	NO	NO	NO	YES	YES	YES
Industry*Year-quarter FE	NO	NO	NO	NO	YES	YES
Loan Controls*Post	NO	NO	NO	NO	YES	YES

This table shows the effect of capital controls on the price of commercial (peso) credit granted from Colombian banks. The dependent variable is the loan-level interest rate (in %). In columns (1) to (5), the baseline category is given by companies borrowing in FX before 2007:Q2 from relationship banks only. $Transactional_{f,pre}$ is a dummy with value 1 if a company borrowed in FX only from transactional banks before 2007:Q2 and 0 otherwise. $Both_{f,pre}$ refers to companies resorting to both relationship and transactional banks for peso credit before 2007:Q2. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 to 2008:Q2 and 0 from 2006:Q1 to 2007:Q1. In column (6), Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1,}$ $Default_{f,yq}$ and $Relationships_{f,yq.}$ Loan Controls include: $Maturity_{f,b,yq}$ and $Collateral_{f,b,yq}$. Both Firm and Loan controls are fully interacted with the $Post_{yq}$ dummy. The sign "-" denotes cases where a variable (or a group of variables or of fixed effects) is spanned out by other controls and/or fixed effects. Standard errors in parentheses are clustered at the firm level. *** p<0.01, ** p<0.05, *p<0.1.

Table 6: Substitution with Peso Debt from Local Banks: Role of Ex-Ante FX Lending Relationships

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$PesoLoan_{f,b,yq}$				$InterestRate_{f,b,yq}$			
	FX-Lender		FX-Lender		FX-Lender		FX-Lender	
	No	Yes	No	Yes	No	Yes	No	Yes
$Post_{yq}$*$Both_{f,pre}$	-0.041	-0.101*			0.206	0.362*		
	(0.039)	(0.055)			(0.150)	(0.216)		
$Post_{yq}$*$Transactional_{f,pre}$	-0.066	-0.238***			0.360**	0.851***		
	(0.043)	(0.051)			(0.181)	(0.221)		
$Post_{yq}$*Exposure-$T_{f,pre}$			-2.802**	-0.110			11.316***	9.586**
			(1.348)	(1.133)			(4.247)	(4.415)
$Post_{yq}$*Exposure-$R_{f,pre}$			-0.697	4.432***			-22.554***	-39.828***
			(1.794)	(1.482)			(5.367)	(5.558)
N	64443	48895	64443	48895	64443	48895	64443	48895
R^2	0.841	0.779	0.841	0.779	0.667	0.614	0.668	0.615
Firm Controls*Post	YES	YES	YES	YES	YES	YES	YES	YES
Firm*Bank FE	YES	YES	YES	YES	YES	YES	YES	YES
Bank* Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry*Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Loan Controls*Post	YES	YES	YES	YES	YES	YES	YES	YES

This table shows the importance of FX lending relationships with local banks for substituting FX-debt with peso-debt during capital controls. The samples vary across columns. We always keep all companies borrowing in FX exclusively from foreign banks. For the other companies: in even columns (FX-Lender: "Yes") we retain peso-credit relationships with Colombian banks that provide FX-debt between 2005:Q1-2007:Q1; in odd columns (FX-Lender: "No"), with Colombian banks that do not provide FX-debt between 2005:Q1-2007:Q1. In columns (1) to (4), the dependent variable is defined as the logarithm of the loan in pesos granted from bank b to firm f in year-quarter yq. In columns (5) to (8), the dependent variable is the interest rate (in pp) applied over the same loans. In columns (1)-(2) and (5)-(6), the baseline category is companies borrowing in FX before 2007:Q2 from relationship banks only. $Transactional_{f,pre}$ is a dummy with value 1 if a company borrowed in FX only from transactional banks before 2007:Q2 and 0 otherwise. $Both_{f,pre}$ refers to companies resorting to both relationship and transactional banks for peso credit before 2007:Q2. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 to 2008:Q2 and 0 from 2006:Q1 to 2007:Q1. In columns (3)-(4) and (7)-(8), Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1,}$ $Default_{f,yq}$ and $Relationships_{f,yq.}$ Loan Controls include: $Maturity_{f,b,yq}$ and $Collateral_{f,b,yq}$. Both Firm and Loan controls are fully interacted with the $Post_{yq}$ dummy. The sign "-" denotes cases where a variable (or a group of variables or of fixed effects) is spanned out by other controls and/or fixed effects. Standard errors in parentheses are clustered at the firm level. *** p<0.01, ** p<0.05, *p<0.1.

Table 7: The Impact of Capital Controls on Total Liabilities

Panel A: Baseline Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					Ln(Total Liabilities)$_{f,y}$			
$Post_{yq}$	0.148	0.148***	-0.283	-	-	-	-	-
	(0.150)	(0.013)	(0.656)					
$Post_{yq}$*$Both_{f,pre}$	-0.031	-0.031*	0.003	0.003	0.005		-0.001	
	(0.227)	(0.016)	(0.017)	(0.017)	(0.016)		(0.020)	
$Post_{yq}$*$Trans_{f,pre}$	-0.073	-0.073***	-0.052**	-0.052**	-0.047**		-0.043*	
	(0.152)	(0.021)	(0.020)	(0.020)	(0.018)		(0.023)	
$Post_{yq}$*Exposure-$R_{f,pre}$						0.692		0.254
						(0.496)		(0.660)
$Post_{yq}$*Exposure-$T_{f,pre}$						-0.768*		-1.418*
						(0.428)		(0.851)
N	5632	5632	5632	5632	5632	5632	5616	5616
R^2	0.1705	0.9873	0.9878	0.9878	0.9881	0.9881	0.9767	0.9767
Firm FE	NO	YES	YES	YES	YES	YES	YES	YES
Firm Controls*Post	NO	NO	YES	YES	YES	YES	YES	YES
Bank Controls*Post	NO	NO	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	NO	YES	-	-	-	-
Industry*Year FE	NO	NO	NO	NO	YES	YES	YES	YES
Terminal year	2007	2007	2007	2007	2007	2007	2008	2008

This table shows the effect of capital controls on total liabilities, depending on pre-policy firms FX relationship or transactional borrowing and on exposure to FX-debt. In columns (1)-(6), observations are from 2006 and 2007. In columns (7)-(8), the sample includes observations for 2006 and 2008 (excluding 2007). The dependent variable is the logarithm of total liabilities of firm f in year y. $Transactional_{f,pre}$ is a dummy with value 1 if a company borrowed in FX only from transactional banks before 2007:Q2 and 0 otherwise. $Both_{f,pre}$ refers to companies resorting to both relationship and transactional banks for FX-credit before 2007:Q2. Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 1 in 2007 and 2008 and 0 in 2006. Firm Controls include $ROA_{f,y-1}$ (excluded in columns 2 and 4 of Pabel B), $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1.}$ $Default_{f,yq}$ and $Relationships_{f,yq.}$ Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls fully interacted with the $Post_{yq}$ dummy. The sign "-" denotes cases where a variable (or a group of variables or of fixed effects) is spanned out by other controls and/or fixed effects.Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel B: Heterogeneous Effects depending on Firm's Sector and Profitability

	(1)	(2)	(3)	(4)	(5)	(6)
			Log(Total Liabilities)$_{f,y}$			
$Post_{yq}$*$Both_{f,pre}$	0.024		-0.007		0.033	
	(0.023)		(0.021)		(0.036)	
$Post_{yq}$*$Transactional_{f,pre}$	-0.031		-0.080***		-0.081**	
	(0.023)		(0.025)		(0.037)	
$Post_{yq}$*$Both_{f,pre}$*$Tradeables_s$	-0.039					
	(0.033)					
$Post_{yq}$*$Transactional_{f,pre}$*$Tradeables_s$	-0.038					
	(0.037)					
$Post_{yq}$*Exposure-$T_{f,pre}$		-1.527**		-1.167**		-1.235**
		(0.653)		(0.528)		(0.605)
$Post_{yq}$*Exposure-$T_{f,pre}$*$Tradeables_s$		1.019				
		(0.972)				
$Post_{yq}$*$Both_{f,pre}$*$HighRoa_f$			0.012			
			(0.028)			
$Post_{yq}$*$Trans_{f,pre}$*$HighRoa_f$			0.053			
			(0.036)			
$Post_{yq}$*Exposure-$T_{f,pre}$* $HighRoa_f$				0.802		
				(0.824)		
$Post_{yq}$*$Both_{f,pre}$*$HighLaborProd_f$					-0.028	
					(0.053)	
$Post_{yq}$*$Trans_{f,pre}$*$HighLaborProd_f$					0.034	
					(0.057)	
$Post_{yq}$*Exposure-$T_{f,pre}$*$HighLaborProd_f$						1.530
						(0.951)
N	5632	5632	5632	5632	2002	2002
R^2	0.9881	0.9879	0.9880	0.9879	0.9879	0.9879
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
(Firm & Bank Controls)*Post	Yes	Yes	Yes	Yes	Yes	Yes
Industry*Time FE	Yes	Yes	Yes	Yes	Yes	Yes

This table shows heterogeneous effect (across firms and sectors) of capital controls on total liabilities. The dependent variable is the logarithm of total liabilities of firm f in year y. $Transactional_{f,pre}$ is a dummy with value 1 if a company borrowed in FX only from transactional banks before 2007:Q2 and 0 otherwise. $Both_{f,pre}$ refers to companies resorting to both relationship and transactional banks for FX-credit before 2007:Q2. Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 1 in 2007 and 2008 and 0 in 2006. Firm Controls include $ROA_{f,y-1}$ (excluded in columns 2 and 4 of Pabel B), $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1}$. $Default_{f,yq}$ and $Relationships_{f,yq}$.. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. $Tradables_s$ is a dummy with value 1 if firm f operates in a tradable sector. $HighRoa_f$ is a dummy with value 1 for firms with above-median ROA in the pre-policy period. $HighLaborProd_f$ is a dummy for firms with above-median profits/employees ratio at the end of 2008. Both Bank and Firm controls fully interacted with the $Post_{yq}$ dummy. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Table 8: Real effects – Capital Controls and Trade during the Boom and the Bust

Panel A: Baseline results for exports and imports

	(1) $Exports_{f,yq}$	(2) $Imports_{f,yq}$	(3) $Exports_{f,yq}$	(4) $Imports_{f,yq}$
$Crisis_{yq}$*Exposure-$T_{f,pre}$	5.2213***	-1.7723	2.3819*	-0.6226
	(1.814)	(1.722)	(1.231)	(1.094)
$Crisis_{yq}$*Exposure-$R_{f,pre}$	-1.1536	2.7480	-2.1527	1.8147
	(3.439)	(2.032)	(2.397)	(1.552)
$Post_{yq}$ *Exposure-$T_{f,pre}$	-1.0216	-3.1762**	1.5957	-3.1905***
	(2.254)	(1.255)	(1.508)	(0.994)
$Post_{yq}$ *Exposure-$R_{f,pre}$	-1.4590	0.9796	-1.2024	0.5269
	(3.349)	(1.634)	(2.327)	(1.311)
N	15269	25294	25391	37484
R^2	0.8476	0.8396	0.8747	0.8534
Firm Controls*[Post ; Crisis]	YES	YES	YES	YES
Bank Controls*[Post ; Crisis]	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry*Year-quarter FE	YES	YES	YES	YES
Companies Active in Both	Excluded	Excluded	Included	Included

This table shows the baseline impact of capital controls on firm-level trade. We report how exposure to relationship and transactional banks affect exports and imports, during capital controls (boom) and during the GFC (bust). The dependent variable is either the logarithm of (1 + exports), $Exports_{f,yq}$, or of (1+imports), $Imports_{f,yq}$ of firm f in year-quarter yq. Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 0 (1) from 2006:Q1 to 2007:Q1 (2007:Q2 to 2009:Q4). $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 before. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel B: Mechanism – Growth of total liabilities

