International bond market finance and the consequences of decoupling in profitability among larger firms. A Latin American story

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Abstract4

Since the Global Financial Crisis developing economies, including those of Latin America, increased their reliance on foreign currency borrowing, making greater use of the international bond market. The non-financial corporate sector became the second most important issuer of debt. Using a data base comprising approximately 295 listed firms for the larger Latin American economies for the period 2013-2023, the paper shows that bond issuing firms account for a larger share of total assets, revenue and investment expenditure relative to non-bond issuing firms. These findings are reproduced for nine sectors of economic activity (agriculture, construction, information, manufacturing, mining, retail trade, transportation, utilities, wholesale trade). In addition, bond issuing firms exhibit higher and increasing levels of profitability in most sectors. This favourable context for bond issuing firms and the decoupling in profitability has not led to increased investment expenditure. This is explained by overleveraging and prioritizing financial over investment in productive activities.

Key words: international bond market, bond/non-bond issuing firms, solvency, Minsky, non-linear threshold model.

JEL Codes: E32, G15, O1

1. Introduction

The countercyclical monetary policies, widely known as quantitative easing (QE), implemented by the major central banks of the developed world during and in the aftermath of the Global Financial Crisis (2008-2009) increased the reliance on foreign currency borrowing by developing economies including by those of Latin America.[2]

During this time the international bond market became a major source of finance for developed and developing economies surpassing that provided by cross-border bank loans. In the case of Latin America, the larger economies of the region (Argentina, Brazil, Chile, Colombia, Mexico and Peru), which make up 85% of the total weighted GDP for the entire Latin America and Caribbean region, account for the bulk of bond issues.

The outstanding amounts of debt securities issued in international markets by this group of economies increased from US$ 277 to 321 billion dollars between 2000 and 2010. The policies adopted during the Pandemic reinforced this trend as the total outstanding amounts of debt securities reached US$ 745 billion dollars in 2020 and increased further US$ 800 billion dollars in 2025. As in the case of other developing regions, Latin America benefitted from favourable access to the international capital markets characterized by low interest rates and longer maturity periods especially during the Pandemic.

The analysis at the institutional sector level shows that after the general government, the non-financial corporate sector has been since the early 2000s, and especially after the Global Financial Crisis, the second most important issuer of debt in international capital markets. Also, non-financial corporates have accumulated debt at the fastest pace in comparison to other sectors.

Using a data base comprising approximately 295 listed firms for the larger Latin American economies for the period 2013-2023, we show that the group of firms that issued bonds in the international capital markets account for a larger share of total assets and revenue than non-bond issuing firms. Also, the expenditure on property, plant and equipment (a proxy for investment expenditure) by bond issuing firms surpasses that of non-bond issuing firms.

A more granular analysis reproduces these findings for the majority of nine sectors of economic activity which represent 58.8% of the total GDP for the larger of Latin American

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[2] The QE policy lasted for roughly six years and consisted in three major rounds of large-scale asset purchases. These are QE1 (December 2008-March 2010), QE2 (November 2010-June 2011), and Q3 (September 2012-December 2013). The Bank of England launched its QE policy in March 2009 and the European Central Bank followed suit at the beginning of 2015 with its Expanded Asset Purchase Program. Between the beginning of 2009 and 2019 the total assets of the major central banks expanded from US$ 9 to 19 trillion dollars, peaking at 20 trillion dollars in 2018. During the Pandemic the banks intensified their asset purchases. Between 2019 and 2021 their total assets reached a record of US$ 29 trillion dollars. The large-scale purchase of assets provided liquidity to the financial system, enabled central banks to stabilize commercial banks' balance sheets. It has also been fundamental to sustain an expansionary fiscal policy unprecedented since World War II by significantly lowering borrowing costs. See Pérez Caldentey (2017) and Yardeni (2025).

economies. These nine sectors include agriculture, construction, information, manufacturing, mining, retail trade, transportation, utilities, wholesale trade.

The findings also reveal that bond issuing firms have higher and increasing levels of profitability relative to non-bond issuing firms in six out of the nine sectors considered. These six sectors are agriculture, construction, information, manufacturing, wholesale trade, and transportation. However, this favourable profitability context did not translate into increased expenditure in property, plant and equipment.

This can be explained by the fact that bond issuing firms are overleveraged and use their available liquidity including that obtained from the issuance of debt in the international capital markets to protect themselves against financial constraints and balance sheet difficulties. This idea is grounded in Hyman Minsky's idea of margins of safety which can be identified by equity relative to indebtedness. The perception of smaller margins of safety due to increased leverage may lead firms to curtail investment plans.

Also, crises episodes have been shown to provide an opportunity to invest in financial rather than productive activities. During periods of heightened volatility in the cost of capital within unstable economic environments, non-financial corporations have increasingly diverted investment away from real economic activity toward financial investments (Krippner, 2011).

This paper is divided into eight sections. The second section discusses the importance of international bond market as a source of finance for developing economies and Latin America. The third section analyses the composition by institutional sector of bonds flows focussing on the large economies of Latin America. The fourth section explains the driving factors underlying the debt inflows to the region.

Using a data set from Refinitiv Eikon and verified against audited financial statements, comprising 295 listed non-financial corporations belonging to the biggest six economies in the region, the fifth section highlights the importance of bond issuing firms relative to non-bond issuing firms in terms of asset, debt, and income shares. The same analysis is expanded to show similar findings at the more disaggregated sectoral level.

Section six focusses on profitability and its relationship to expenditure on property, plant and equipment (i.e. investment). Section seven completes the empirical analysis, by presenting an econometric estimation relating investment to the components of profitability following a model proposed by Tori and Onaran (2017). Using general-to-specific modelling the results shows that the behavior of investment is explained by its past behavior, retained earnings and by cash from financial activities. The last section concludes.

2. The importance of the bond market as a source of international finance

In the aftermath of the Global Financial Crisis (2008-2009), the banking system lost relative importance as a generator and transmitter of global liquidity. The capital market, and

more precisely, the international bond market, compensated for the loss of dynamism of global banking, assuming a greater relative role in the provision of global liquidity.

Between the fourth quarter of 2000 and 2007, the outstanding amounts, of debt securities issuance increased from $1.8 to 3.1 trillion, jumping to 3.8 trillion in 2010, 8.5 trillion in 2020, 9.9 and 10.2 trillion in 2024 and 2