	(1) $Exports_{f,yq}$	(2) $Imports_{f,yq}$	(3) $Exports_{f,yq}$	(4) $Imports_{f,yq}$
$Crisis_{yq}$*(-$\Delta_{1y}Liabilities_{f,2007}^{predicted}$)	4.8597***	-1.9240	2.0079*	-0.7038
	(1.716)	(1.582)	(1.127)	(0.985)
$Crisis_{yq}$*Exposure-$R_{f,pre}$	-1.0676	2.8161	-2.2189	1.8829
	(3.454)	(2.025)	(2.399)	(1.551)
$Crisis_{yq}$*(-$\Delta_{1y}Liabilities_{f,2007}^{residual}$)	0.1591	0.0660	0.0524	0.0748
	(0.123)	(0.094)	(0.084)	(0.075)
$Post_{yq}$*(-$\Delta_{1y}Liabilities_{f,2007}^{predicted}$)	-1.7336	-2.9384**	1.0659	-2.7399***
	(1.931)	(1.171)	(1.297)	(0.881)
$Post_{yq}$*Exposure-$T_{f,pre}$	-1.6858	0.7582	-1.0353	0.5738
	(3.359)	(1.594)	(2.311)	(1.275)
$Post_{yq}$*(-$\Delta_{1y}Liabilities_{f,2007}^{residual}$)	-0.3648**	-0.3850***	-0.3002**	-0.4039***
	(0.153)	(0.093)	(0.127)	(0.076)
N	14998	24868	25091	37016
R^2	0.8481	0.8401	0.8751	0.8538
Firm Controls*[Post ; Crisis]	YES	YES	YES	YES
Bank Controls*[Post ; Crisis]	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry*Year-Quarter FE	YES	YES	YES	YES
Companies active in Both	Excluded	Excluded	Included	Included

This table shows the impact of debt-reduction triggered by capital controls on firm-level trade (as opposed to residual, endogenous debt reduction). The dependent variable is either the logarithm of (1 + exports), $Exports_{f,yq}$, or of (1+imports), $Imports_{f,yq}$ of firm f in year-quarter yq. Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 0 (1) from 2006:Q1 to 2007:Q1 (2007:Q2 to 2009:Q4). $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 before. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. We replace Exposure-$T_{f,pre}$ with -$\Delta_{1y}Liabilities_{f,2007}^{predicted}$, the yearly reduction in total liabilities that it predicts in 2007 (in a cross-sectional regression with industry fixed effects – coefficient is equal to 1.1397, significant at 1% level). We also include the residual heterogeneity, denoted by -$\Delta_{1y}Liabilities_{f,2007}^{residual}$. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel C: Exports – Companies sorted according to proxies of financing constraints

	(1)	(2)	(3)	(4)	(5)	(6)
	Dep. Variable: $Exports_{f,yq}$					
		Loan Interest Rate			% Short-Term Debt (≤1y)	
	All	Low	High	All	Low	High
$Crisis_{yq}$*Exposure-$T_{f,pre}$	5.1960***	3.2374	7.5520***	4.9244***	0.2981	9.5632***
	(1.882)	(2.384)	(2.495)	(1.852)	(3.074)	(3.457)
$Crisis_{yq}$*Exposure-$R_{f,pre}$	-1.9590	1.1328	-6.1956	-1.0751	1.2764	-0.9220
	(3.659)	(4.816)	(4.691)	(3.551)	(6.815)	(4.150)
$Post_{yq}$ *Exposure-$T_{f,pre}$	-0.8325	1.8080	-5.1024	-1.0068	-0.2588	0.5760
	(2.319)	(2.468)	(3.401)	(2.300)	(3.701)	(3.375)
$Post_{yq}$ *Exposure-$R_{f,pre}$	0.3068	-0.5093	1.3247	-1.6852	1.7283	-3.9347
	(3.247)	(4.388)	(3.135)	(3.451)	(7.237)	(3.959)
N	14172	7103	7069	14269	7176	7093
R^2	0.8489	0.8743	0.8386	0.8477	0.8552	0.8635
Firm Controls*[Post ; Crisis]	YES	YES	YES	YES	YES	YES
Bank Controls*[Post ; Crisis]	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Industry*Time FE	YES	YES	YES	YES	YES	YES
Companies active in Both	Excluded	Excluded	Excluded	Excluded	Excluded	Excluded

This table shows heterogeneous effects of capital controls on firm-level exports. The dependent variable is the logarithm of (1 + exports), $Exports_{f,yq}$, of firm f in year-quarter yq. Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 0 (1) from 2006:Q1 to 2007:Q1 (2007:Q2 to 2009:Q4). $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 before. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. We sort companies based on proxies of financial constraints, i.e. indicators of high interest rate and percentage of short-term debt (maturity smaller or equal than 1 year). These are weighted average of related variables from the credit registry (over the period 2005:Q1-2007:Q1 and after taking out bank*industry*year-quarter fixed effects), with weights given by the loan share over total bank debt. A company is defined as High (Low) Interest Rate /% Short-Term Debt if its value is above (below) the median in the regression sample. Standard errors in parentheses double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel D: Imports – Companies sorted according to proxies of financing constraints

	(1)	(2)	(3)	(4)	(5)	(6)
	$Imports_{f,yq}$					
		Loan Interest Rate			% Short-Term Debt (≤1y)	
	All	Low	High	All	Low	High
$Crisis_{yq}$*Exposure-$T_{f,pre}$	-0.7940	-0.0600	-2.2971	-1.4203	-1.5812	-0.7398
	(1.614)	(2.119)	(2.281)	(1.709)	(2.218)	(2.728)
$Crisis_{yq}$*Exposure-$R_{f,pre}$	2.8681	4.0890	-0.5642	2.9607	7.1357*	4.1200*
	(2.077)	(2.897)	(2.911)	(2.053)	(4.157)	(2.434)
$Post_{yq}$ *Exposure-$T_{f,pre}$	-3.1068**	-3.9203*	-2.6509*	-3.3384***	-3.9725**	-3.4836**
	(1.256)	(2.170)	(1.488)	(1.256)	(1.985)	(1.770)
$Post_{yq}$ *Exposure-$R_{f,pre}$	1.0180	1.3016	-1.5710	1.0019	-2.4461	2.1644
	(1.676)	(2.024)	(2.901)	(1.655)	(3.848)	(1.984)
N	24063	12017	12046	24022	12119	11903
R^2	0.8389	0.8426	0.8514	0.8366	0.8461	0.8425
Firm Controls*[Post ; Crisis]	YES	YES	YES	YES	YES	YES
Bank Controls*[Post ; Crisis]	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Industry*Time FE	YES	YES	YES	YES	YES	YES
Companies active in Both	Excluded	Excluded	Excluded	Excluded	Excluded	Excluded

This table shows heterogeneous effects of capital controls on firm-level imports. The dependent variable is the logarithm of (1 + imports), $Imports_{f,yq}$, or of (1+imports), of firm f in year-quarter yq. Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 0 (1) from 2006:Q1 to 2007:Q1 (2007:Q2 to 2009:Q4). $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 before. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. We sort companies based on proxies of financial constraints - i.e. indicators of high interest rate and percentage of short-term debt (maturity smaller or equal than 1 year). These are taken as weighted average of related variables from the credit registry (after taking out bank*industry*year-quarter fixed effects) - with weights given by the loan share over total bank debt – over the period 2005:Q1-2007:Q1. A company is defined as High (Low) Interest Rate /% Short-Term Debt if its value is above (below) the median in the regression sample. Standard errors in parentheses double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Table 9: The Impact of Capital Controls on Firm-Level Employment

Panel A: Baseline Results

	(1)	(2)	(3)	(4)
		Log(Employees)$_{f,yq}$		
$Crisis_{yq}$*$Transactional_{f,pre}$	0.0636*			
	(0.03)			
$Crisis_{yq}$*Exposure-$T_{f,pre}$		1.0469*	1.5923**	
		(0.59)	(0.73)	
$Crisis_{yq}$*Exposure-$R_{f,pre}$		0.1266	0.3798	0.0511
		(0.34)	(0.46)	(0.36)
$Crisis_{yq}$*(-$\Delta_{1y}Liabilities_{f,2007}^{predicted}$)				1.4509*
				(0.83)
$Crisis_{yq}$*(-$\Delta_{1y}Liabilities_{f,2007}^{residual}$)				-0.0440
				(0.04)
N	5764	5764	1610	5758
R-squared	0.9019	0.9019	0.9700	0.9018
Firm Controls*Crisis	YES	YES	YES	YES
Bank Controls*Crisis	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry*Time FE	YES	YES	YES	YES
Period	Q2:2008-Q4:2009	Q2:2008-Q4:2009	Pre/Post Crisis	Q2:2008-Q4:2009

This table shows the baseline impact of capital controls on firm-level employment. The dependent variable, Log(Employees)f,yq, is the log of the total number of employees. Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 before. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1,}$ $Exports_{f,yq-1}$. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Crisis_{yq}$ dummy. -$\Delta_{1y}Liabilities_{f,2007}^{predicted}$, the yearly reduction in total liabilities that Exposure-$T_{f,pre}$ predicts in 2007 (in a cross-sectional regression with industry fixed effects – coefficient is equal to 1.1397, significance at 1% level). We also include the residual heterogeneity, denoted by -$\Delta_{1y}Liabilities_{f,2007}^{residual}$. Standard errors in parentheses double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1, ^p<0.101.

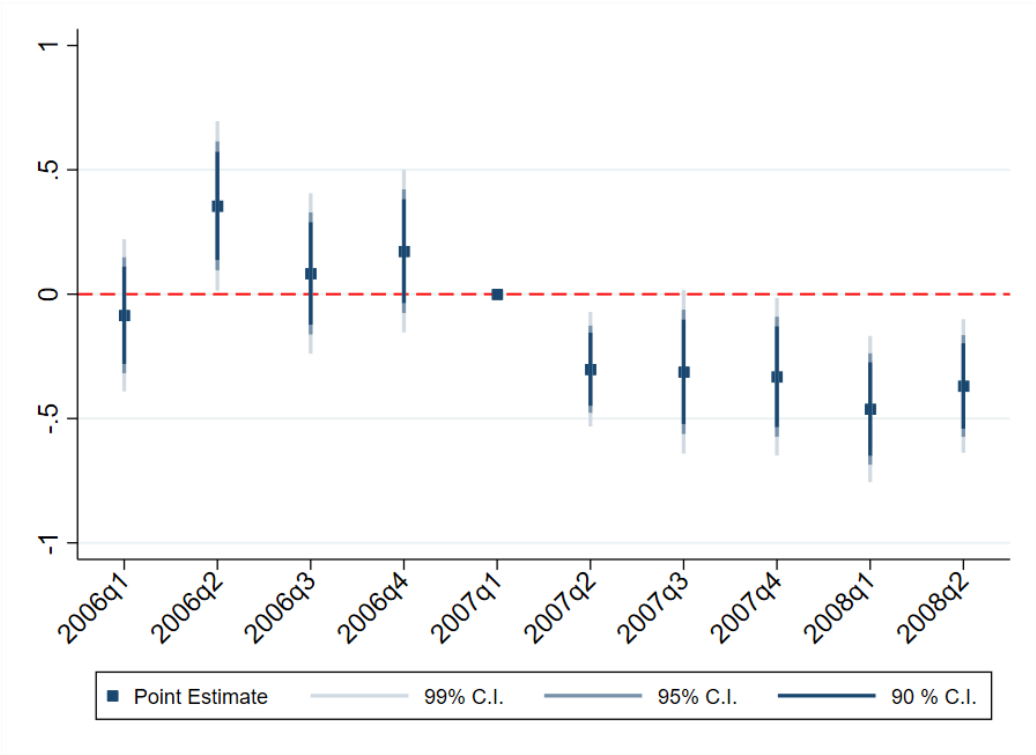
Panel B: Employment- Companies sorted according to proxies of financing constraints

	(1)	(2)	(3)	(4)
	Log(Employees)$_{f,yq}$			
	Loan Interest Rate		% Short-Term Debt (≤1y)	
	Low	High	Low	High
Crisis$_{yq}$*Exposure-T$_{f,pre}$	0.6811	1.1273^	0.8951	1.1219
	(1.21)	(0.70)	(0.93)	(0.75)
N	2848	2852	2845	2861
R-sq	0.8914	0.9070	0.9102	0.8878
Firm*Crisis Controls	YES	YES	YES	YES
Bank*Crisis Controls	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry*Time FE	YES	YES	YES	YES

This table shows heterogeneous effects of capital controls on firm-level employment. The dependent variable, Log(Employees)$_{f,yq}$, is the log of the total number of employees. Exposure-T$_{f,pre}$ is the average of FX-T Inflows$_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) in the period from 2005:Q1 to 2007:Q1. Crisis$_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 before. Firm Controls include Exposure-R$_{f,pre}$, ROA$_{f,y-1}$, Size$_{f,y-1}$, Imports$_{f,yq-1,}$ Exports$_{f,yq-1}$. Bank Controls include: BankCET1$_{f,yq-1}$; BankROA$_{f,yq-1}$; BankSIZE$_{f,yq-1}$; BankNPL$_{f,yq-1}$; BankSaving$_{f,yq-1}$; BankChecking$_{f,yq-1}$; BankFX-Funds$_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the Crisis$_{yq}$ dummy. We sort companies based on proxies of financial constraints - i.e. indicators of high interest rate , collateral requirements and percentage of short-term debt (maturity smaller or equal than 1 year). These are taken as weighted average of related variables from the credit registry (after taking out bank*industry*year-quarter fixed effects) - with weights given by the loan share over total bank debt – over the period 2005:Q1-2007:Q1. A company is defined as High (Low) Interest Rate /% Short-Term Debt if its value is above (below) the median in the regression sample. Standard errors in parentheses double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1, ^p<0.101.

Internet Appendix

Figure A1: Time-Varying Effect of Ex-ante FX-Exposure on FX-Debt Inflows

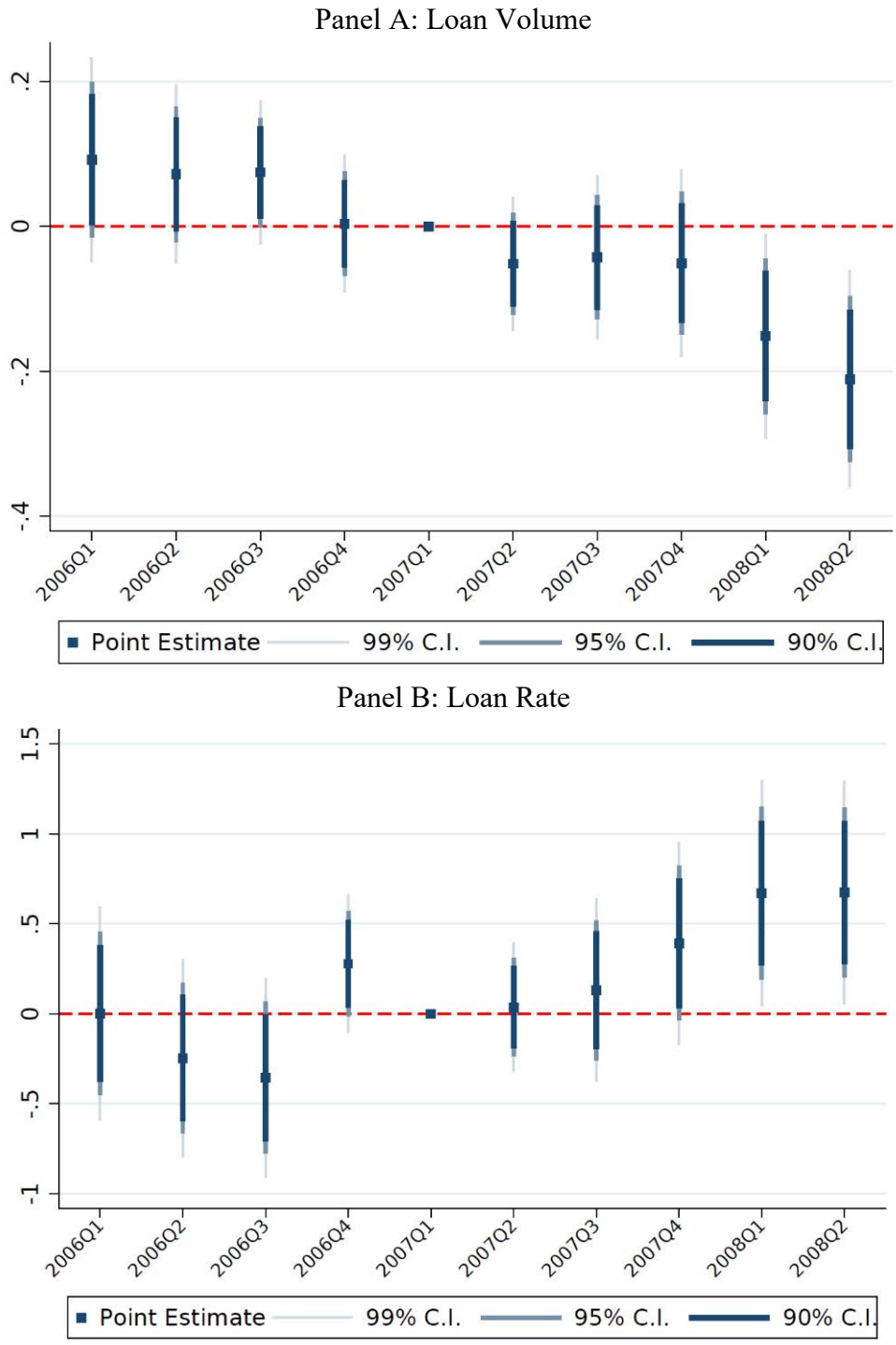


This figure shows the coefficients β_{yq} resulting from the estimation of the following regression:

$$\text{FX-Inflows}_{f,yq} = \sum_{yq \neq 2007Q1} (\beta_{yq} * \text{Exposure}_{f,pre} + \gamma_{yq} * \text{Firm}_{f,yq-1}) + \delta_{i,yq} + \delta_f + e_{f,yq}$$

The dependent variable is given by FX debt inflows (rescaled by total assets). $\text{Exposure}_{f,pre}$ is the average FX debt inflow (rescaled by total assets) over the period from 2005:Q1 to 2007:Q1. $\text{Firm}_{f,yq-1}$ include: firm-level controls, i.e. $\text{ROA}_{f,y-1}$, $\text{Size}_{f,y-1}$, $\text{Imports}_{f,yq-1}$, $\text{Exports}_{f,yq-1}$; bank controls, obtained as the firm-level weighted average of different lenders characteristics, including $\text{BankCET1}_{f,yq-1}$; $\text{BankROA}_{f,yq-1}$; $\text{BankSIZE}_{f,yq-1}$; $\text{BankNPL}_{f,yq-1}$; $\text{BankSaving}_{f,yq-1}$; $\text{BankChecking}_{f,yq-1}$ and $\text{BankFX-Funds}_{b,yq-1}$. $\delta_{i,yq}$ denotes interacted industry and year-quarter fixed effects. δ_f is a vector of firm fixed effects. In the legend, C.I. stands for confidence interval. $e_{f,yq}$ is an error term, double-clustered at the firm and industry*year-quarter level.

Figure A2: Time-Varying Effect of Transactional-vs-Relationship FX-debt on Peso-Credit



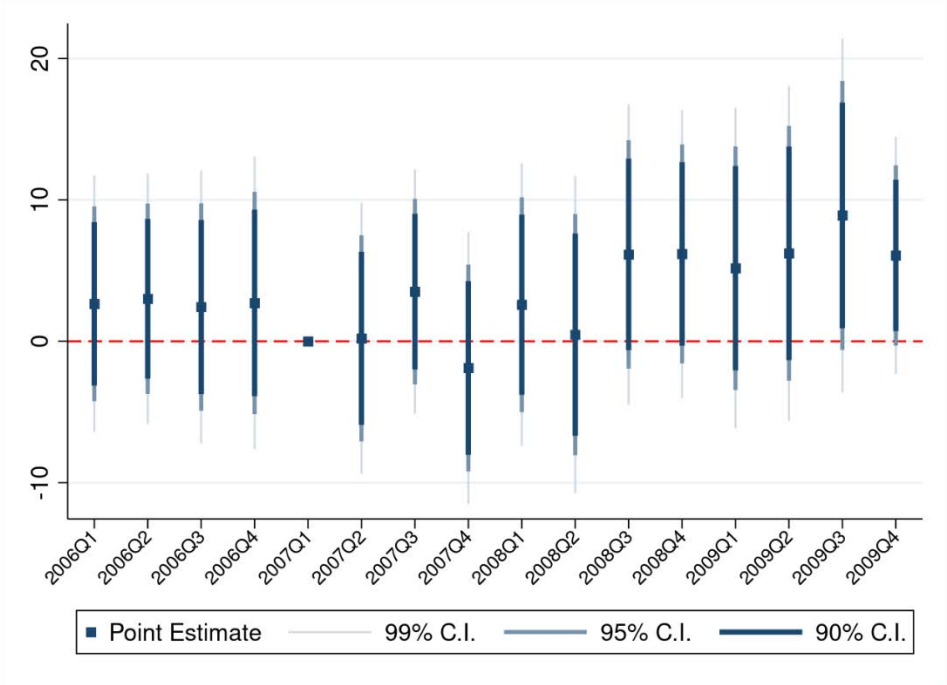
This figure shows the coefficients $\beta_{2,yq}$ resulting from the estimation of the following regression:

$$Y_{f,b,yq}=\sum_{yq\neq 2007Q1}(\beta_{1,yq}*Both_{f,pre}+\beta_{2,yq}*Transactional_{f,pre}+\theta_{yq}*X_{f,b,yq-1})+\delta_{b,yq}+\delta_{f,b}+\delta_{i,yq}+e_{f,b,yq}$$

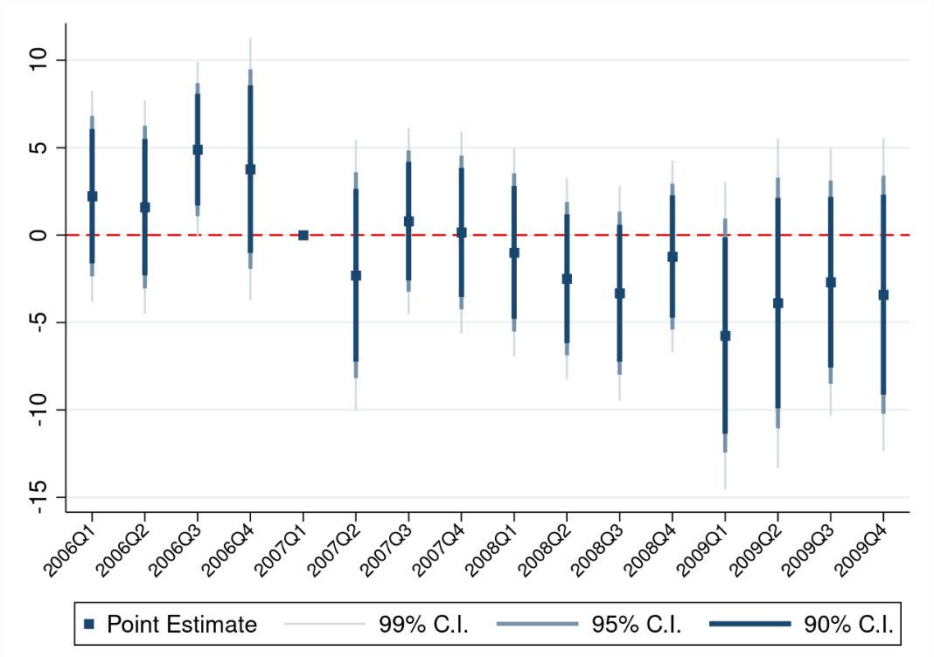
The dependent variable is given in Panel A by the log of credit provided by bank b to firm in period yq and in panel B by the interest rate applied over such a loan. $Transactional_{f,pre}$ is a dummy with value 1 if a company borrowed in FX only from transactional banks before 2007:Q2 and 0 otherwise. $Both_{f,pre}$ refers to companies resorting to both relationship and transactional banks for FX-debt before 2007:Q2. Controls include firm controls ($ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1,}$ $Default_{f,yq}$ and $Relationships_{f,yq}$) as well as loan controls ($Maturity_{f,b,yq}$ and $Collateral_{f,b,yq.}$). In the legend, C.I. stands for confidence interval. Standard errors in parentheses are clustered at the firm level. *** p<0.01, ** p<0.05, *p<0.1.

Figure A3: Time-Varying Effect of Ex-ante Transactional FX-Exposure on Firm-level Trade

Panel A: Exports



Panel B: Imports



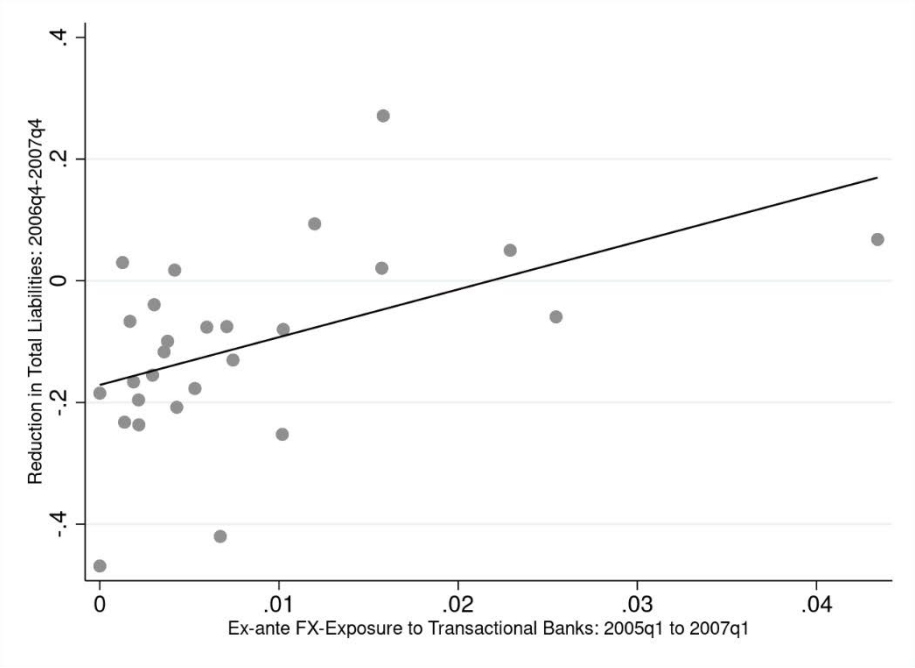
This figure shows the coefficients β_{yq} resulting from the estimation of the following regression:

$$Y_{f,yq} = \sum_{yq \neq 2007Q1} (\beta_{yq} * \text{Exposure-T}_{f,pre} + \gamma_{yq} * \text{Firm}_{f,yq-1}) + \delta_{i,yq} + \delta_f + e_{f,yq}$$

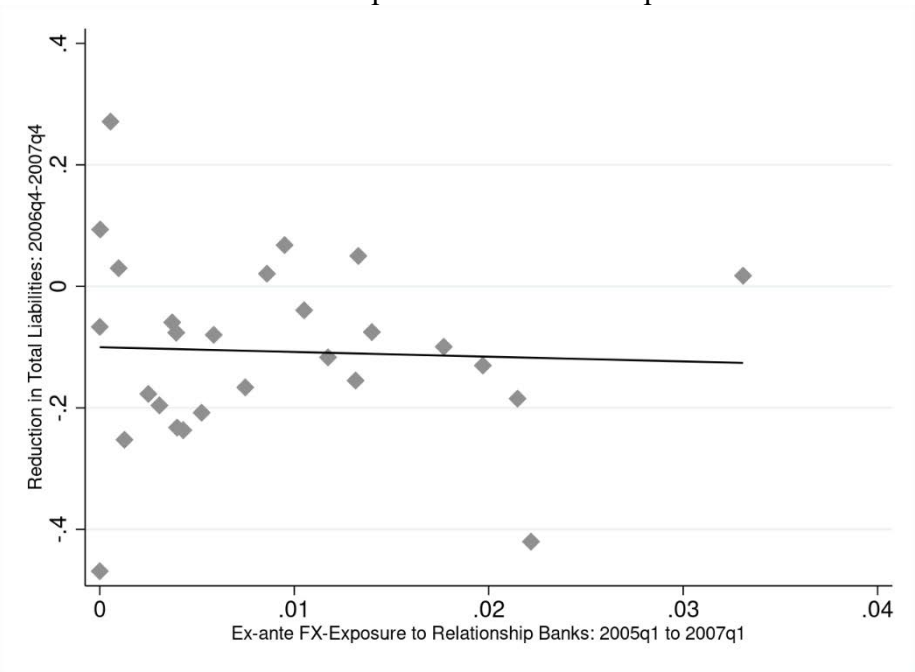
The dependent variable is given by the log of (1+Exports) in Panel A and the log of (1+Imports) in Panel B. Exposure-$T_{f,pre}$ is the average FX debt inflow from transactional lenders (rescaled by total assets) over the period from 2005:Q1 to 2007:Q1. $Firm_{f,yq-1}$ include: firm-level controls, i.e. $ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1}$ (excluded in Panel B), , $Imports_{f,yq-1}$ (excluded in Panel A), Exposure-$R_{f,pre}$; bank controls, obtained as the firm-level weighted average of different lenders characteristics, including $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$ and $BankFX\text{-}Funds_{b,yq-1}$. $\delta_{i,yq}$ denotes interacted industry and year-quarter fixed effects. δ_f is a vector of firm fixed effects. In the legend, C.I. stands for confidence interval. $e_{f,yq}$ is an error term, double-clustered at the firm and industry*year-quarter level.

Figure A4: Ex-ante FX-Exposures and Reduction in Total Liabilities : Industry-level

Panel A: FX-Exposure to Transactional Banks



Panel B: FX-Exposure to Relationship Banks



This figure shows the relation between ex-ante FX-debt exposure and reduction in total liabilities over the period 2006q4-2007q4 at the (ISIC 3-digit) industry-level. Panel A considers ex-ante FX-debt exposure through Transactional lenders. Panel B considers ex-ante FX-debt exposure through Relationship lenders.

Table A1: Other Summary Statistics

Panel A: Macro and Industrial Level Variables (2006:Q1-2007:Q1)

VARIABLES	N	Mean	P25	P50	P75	SD
Firm-level variables (2006:Q1-2007:Q1)						
$ExposureLiab_{f,pre}$	14,125	0.0244	0.000517	0.00702	0.0319	0.0408
$Exposure_{f,2007:Q1}$	14,125	0.0124	0	0	0.00534	0.0341
$AvgLogExposure_{f,pre}$	14,125	1.827	0.310	0.970	2.804	2.008
$Exposure_{f,2005}$	14,125	0.0127	0	0.00113	0.01419	0.0208
Exposure-T-$Liab_{f,pre}$	5,751	0.0253	0.00237	0.00937	0.0302	0.0423
Exposure-$T_{f,2007:Q1}$	5,751	0.0124	0	0	0.00364	0.0379
Exposure-T-$Log_{f,pre}$	5,751	1.894	0.568	1.171	2.581	1.825
Exposure-$T_{f,2005}$	5,751	0.0162	0	0.00402	0.0160	0.0352
Exposure-R-$Liab_{f,pre}$	12,176	0.0164	0.000240	0.00315	0.0190	0.0288
Exposure-$R_{f,2007:Q1}$	12,176	0.00836	0	0	0.00120	0.0234
Exposure-R-$Log_{f,pre}$	12,176	1.428	0.204	0.675	2.145	1.655
Exposure-$R_{f,2005}$	12,176	0.00714	0	0.00017	0.00782	0.0142
$-\Delta Liabilities_{f,2007}^{predicted}$	5,433	0.00735	0.0157	0.00554	0.01638	.02843
$-\Delta Liabilities_{f,2007}^{residual}$	11,597	0.00475	-0.1662	0.01735	0.18658	0.34617
Macroeconomic Variables (2006:Q1-2008:Q2)						
Δi_{yq-1}	10	0.0105	-0.00267	0.0168	0.0198	0.0133
$\Delta \pi_{yq-1}$	10	0.0630	0.0572	0.0619	0.0763	0.0138
ΔGDP_{yq-1}	10	0.0504	0.0448	0.0494	0.0577	0.00766
ΔVIX_{yq-1}	10	0.184	-0.0432	0.149	0.407	0.289
Δe_{yq-1}	10	-0.0624	-0.1175	-0.0469	-0.0077	0.0903

(Continued below)

Industry-Level Variables (2006:Q1-2007:Q1)						
$Employment_{i,yq}$	135	4.547	4.486	4.611	4.732	0.380
Exposure-$T_{i,pre}$	135	0.00817	0.00216	0.00430	0.0102	0.00950
Exposure-$R_{i,pre}$	135	0.00881	0.00250	0.00586	0.0133	0.00822
Exposure-T-$Liab_{i,pre}$	135	0.0165	0.00339	0.00968	0.0259	0.0166
Exposure-R-$Liab_{i,pre}$	135	0.0208	0.00548	0.0145	0.0269	0.0210
Exposure-T-$Log_{i,pre}$	135	1.607	0.594	1.437	2.433	1.244
Exposure-R-$Log_{i,pre}$	135	1.956	0.786	1.721	3.045	1.321
$Size_{i,yq-1}$	135	8.764	8.059	8.540	9.036	1.017
$ROA_{i,yq-1}$	135	0.0329	0.0187	0.0345	0.0555	0.0275
$Imports_{i,yq-1}$	135	6.543	5.569	6.752	7.892	1.799
$Exports_{i,yq-1}$	135	5.630	4.174	6.274	7.243	2.221

Firm-level Variables. $ExposureLiab_{f,pre}$ is the average of the ratio between FX-debt flows and total liabilities over the period 2005:Q1-2007:Q1. Exposure $_{f,2007:Q1}$ is the ratio between FX-debt flows and total assets as of 2007:Q1. $AvgLogExposure_{f,pre}$ is the average of the logarithm of (1 + FX-debt flow) during the period 2005:Q1-2007:Q1. $Exposure_{f,2005}$ is the average of the ratio between FX-debt flows and total assets over the period 2005:Q1-2005:Q4. Exposure-T-$Liab_{i,pre}$ is the average of the ratio between FX-debt flows from transactional banks and total liabilities over the period 2005:Q1-2007:Q1. Exposure-$T_{f,2007:Q1}$ is the ratio between FX-debt flows from transactional banks and total assets as of 2007:Q1. Exposure-T-$Log_{f,pre}$ is the average of the logarithm of (1 + FX-debt flow) from transactional banks during the period 2005:Q1-2007:Q1). Exposure-R-$Liab_{f,pre}$ is the average of the ratio between FX-debt flows from relationship banks and total liabilities over the period 2005:Q1-2007:Q1. Exposure-$R_{f,2007:Q1}$ is the ratio between FX-debt flows from relationship banks and total assets as of 2007:Q1. Exposure-R-$Log_{f,pre}$ is the average of the logarithm of (1 + FX-debt flow) from relationship banks during the period 2005:Q1-2007:Q1. $-\Delta_{1y}Liabilities_{f,2007}^{predicted}$ is the yearly reduction in total liabilities predicted by Exposure-$T_{f,pre}$ in a cross-sectional regression in 2007 with industry fixed effects. Its summary statistics are computed over companies ex-ante active in foreign FX-debt markets (for all others, the value is constant and equal to 0). The residual heterogeneity in total liabilities from same regression is $-\Delta_{1y}Liabilities_{f,2007}^{residual}$. Macroeconomic Variables (2006:Q1-2008:Q2). Δi_{yq-1} is the lagged yearly growth of the interbank rate. $\Delta\pi_{yq-1}$ is the lagged yearly inflation rate. ΔGDP_{yq-1} is the lagged yearly growth rate of GDP. ΔVIX_{yq-1} is the lagged yearly growth rate of VIX. Δe_{yq-1} is the lagged yearly growth rate of the exchange rate – defined as Colombian pesos per 1US$. Industry-Level Variables (2006:Q1-2007:Q1). $Employment_{i,yq}$ is the logarithm of the employment index. The following exposure measures are retrieved as weighted averages of firm-level correspondent variables. Weights are given by the ratio of a company's total assets to total industrial assets, as of the end of 2006. Exposure-$T_{i,pre}$ is the industry-level weighted average of firm-level FX-exposure to transactional banks, rescaled by total assets. Exposure-$R_{i,pre}$ is the industry-level weighted average of firm-level FX-exposure to relationship banks, rescaled by total assets. Exposure-T-$Liab_{i,pre}$ is the industry-level weighted average of firm-level FX-exposure to transactional banks, rescaled by total liabilities. Exposure-R-$Liab_{i,pre}$ is the industry-level weighted average of firm-level FX-exposure to relationship banks, rescaled by total liabilities. Exposure-T-$Log_{i,pre}$ is the industry-level weighted average of firm-level FX-exposure to transactional banks, defined in logs. Exposure-R-$Log_{i,pre}$ is the industry-level weighted average of firm-level FX-exposure to relationship banks, defined in logs. The remaining variables are defined as weighted averages of firm-level correspondent variables. Weights are given by the time-varying ratio of a company's total assets to total industrial assets. $Size_{i,yq-1}$ is the lagged average of firm log(assets). $ROA_{i,yq-1}$ is the lagged average firm ROA. $Imports_{i,yq-1}$ is the lagged average of log-firm imports. $Exports_{i,yq-1}$ is the lagged average of log-firm exports.

Panel B: Employment data (2008:Q2-2009:Q4)

Variable	(1) Mean	(2) SD	(3) P25	(4) P50	(5) P75
All Firms					
All Employees$_f$	141.5	406.1	24	53	121
Transactional Firms					
All Employees$_f$	138.1	339.9	20	49	121
Relationship Firms					
All Employees$_f$	142.1	416.6	25	54	121

Summary statistics are computed over the period: 2008:Q2-2009:Q4. Employment data is collected for 844 firms based on the procedure proposed by Aristizábal-Ramírez and Posso (2021). Transactional (Relationships) Firms are firms that borrow in FX only from foreign (local) banks.

Table A2: Impact of Capital Controls on FX-Debt Inflows – Robustness Checks

Panel A: Unconditional impact across market segments

	(1)	(2)	(3)
$Post_{yq}$	-0.002**	-0.006*	-0.010***
	(0.001)	(0.003)	(0.003)
N	16741	7622	3925
R^2	0.4044	0.3746	0.3696
Companies	Relationship	Both	Transaction
Quarter FE	YES	YES	YES
Macro Controls	YES	YES	YES
Firm Controls	YES	YES	YES
Bank Controls	YES	YES	YES

This table shows the unconditional impact of capital controls on total FX-debt inflows for firms borrowing in FX only from relationship lenders (column 1), from both relationship and transactional lenders (column 2), and only from transactional lenders (column 3). The dependent variable is FX $Inflows_{f,yq}$. $Post_{yq}$ is a dummy with value 1 (0) from 2007:Q2 to 2008:Q2 (2006:Q1 to 2007:Q1). Macro Controls include lagged values of: GDP yearly growth rate; yearly inflation rate; log of VIX and of exchange rate and of the lagged monetary policy rate. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1.}$ Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX_{f,yq-1}$. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level.*** p<0.01, ** p<0.05, *p<0.1.

Panel B: Conditional impact on different time windows around the policy shock

	(1) 2007:Q1-2007:Q2	(2) 2006:Q4-2007:Q3	(3) 2006:Q3-2007:Q4	(4) 2006:Q2-2008:Q1	(5) 2006:Q1-2008:Q2
$Post_{yq}$*$Exposure_{f,pre}$	-0.3054***	-0.3930***	-0.3984***	-0.5038***	-0.4609***
	(0.089)	(0.070)	(0.065)	(0.059)	(0.051)
N	5636	11327	16980	22650	28288
R^2	0.7071	0.5357	0.4999	0.4850	0.4615
Firm FE	YES	YES	YES	YES	YES
Industry*Year-quarter FE	YES	YES	YES	YES	YES
Firm Controls*Post	YES	YES	YES	YES	YES
Bank Controls*Post	YES	YES	YES	YES	YES

This table shows the impact of capital controls on total FX-debt inflows in different symmetric time-windows around the introduction of capital controls in 2007:Q2, indicated in the columns titles. The dependent variable is FX $Inflows_{f,yq}$. $Post_{yq}$ is a dummy with value 1 (0) from 2007:Q2 to 2008:Q2 (2006:Q1 to 2007:Q1). $Exposure_{f,pre}$ is the average of FX $Inflows_{f,yq}$ in the period from 2005:Q1 to 2007:Q1. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1.}$ Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX_{f,yq-1}$. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level.*** p<0.01, ** p<0.05, *p<0.1.

Panel C: Conditional Impact - Alternative Definitions of Exposure

	(1)	(2)	(3)	(4)
Post*ExposureLiab$_{f,pre}$	-0.2447***			
	(0.027)			
Post*Exposure$_{f,2007:Q1}$		-0.2119***		
		(0.036)		
Post*AvgLogExposure$_{f,pre}$			-0.0040***	
			(0.000)	
Post*Exposure$_{f,2005}$				-.1675***
				(0.031)
N	28288	28288	28288	28288
R^2	0.4590	0.4525	0.4497	0.4464
Firm FE	YES	YES	YES	YES
Industry*Year-quarter FE	YES	YES	YES	YES
Firm Controls*Post	YES	YES	YES	YES
Bank Controls*Post	YES	YES	YES	YES

This table shows the impact of capital controls on total FX-debt inflows, depending on different definitions of ex-ante exposure. The dependent variable is FX Inflows$_{f,yq}$. Post$_{yq}$ is a dummy with value 1 (0) from 2007:Q2 to 2008:Q2 (2006:Q1 to 2007:Q1). ExposureLiab$_{f,pre}$ is the average of the ratio between FX debt inflows and total liabilities from 2005:Q1 to 2007:Q1. Exposure$_{f,2007:Q1}$ is the dependent variable as of 2007:Q1. AvgLogExposure$_{f,pre}$ is the average log FX debt inflows in the period from 2005:Q1 to 2007:Q1. Exposure$_{f,2005}$ is the average FX-debt inflow rescaled by total assets between 2005:Q1 and 2005:Q4. Macro Controls include lagged values of: GDP yearly growth rate; yearly inflation rate; log of VIX and of exchange rate and of the lagged monetary policy rate. Firm Controls include ROA$_{f,y-1}$, Size$_{f,y-1}$, Imports$_{f,yq-1}$, Exports$_{f,yq-1.}$ Bank Controls include: BankCET1$_{f,yq-1}$; BankROA$_{f,yq-1}$; BankSIZE$_{f,yq-1}$; BankNPL$_{f,yq-1}$; BankSaving$_{f,yq-1}$; BankChecking$_{f,yq-1}$; BankFX$_{f,yq-1}$. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level.*** p<0.01, ** p<0.05, *p<0.1.

Table A3: Impact of Capital Controls on FX-Debt Inflows – Oster Test

	(1) $\tilde{R}^2 = 1.3\,\hat{R}^2$	(2) $\tilde{R}^2 = 1$
$\tilde{\delta}$	4.712	1.350

This table shows the robustness of our estimates in Table 3 to the Oster (2017) test for selection into the treatment along unobservables. In column (1), the coefficient of proportionality $\tilde{\delta}$ is estimated under the assumptions that the maximum R-squared is equal to 1.3 $\hat{R}^2$, where $\hat{R}^2$ is the R-squared reported in column (7) of Table 3. In column (2), the maximum R-squared is assumed to be equal to 1. Note: the baseline version of the model only includes the full interaction of the Post$_{yq}$ dummy with Exposure$_{f,pre}$. The test refers to the stability of the coefficient for Post$_{yq}$*Exposure$_{f,pre}$.

Table A4: Summary Statistics (as of end of 2005)

Panel A: Whole Sample of Transactional and Relationship Firms

	(1)	(2)	(3)	(4)	(5)
	Relationship		Transactional		
Variable	Mean	SD	Mean	SD	T-Test
$Size_{f,2005}$	8.305	1.455	9.022	1.519	8.876***
$ROA_{f,\ 2005}$	0.044	0.071	0.022	0.086	5.406***
$Imports_{f,2005}$	2.747	3.072	4.549	3.125	10.627***
$Exports_{f,2005}$	1.376	2.551	2.415	3.159	7.036***
$Relationships_{f,2005}$	3.476	1.866	2.852	1.613	6.234***
$BankCET1_{f,2005}$	0.038	0.008	0.040	0.010	4.282***
$BankSize_{f,2005}$	16.409	0.373	16.273	0.455	6.338***
$ExtFinLev_{f,2005}$	0.465	0.245	0.532	0.251	4.902***
$TotCashandInv_{f,2005}$	0.080	0.095	0.069	0.092	2.192**
$Tang_{f,2005}$	0.178	0.163	0.177	0.180	0.008
$EBIT_{f,\ 2005}$	0.066	0.055	0.066	0.049	0.201
$IntCov_{f,2005}$	0.392	0.251	0.345	0.258	3.377***
$HasCollatLoan_{f,2005}$	0.798	0.402	0.656	0.476	6.180***
$LogMaturity_{f,2005}$	3.484	0.886	3.671	1.007	3.716***

This table shows the mean and standard deviation of several variables across firms borrowing in FX from relationship banks (columns 1 and 2) or from transactional banks (columns 3 and 4). Column 5 reports the t-test associated with the null hypothesis that the mean of a given variable across the two groups is different from zero. We compute statistics over the distribution in the whole sample including 1684 (402) firms borrowing in FX from relationship (transactional) banks only. All variables are taken at their end-of-2005 (predetermined) value. $Size_{f,2005}$ is the log of TA. $ROA_{f,\ 2005}$ is return (net income) on assets. $Imports_{f,2005}$ and $Exports_{f,2005}$ denote the log of imports and exports, respectively. $Relationships_{f,2005}$ is the number of domestic banks a firm borrows from. $BankCET1_{f,2005}$ is bank average equity over TA and $BankSize_{f,2005}$ is bank average log TA (in both cases, weighted average across a firm's loan shares). $ExtFinLev_{f,2005}$ is the ratio between total liabilities and total assets. $TotCashandInv_{f,2005}$ is the share of TA accounted for by cash and short-term investments. $Tang_{f,2005}$ is the ratio between tangible assets and TA. $EBIT_{f,2005}$ stands for earnings before interests and taxes, rescaled by TA. $IntCov_{f,2005}$ is the interest coverage ratio, defined as interest expense over EBIT. $HasCollatLoan_{f,2005}$ is a dummy variable with value 1 if a firm has at least a collateralized loan. $LogMaturity_{f,2005}$ is the average log-maturity (in months) of a firm's bank loans. *** p<0.01, ** p<0.05, *p<0.1.

Panel B: PSM Sample

	(1)	(2)	(3)	(4)	(5)
	Relationship		Transactional		
Variable	Mean	SD	Mean	SD	T-Test
$Size_{f,2005}$	8.905	1.522	9.022	1.519	1.099
$ROA_{f,\ 2005}$	0.028	0.071	0.022	0.086	1.149
$Imports_{f,2005}$	4.413	3.225	4.549	3.125	0.614
$Exports_{f,2005}$	2.079	2.983	2.415	3.159	1.574
$Relationships_{f,2005}$	2.881	1.564	2.852	1.613	0.263
$BankCET1_{f,2005}$	0.040	0.009	0.040	0.010	0.821
$BankSize_{f,2005}$	16.316	0.432	16.273	0.455	1.407
$ExtFinLev_{f,2005}$	0.510	0.296	0.532	0.251	1.128
$TotCashandInv_{f,2005}$	0.071	0.082	0.069	0.092	0.323
$Tang_{f,2005}$	0.186	0.169	0.177	0.180	0.710
$EBIT_{f,\ 2005}$	0.066	0.052	0.066	0.049	0.019
$IntCov_{f,2005}$	0.371	0.259	0.345	0.258	1.450
$HasCollatLoan_{f,2005}$	0.705	0.457	0.656	0.476	1.492
$LogMaturity_{f,2005}$	3.651	0.933	3.671	1.007	0.289

This table shows the mean and standard deviation of several variables across firms borrowing in FX from relationship banks (columns 1 and 2) or from transactional banks (columns 3 and 4). Column 5 reports the t-test associated with the null hypothesis that the mean of a given variable across the two groups is different from zero. We compute summary statistics over the distribution in the propensity score matching (PSM) sample, obtained with the procedure described in Section 5.2.3. This sample comprehends all 402 firms with transactional FX-debt and a subsample of 402 firms with relationship FX-debt, selected based on the minimum distance of the propensity score. Column 5 reports the t-test associated with the null hypothesis that the difference in means of a variable across the two groups is equal to zero. All variables are taken at their end-of-2005 value. $Size_{f,2005}$ is the log of TA. $ROA_{f,\ 2005}$ is return (net income) on assets. $Imports_{f,2005}$ and $Exports_{f,2005}$ denote the log of imports and exports, respectively. $Relationships_{f,2005}$ is the number of domestic banks a firm borrows from. $BankCET1_{f,2005}$ is bank average equity over TA and $BankSize_{f,2005}$ is bank average log TA (in both cases, weighted average across a firm's loan shares). $ExtFinLev_{f,2005}$ is the ratio between total liabilities and total assets. $TotCashandInv_{f,2005}$ is the share of TA accounted for by cash and short-term investments. $Tang_{f,2005}$ is the ratio between tangible assets and TA. $EBIT_{f,2005}$ stands for earnings before interests and taxes, rescaled by TA. $IntCov_{f,2005}$ is the interest coverage ratio, defined as interest expense over EBIT. $HasCollatLoan_{f,2005}$ is a dummy variable with value 1 if a firm has at least a collateralized loan. $LogMaturity_{f,2005}$ is the average log-maturity (in months) of a firm's bank loans. *** $p<0.01$, ** $p<0.05$, *$p<0.1$.

Table A5: Substitution with Peso debt – Loan Price – PSM Sample

Dep. Variable: Loan Volume

	(1)	(2)	(3)	(4)	(5)	(6)
$Post_{yq}$*$Transactional_{f,pre}$	-0.181***	-0.107*	-0.132**	-0.113**	-0.180***	
	(0.066)	(0.062)	(0.055)	(0.057)	(0.065)	
$Post_{yq}$*Exposure-$T_{f,pr}$						-1.733
						(1.388)
$Post_{yq}$*Exposure-$R_{f,pre}$						2.028
						(2.524)

Dep. Variable: Loan Price

	(1)	(2)	(3)	(4)	(5)	(6)
$Post_{yq}$*$Transactional_{f,pre}$	0.779***	0.618**	0.499**	0.693***	1.035***	
	(0.247)	(0.242)	(0.237)	(0.217)	(0.276)	
$Post_{yq}$*Exposure-$T_{f,pr}$						14.713***
						(5.159)
$Post_{yq}$*Exposure-$R_{f,pre}$						-30.431***
						(11.014)
N	22231	22231	22231	22231	22148	22148
Firm Controls*Post	NO	YES	YES	YES	YES	YES
Firm*Bank FE	NO	NO	YES	YES	YES	YES
Bank*Year-Quarter FE	NO	NO	NO	YES	YES	YES
Industry* Year-Quarter FE	NO	NO	NO	NO	YES	YES
Loan Controls*Post	NO	NO	NO	NO	YES	YES

This table shows the effect of capital controls on the quantity and price of commercial (peso) credit granted from Colombian banks. The estimation sample is restricted to the sample resulting from the PSM and includes 402 firms ex-ante borrowing in FX from transactional banks and the 402 firms ex-ante borrowing in FX from relationship banks with closest propensity score. In the upper panel, the dependent variable is defined as the logarithm of the loan in pesos granted from bank b to firm f in year-quarter yq. In the lower panel, the dependent variable is the interest rate (in %) applied over the same loans. In columns (1) to (5), the baseline category is given by companies borrowing in FX before 2007:Q2 from relationship banks only. $Transactional_{f,pre}$ is a dummy with value 1 if a company borrowed in FX only from transactional banks before 2007:Q2 and 0 otherwise. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 to 2008:Q2 and 0 from 2006:Q1 to 2007:Q1. In column (6), Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$, $Imports_{f,yq-1}$, $Exports_{f,yq-1,}$ $Default_{f,yq}$ and $Relationships_{f,yq.}$ Loan Controls include: $Maturity_{f,b,yq}$ and $Collateral_{f,b,yq}$. Both Firm and Loan controls are fully interacted with the $Post_{yq}$ dummy. The sign "-" denotes cases where a variable (or a group of variables or of fixed effects) is spanned out by other controls and/or fixed effects. Both the number of observations and the employed vectors of controls are the same in a given column across the two panels. Standard errors in parentheses are clustered at the firm level. *** p<0.01, ** p<0.05, *p<0.1.

Table A6: Substitution of FX with Peso Debt: Intensive Margin - Oster Test

	(1) $\tilde{R}^2=\tilde{R}^2_{ft}$	(2) $\tilde{R}^2=1$
Dep. Variable: Peso Loan$_{f,b,yq}$		
$\tilde{\delta}^*_{Post*Both}$	8.843	2.618
$\tilde{\delta}^*_{Post*Transactional}$	17.23	5.117
Dep. Variable: Interest Rate$_{f,b,yq}$		
$\tilde{\delta}^*_{Post*Both}$	-1.343	-0.386
$\tilde{\delta}^*_{Post*Transactional}$	-7.866	-2.263

This table shows the robustness of our estimates in Tables 5 to the Oster (2017) test for selection into the treatment along unobservables. In column (1), the coefficient of proportionality $\tilde{\delta}$ is estimated under the assumptions that the maximum R-squared is equal to the R-square obtained by saturating the model with firm*bank, firm*year-quarter and bank*year-quarter fixed effects. In column (2), the maximum R-squared is assumed to be equal to 1. Note: the baseline version of the model only includes the full interaction of the $Post_{yq}$ dummy with the $Transactional_{f,pre}$ and $Both_{f,pre}$ dummies, respectively. The tests refer to the stability of the coefficient for $Post_{yq}$*$Both_{f,pre}$ and $Post_{yq}$*$Transactional_{f,pre}$, respectively, compared in the baseline version of the model and in one including firm*bank, bank*year-quarter fixed effects and firm controls interacted with the $Post_{yq}$ dummy.

Table A7: Substitution with Peso Debt from Local Banks - Collapsed Pre-Post Time Dimension

	(1) Peso Loan$_{f,b,yq}$	(2) Interest Rate$_{f,b,yq}$
Post$_{yq}$*Both$_{f,pre}$	-0.002	0.175
	(0.037)	(0.142)
Post$_{yq}$*Transactional$_{f,pre}$	-0.103**	0.478**
	(0.045)	(0.195)
N	17074	17074
R^2	0.913	0.823
Firm Controls*Post	YES	YES
Firm*Bank FE	YES	YES
Bank*Year-quarter FE	YES	YES
Industry*Year-quarter FE	YES	YES
Loan Controls*Post	YES	YES

This table shows the effect of capital controls on the quantity and price of commercial (peso) credit granted from Colombian banks. The baseline category is given by companies borrowing in FX before 2007:Q2 from local banks only. In column (1), the dependent variable is formally defined as the logarithm of the mean of (1+stock of peso debt provided by bank b to firm f) in the pre-period (2006:Q1 to 2007:Q1) and the post-period (2007:Q2 to 2008:Q2). In column (2), the dependent variable is formally defined as the mean of the interest rate applied on debt provided by bank b to firm f in the pre-period (2006:Q1 to 2007:Q1) and the post period (2007:Q2 to 2008:Q2). Equally, independent variables are mean-collapsed in the pre-period (2006:Q1 to 2007:Q1) and the post period (2007:Q2 to 2008:Q2 Transactional$_{f,pre}$ is a dummy with value 1 if a company borrowed in FX only from transactional banks before 2007:Q2 and 0 otherwise. Both$_{f,pre}$ refers to companies resorting to both relationship and transactional banks for FX credit before 2007:Q2. Post$_{yq}$ is a dummy with value 1 from 2007:Q2 to 2008:Q2 and 0 from 2006:Q1 to 2007:Q1. Firm Controls include ROA$_{f,y-1}$, Size$_{f,y-1}$, Imports$_{f,yq-1}$, Exports$_{f,yq-1.}$ Default$_{f,yq}$ and Relationships$_{f,yq.}$ Loan Controls include: Maturity$_{f,b,yq}$ and Collateral$_{f,b,yq}$. Both Firm and Loan controls are fully interacted with the Post$_{yq}$ dummy. Standard errors in parentheses are clustered at the firm level.*** p<0.01, ** p<0.05, *p<0.1.

Table A8: Substitution with Peso Debt from Local Banks: Impact Conditional on Pre-policy FX Exposure

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Peso Loan$_{f,b,yq}$					Interest Rate$_{f,b,yq}$				
Post$_{yq}$*Exposure-T$_{f,pre}$	-3.035**	-3.159*	-2.014	-1.846	-2.007*	2.990	8.888***	6.208*	9.936***	9.103**
	(1.235)	(1.761)	(1.448)	(1.421)	(1.134)	(3.198)	(3.433)	(3.501)	(3.357)	(3.552)
Post$_{yq}$*Exposure-R$_{f,pre}$	4.383***	3.700***	4.382***	4.291***	3.793***	-36.107***	-27.055***	-33.134***	-30.305***	-30.710***
	(1.313)	(1.422)	(1.248)	(1.247)	(1.199)	(3.999)	(3.984)	(4.116)	(3.973)	(4.135)
N	102035	102035	102035	102035	102035	102035	102035	102035	102035	102035
R^2	0.005	0.262	0.789	0.791	0.802	0.067	0.109	0.537	0.609	0.625
Firm Controls*Post	NO	YES	YES	YES	YES	NO	YES	YES	YES	YES
Firm*Bank FE	NO	NO	YES	YES	YES	NO	NO	YES	YES	YES
Bank*Year-Quarter FE	NO	NO	NO	YES	YES	NO	NO	NO	YES	YES
Industry*Year-Quarter FE	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES
Loan Controls*Post	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES

This table shows the effect of capital controls on the quantity (columns 1-5) and price (columns 6-10) of commercial (peso) credit granted from Colombian banks. The dependent variable is defined as the logarithm of the loan in pesos granted from bank b to firm f in year-quarter yq or as the interest rate (in percentage points) applied over the same loans. Exposure-T$_{f,pre}$ and Exposure-R$_{f,pre}$ are the average of FX-T Inflows$_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R Inflows$_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. Firm Controls include ROA$_{f,y-1}$, Size$_{f,y-1}$, Imports$_{f,yq-1}$, Exports$_{f,yq-1,}$ Default$_{f,yq}$ and Relationships$_{f,yq.}$ Loan Controls include: Maturity$_{f,b,yq}$ and Collateral$_{f,b,yq}$. Both Firm and Loan controls are eventually fully interacted with the Post$_{yq}$ dummy. The sign "-" denotes cases where a variable (or a group of variables or of fixed effects) is spanned out by other controls and/or fixed effects. Standard errors in parentheses are clustered at the firm level. *** p<0.01, ** p<0.05, *p<0.1.

Table A9: Substitution of FX with Peso Debt - Intensive Margin: Impact Conditional on Pre-policy FX Exposure – Different Definitions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PesoLoan$_{f,b,yq}$				InterestRate$_{f,b,yq}$			
$Post_{yq}$*Exposure-T-Liab$_{f,pre}$	-1.1788*				4.6610**			
	(0.668)				(2.181)			
$Post_{yq}$*Exposure-R-Liab$_{,pre}$	1.8453***				-17.0125***			
	(0.715)				(2.399)			
$Post_{yq}$*Exposure-T$_{f,2007:Q1}$		-1.4477**				6.3302***		
		(0.673)				(2.375)		
$Post_{yq}$*Exposure- R$_{f,2007:Q1}$		1.3919*				-12.1667***		
		(0.768)				(2.689)		
$Post_{yq}$*Exposure-T-Log$_{f,pre}$			-0.0204*				0.1279***	
			(0.011)				(0.038)	
$Post_{yq}$*Exposure-R-Log$_{f,pre}$			0.0296***				-0.2563***	
			(0.011)				(0.037)	
$Post_{yq}$*Exposure- T$_{f,2005}$				-1.6130**				3.7388*
				(0.810)				(2.248)
$Post_{yq}$*Exposure- R$_{f,2005}$				2.6620**				-25.8490***
				(1.190)				(4.033)
N	102035	102035	102035	102035	102035	102035	102035	102035
R^2	0.8019	0.8019	0.8019	0.8019	0.6249	0.6245	0.6248	0.6248
Firm Controls*Post	YES	YES	YES	YES	YES	YES	YES	YES
Firm*Bank FE	YES	YES	YES	YES	YES	YES	YES	YES
Bank*Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry*Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Loan Controls*Post	YES	YES	YES	YES	YES	YES	YES	YES

This table shows the effect of capital controls on the quantity (columns 1-4) and price (columns 1-8) of peso-credit granted to companies from Colombian banks, depending on a firm's pre-policy FX-exposure to transactional and relationship banks, respectively. $Post_{yq}$ is a dummy with value 1(0) from 2007:Q2 to 2008:Q2 (2006:Q1 to 2007:Q1). In columns (1) and (5), Exposure-T-Liab$_{f,pre}$ and Exposure-R-Liab$_{f,pre}$ are the average firm-level FX debt inflows from transactional and relationship banks in the period 2005:Q1-2007:Q1, rescaled by total liabilities. In columns (2) and (6), Exposure-T$_{f,2007:Q1}$ and Exposure-R$_{f,2007:Q1}$ are given by the 2007:Q1 firm-level values of transactional and relationship FX-debt inflows over total assets. In columns (3) and (7), Exposure-T-Log$_{f,pre}$ and Exposure-R-Log$_{f,pre}$ are the average firm-level log FX debt inflows from transactional and relationship banks in the period 2005:Q1- 2007:Q1. In columns (4) and (8), Exposure-T$_{f,2005}$ and Exposure-R$_{f,2005}$ represent the average firm-level FX-debt inflow (rescaled by total assets) from transactional and relationship banks over the period 2005:Q1 to 2005:Q4. Firm Controls include ROA$_{f,y-1}$, Size$_{f,y-1}$, Imports$_{f,yq-1}$, Exports$_{f,yq-1.}$ Default$_{f,yq}$ and Relationships$_{f,yq.}$ Loan Controls include: Maturity$_{f,b,yq}$ and Collateralized$_{f,b,yq}$. Each regression includes Firm and Loan controls, fully interacted with the $Post_{yq}$ dummy and firm*bank, bank*year-quarter and industry*year-quarter fixed effects. Standard errors in parentheses are clustered at the firm level.*** p<0.01, ** p<0.05, *p<0.1.

Table A10: Real Effects – Capital Controls and Trade during the Boom and the Bust – Robustness Checks

Panel A: Different Specifications of the Model - Exports

	(1)	(2)	(3)	(4)
		$Exports_{f,yq}$		
$Crisis_{yq}$ *$Exposure\text{-}T_{f,pre}$	4.9321**	4.5420**	5.1335***	5.2213***
	(2.213)	(2.092)	(1.617)	(1.814)
$Crisis_{yq}$*$Exposure\text{-}R_{f,pre}$	2.4782	-0.7784	-1.0380	-1.1536
	(4.900)	(4.699)	(2.893)	(3.439)
$Post_{yq}$ *$Exposure\text{-}T_{f,pre}$	-0.6415	-1.0928	-0.2990	-1.0216
	(2.717)	(2.486)	(2.388)	(2.254)
$Post_{yq}$*$Exposure\text{-}R_{f,pre}$	-0.7232	-3.6735	-2.1139	-1.4590
	(5.006)	(4.401)	(2.646)	(3.349)
N	15269	15269	15269	15269
R^2	0.0019	0.1015	0.8173	0.8476
Firm Controls*[Post; Crisis]	NO	YES	YES	YES
Bank Controls*[Post; Crisis]	NO	YES	YES	YES
Firm FE	NO	NO	YES	YES
Industry*Year-quarter FE	NO	NO	NO	YES
Companies active in both	Excluded	Excluded	Excluded	Excluded

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We report progressively saturated versions of the model for exports and imports. List of Variables. $Exports_{f,yq}$ is defined as the logarithm of (1+Exports of firm f in period yq), $Exposure\text{-}T_{f,pre}$ and $Exposure\text{-}R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 onwards. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel B: Different specifications of the model - Imports

	(1)	(2)	(3)	(4)
			$Imports_{f,yq}$	
$Crisis_{yq}$ *Exposure-$T_{f,pre}$	-1.7073	-0.6695	-1.2383	-1.7723
	(1.938)	(2.670)	(2.030)	(1.722)
$Crisis_{yq}$*Exposure-$R_{f,pre}$	2.9436	1.9500	2.2959	2.7480
	(2.724)	(2.792)	(1.781)	(2.032)
$Post_{yq}$ *Exposure-$T_{f,pre}$	-5.1875***	-4.9645***	-4.7530***	-3.1762**
	(1.323)	(1.758)	(1.351)	(1.255)
$Policy_{yq}$*Exposure-$R_{f,pre}$	0.6495	0.1407	0.3781	0.9796
	(2.502)	(2.528)	(1.305)	(1.634)
N	25294	25294	25294	25294
R^2	0.0705	0.2629	0.8166	0.8396
Firm Controls*[Post; Crisis]	NO	YES	YES	YES
Bank Controls*[Post; Crisis]	NO	YES	YES	YES
Firm FE	NO	NO	YES	YES
Industry*Year-quarter FE	NO	NO	NO	YES
Companies active in both	Excluded	Excluded	Excluded	Excluded

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We report progressively saturated versions of the model for exports and imports. List of Variables. $Imports_{f,yq}$ is defined as the logarithm of (1+Imports of firm f in period yq). Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 onwards. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel C: PSM Sample

	(1) $Exports_{f,yq}$	(2) $Imports_{f,yq}$
$Crisis_{yq}$*Exposure-$T_{f,pre}$	5.2015**	-1.1975
	(2.348)	(2.225)
$Crisis_{yq}$*Exposure-$R_{f,pre}$	-7.0146	3.0241
	(6.855)	(2.931)
$Post_{yq}$*Exposure-$T_{f,pr}$	-1.8349	-3.1682*
	(2.332)	(1.735)
$Post_{yq}$*Exposure-$R_{f,pre}$	3.4995	0.6735
	(6.375)	(2.664)
N	6486	9694
R^2	0.8681	0.8602
Firm Controls*[Post; Crisis]	NO	YES
Bank Controls*[Post; Crisis]	NO	NO
Firm FE	NO	NO
Industry* Year-Quarter FE	NO	NO

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We estimate our model over the matched sample obtained with PSM. $Exports_{f,yq}$ is defined as the logarithm of (1+Exports of firm f in period yq), $Imports_{f,yq}$ is defined as the logarithm of (1+Imports of firm f in period yq). Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 onwards. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel D: Oster Test – Imports and Exports

	$\tilde{R}^2 = 1$
Imports $\tilde{\delta}_{Post*Exposure\text{-}T}$	5.38
Exports $\tilde{\delta}_{Crisis*Exposure\text{-}T}$	32.97

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We perform the Oster (2017)'s test on the coefficient $Crisis_{yq}$*Exposure-$T_{f,pre}$ ($Post_{yq}$*Exposure-$T_{f,pre}$) for exports (imports) regressions, based on the comparison of columns 1 and 4 of Panel A (B) – under the assumption that the maximum R^2 is equal to 1..

Panel E: Different Definitions of the Exposure variables – Imports and Exports

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$Exports_{f,yq}$				$Imports_{f,yq}$			
$Crisis_{yq}$*Exposure-T-$Liab_{f,pre}$	3.7067***				-0.9834			
	(1.234)				(1.008)			
$Crisis_{yq}$*Exposure-R-$Liab_{f,pre}$	-0.4594				0.9091			
	(1.839)				(1.153)			
$Post_{yq}$*Exposure-T-$Liab_{f,pre}$	-0.1352				-1.8852**			
	(1.225)				(0.785)			
$Post_{yq}$*Exposure-R-$Liab_{f,pre}$	-0.7201				0.3475			
	(1.792)				(0.915)			
$Crisis_{yq}$*Exposure-$T_{f,2007:Q1}$		2.3085*				0.1307		
		(1.292)				(0.911)		
$Crisis_{yq}$*Exposure-$R_{f,2007:Q1}$		-1.6043				3.2150*		
		(2.334)				(1.678)		
$Post_{yq}$*Exposure-$T_{f,2007:Q1}$		1.4143				-0.8845		
		(1.391)				(0.722)		
$Post_{yq}$*Exposure-$R_{f,2007:Q1}$		0.9935				0.6597		
		(2.217)				(1.266)		
$Crisis_{yq}$*Exposure-T-$Log_{f,pre}$			0.0823***				-0.0217	
			(0.030)				(0.023)	
$Crisis_{yq}$*Exposure-R-$Log_{f,pre}$			0.0092				-0.0011	
			(0.031)				(0.019)	
$Post_{yq}$*Exposure-T-$Log_{f,pre}$			-0.0362				-0.0547**	
			(0.032)				(0.023)	
$Post_{yq}$*Exposure-R-$Log_{f,pre}$			-0.0010				-0.0084	
			(0.027)				(0.018)	
$Crisis_{yq}$*Exposure-$T_{f,2005}$				4.1977**				-0.6689
				(1.978)				(1.431)
$Crisis_{yq}$*Exposure-$R_{f,2005}$				0.5461				1.7655
				(3.353)				(1.784)
$Post_{yq}$*Exposure-$T_{,2005}$				-0.6775				-2.6736**
				(1.794)				(1.228)
$Post_{yq}$*Exposure-$R_{f,2005}$				-2.0408				1.4118
				(3.198)				(1.562)
N	15269	15269	15269	15269	25294	25294	25294	25294
R^2	0.8477	0.8476	0.8476	0.8476	0.8395	0.8395	0.8395	0.8395
Firm Controls	YES	YES	YES	YES	YES	YES	YES	YES
Bank Controls	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry*Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We check the robustness of results to different definitions of the exposure variables.. $Exports_{f,yq}$ is defined as the logarithm of (1+Exports of firm f in period yq), $Imports_{f,yq}$ is defined as the logarithm of (1+Imports of firm f in period yq). Exposure-T-$Liab_{f,pre}$ and Exposure-R-$Liab_{f,pre}$ are the average firm-level FX debt inflows from transactional and relationship banks in the period 2005:Q1-2007:Q1, rescaled by total liabilities. Exposure-$T_{f,2007:Q1}$ and Exposure-$R_{f,2007:Q1}$ are given by the 2007:Q1 firm-level values of transactional and relationship FX-debt inflows over total assets. Exposure-T-$Log_{f,pre}$ and Exposure-R-$Log_{f,pre}$ are the average firm-level log FX debt inflows from transactional and relationship banks in the period 2005:Q1- 2007:Q1. Exposure-$T_{f,2005}$ and Exposure-$R_{f,2005}$ represent the average firm-level FX-debt inflow (rescaled by total assets) from transactional and relationship banks over the period 2005:Q1 to 2005:Q4. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 onwards. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. The sample excludes companies ex-ante borrowing in FX from both relationship and transactional lenders. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel F: Collapsed Pre/Policy/Crisis Time Dimension – Imports and Exports

	(1) $Exports_{f,yq}$	(2) $Imports_{f,yq}$
$Crisis_{yq}$*Exposure-$T_{f,pre}$	5.5847***	-1.7361
	(1.919)	(2.136)
$Post_{yq}$*Exposure-$R_{f,pre}$	-1.8223	-3.5427**
	(2.322)	(1.504)
$Crisis_{yq}$*Exposure-$T_{f,pre}$	-1.4024	2.6373
	(3.219)	(1.785)
$Post_{yq}$*Exposure-$R_{f,pre}$	-1.9005	0.8679
	(3.108)	(1.345)
N	2859	4735
R^2	0.9522	0.9485
Firm Controls*[Post; Crisis]	YES	YES
Bank Controls*[Post; Crisis]	YES	YES
Firm FE	YES	YES
Industry*Year-Quarter FE	YES	YES

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We collapse data by taking averages of firm-level dependent and independent variables over the periods: 2006:Q1-2007:Q1 (pre); 2007:Q2-2008:Q2 (policy); 2008:Q3-2008:Q4 (crisis). $Exports_{f,yq}$ is defined as the logarithm of (1+Exports of firm f in period yq), $Imports_{f,yq}$ is defined as the logarithm of (1+Imports of firm f in period yq). Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 onwards. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel G: Different Definitions of Crisis and Policy Periods – Imports and Exports

	(1) $Exports_{f,yq}$	(2) $Imports_{f,yq}$	(3) $Exports_{f,yq}$	(4) $Imports_{f,yq}$
$Crisis_{yq}$*Exposure-$T_{f,pre}$	5.3119**	-1.8240	4.3898**	-1.5481
	(2.083)	(1.942)	(2.112)	(1.892)
$Crisis_{yq}$*Exposure-$R_{f,pre}$	-1.5080	2.6928	-1.1866	2.0264
	(3.865)	(2.196)	(3.732)	(2.048)
$Policy_{yq}$*Exposure-$T_{f,pre}$	-0.9619	-3.1646**	-0.1561	-3.4418***
	(2.257)	(1.254)	(2.328)	(1.283)
$Policy_{yq}$*Exposure-$R_{f,pre}$	-1.3959	0.9558	-1.5456	1.5529
	(3.341)	(1.640)	(3.465)	(1.691)
N	14312	23708	15269	25294
R^2	0.8485	0.8395	0.8476	0.8395
Firm Controls*[Post; Crisis]	YES	YES	YES	YES
Bank Controls*[Post; Crisis]	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry*Year-quarter FE	YES	YES	YES	YES
2008:Q3	Excluded	Excluded	Policy	Policy

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We either exclude observations for 2008:Q3 (columns 1 and 2) or relabel them as a year-quarter with CC in place (i.e. with $Post_{yq}$ equal to 1 and $Crisis_{yq}$ equal to 1 in columns 3 and 4). $Exports_{f,yq}$ is defined as the logarithm of (1+Exports of firm f in period yq), $Imports_{f,yq}$ is defined as the logarithm of (1+Imports of firm f in period yq). Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 onwards. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel H: Excluding companies in oil-related sector – Imports and Exports

	(1) $Exports_{f,yq}$	(2) $Imports_{f,yq}$	(3) $Exports_{f,yq}$	(4) $Imports_{f,yq}$
$Crisis_{yq}$*Exposure-$T_{f,pre}$	5.1864***	-0.6222	2.4086*	-0.2356
	(1.831)	(1.561)	(1.262)	(1.088)
$Crisis_{yq}$*Exposure-$R_{f,pre}$	-1.8740	2.9694	-1.9950	1.7760
	(3.489)	(2.042)	(2.443)	(1.571)
$Post_{yq}$* Exposure-$T_{,pre}$	-0.5144	-2.8107**	1.7117	-3.0807***
	(2.315)	(1.253)	(1.550)	(1.021)
$Post_{yq}$*Exposure-$R_{f,pre}$	-1.3191	1.5712	-1.9078	0.5051
	(3.414)	(1.636)	(2.391)	(1.258)
N	14200	24072	23698	35542
R^2	0.8466	0.8424	0.8739	0.8545
Firm Controls*[Post; Crisis]	YES	YES	YES	YES
Bank Controls*[Post; Crisis]	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry*Year-Quarter FE	YES	YES	YES	YES
Companies active in Both	Excluded	Excluded	Included	Included

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We repeat baseline regressions excluding companies involved in the production, distribution and refinement of oil (ISIC sectors 10, 11, 12, 13, 14, 23 and industries 2521, 2529 and 2924). $Exports_{f,yq}$ is defined as the logarithm of (1+Exports of firm f in period yq), $Imports_{f,yq}$ is defined as the logarithm of (1+Imports of firm f in period yq). Exposure-$T_{f,pre}$ and Exposure-$R_{f,pre}$ are the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) and of FX-R $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by relationship banks and total assets) in the period from 2005:Q1 to 2007:Q1, respectively. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 onwards. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Firm Controls include $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel I: Control group: companies inactive in FX-debt market (unaffected by CC)

	(1)	(2)	(3)	(4)
	$Exports_{f,yq}$		$Imports_{f,yq}$	
$Crisis_{yq}$*$Exposure\text{-}T_{f,pre}$	3.6200*		-2.2746	
	(1.952)		(2.197)	
$Crisis_{yq}$*-$\Delta Liabilities_{f,2007}^{predicted}$		3.2271*		-2.2771
		(1.775)		(2.027)
$Crisis_{yq}$*-$\Delta Liabilities_{f,2007}^{residual}$		0.0794		-0.2093
		(0.286)		(0.230)
$Post_{yq}$*$Exposure\text{-}T_{f,pre}$	-0.0309		-5.1293***	
	(2.429)		(1.650)	
$Post_{yq}$*-$\Delta Liabilities_{f,2007}^{predicted}$		-1.1613		-4.4119***
		(2.010)		(1.450)
$Post_{yq}$*-$\Delta Liabilities_{f,2007}^{residual}$		-0.4094		-0.1692
		(0.257)		(0.262)
N	17274	17274	35187	35187
R^2	0.8367	0.8367	0.8145	0.8145
Firm Controls	YES	YES	YES	YES
Bank Controls	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry*Year-Quarter FE	YES	YES	YES	YES
Sample of Companies	Foreign + Inactive	Foreign + Inactive	Foreign + Inactive	Foreign + Inactive

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We replicate regressions in Table 8, Panels A and B, contrasting the firm-level exports and imports of firms exposed to CC (i.e. firms ex-ante borrowing in FX from foreign banks only, whose growth of total liabilities is limited by the policy) and of firms inactive in the FX-debt market (unaffected by CC). $Exports_{f,yq}$ is defined as the logarithm of (1+Exports of firm f in period yq), $Imports_{f,yq}$ is defined as the logarithm of (1+Imports of firm f in period yq). $Exposure\text{-}T_{f,pre}$ is the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) over the period from 2005:Q1 to 2007:Q1. $-\Delta_{1y}Liabilities_{f,2007}^{predicted}$ is the yearly reduction in total liabilities predicted by $Exposure\text{-}T_{f,pre}$ in a cross-sectional regression in 2007 with industry fixed effects. The residual heterogeneity in total liabilities from same regression is $-\Delta_{1y}Liabilities_{f,2007}^{residual}$. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 onwards. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Firm Controls include $Exposure\text{-}R_{f,pr}$ $ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Panel J: Only companies constrained by capital controls

	(1)	(2)	(3)	(4)
	$Exports_{f,yq}$		$Imports_{f,yq}$	
$Crisis_{yq}$*Exposure-$T_{f,pre}$	4.1191**		-1.1893	
	(1.872)		(2.202)	
$Crisis_{yq}$*-$\Delta Liabilities_{f,2007}^{predicted}$		3.3117**		-1.6573
		(1.618)		(2.085)
$Crisis_{yq}$*-$\Delta Liabilities_{f,2007}^{residual}$		-0.0726		-0.1470
		(0.270)		(0.240)
$Post_{yq}$* Exposure-$T_{f,pre}$	0.9091		-2.9797*	
	(2.646)		(1.411)	
$Post_{yq}$*-$\Delta Liabilities_{f,2007}^{predicted}$		0.0689		-2.3853*
		(2.227)		(1.323)
$Post_{yq}$*-$\Delta Liabilities_{f,2007}^{residual}$		-0.4443		-0.0804
		(0.271)		(0.233)
N	3956	3861	5640	5453
R^2	0.8343	0.8347	0.8106	0.8105
Firm Controls*[Post; Crisis]	YES	YES	YES	YES
Bank Controls*[Post; Crisis]	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry*Year-Quarter FE	YES	YES	YES	YES

This table shows the effect of capital controls on firm-level trade, depending on pre-policy exposure to transactional and foreign FX-debt markets, during the implementation of the policy and the following Crisis. We replicate regressions in Table 8, Panels A and B, based only on the sample of companies exposed to capital controls. $Exports_{f,yq}$ is defined as the logarithm of (1+Exports of firm f in period yq), $Imports_{f,yq}$ is defined as the logarithm of (1+Imports of firm f in period yq). Exposure-$T_{f,pre}$ is the average of FX-T $Inflows_{f,yq}$ (ratio between FX-debt inflows intermediated by transactional banks and total assets) over the period from 2005:Q1 to 2007:Q1. -$\Delta_{1y}Liabilities_{f,2007}^{predicted}$ is the yearly reduction in total liabilities predicted by Exposure-$T_{f,pre}$ in a cross-sectional regression in 2007 with industry fixed effects. The residual heterogeneity in total liabilities from same regression is -$\Delta_{1y}Liabilities_{f,2007}^{residual}$. $Post_{yq}$ is a dummy with value 1 from 2007:Q2 onwards. $Crisis_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Firm Controls include Exposure-$R_{f,pr}$,$ROA_{f,y-1}$, $Size_{f,y-1}$ and $Imports_{f,yq-1}$ ($Exports_{f,yq-1}$) in regressions where exports (imports) is the dependent variable. Bank Controls include: $BankCET1_{f,yq-1}$; $BankROA_{f,yq-1}$; $BankSIZE_{f,yq-1}$; $BankNPL_{f,yq-1}$; $BankSaving_{f,yq-1}$; $BankChecking_{f,yq-1}$; $BankFX\text{-}Funds_{f,yq-1}$. Both Bank and Firm controls are fully interacted with the $Post_{yq}$ and $Crisis_{yq}$ dummies. Standard errors in parentheses are double-clustered at the firm and industry*year-quarter level. *** p<0.01, ** p<0.05, *p<0.1.

Table A11: The Impact of Capital Controls on Industry-level Employment

	(1)	(2)	(3)	(4)	(5)	(6)
			Employment$_{i,yq}$			
Crisis$_{yq}$ * Exposure-T$_{i,pre}$	2.2977	3.4812	2.6434*	2.3676*	1.3606*	0.0357***
	(7.036)	(7.372)	(1.341)	(1.385)	(0.731)	(0.010)
Crisis$_{yq}$ * Exposure-R$_{i,pre}$		0.0300	0.7628	1.1700	0.4724	0.0180
		(15.589)	(1.717)	(1.777)	(0.593)	(0.012)
Post$_{yq}$ * Exposure-T$_{i,pre}$	-1.5892	-0.1510	-0.3714	-0.2195	0.1173	-0.0113
	(6.489)	(6.125)	(1.438)	(1.517)	(0.888)	(0.011)
Post$_{yq}$ * Exposure-R$_{i,pre}$		1.9501	2.5174	2.8305	1.1627*	0.0230
		(15.246)	(2.100)	(2.117)	(0.686)	(0.015)
Exposure-T$_{i,pre}$	-1.4168	-0.5089	-	-	-	-
	(4.466)	(3.999)				
Exposure-R$_{i,pre}$		5.0855	-	-	-	-
		(10.128)				
N	432	432	432	432	432	432
R^2	0.0076	0.1777	0.9705	0.9732	0.9733	0.9754
Firm Controls*[Post; Crisis]	NO	YES	YES	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES	YES
Time FE	NO	NO	NO	YES	YES	YES
Expo. Rescaling	Assets	Assets	Assets	Assets	Liabilities	Logs

This table shows the impact of capital controls on industrial employment. The dependent variable is defined as the logarithm of Employment in industry i in year-quarter yq. Exposure-T$_{i,pre}$ is a proxy of industry-level FX-exposure to transactional banks. Exposure-R$_{i,pre}$ is a proxy of industry-level FX-exposure to relationship banks. In columns (1) to (4), this is computed as the weighted average of the mean FX-debt flow from 2005:Q1 to 2007:Q1 across firms; weights are given by the ratio between a firm total assets and total assets at the end of 2006. In column (5), FX-debt flows at the firm level are rescaled by total liabilities. In column (6), they are defined in logs. Similar measures are used for FX-debt flows from relationship banks, whose exposure is denoted by Exposure-T$_{i,pre}$. Post$_{yq}$ is a dummy with value 1 from 2007:Q2 onwards and 0 from 2006:Q1 to 2007:Q1. Crisis$_{yq}$ is a dummy with value 1 from 2008:Q3 to 2009:Q4 and 0 from 2006:Q1 to 2008:Q2. Controls include ROA$_{i,y-1}$, Size$_{i,y-1}$, Exports$_{i,yq-1}$, Imports$_{i,yq-1}$. All controls are interacted with the Post$_{yq}$ and Crisis$_{yq}$ dummies. Standard errors in parentheses are clustered at the industry*Period level. Period is a categorical variable with value: 1 from 2006:Q1 to 2007:Q1; 2 from 2007:Q2 to 2008:Q2; 3 from 2008:Q3 to 2009:Q4. Standard errors are clustered at the industry level. *** p<0.01, ** p<0.05, *p<0.01.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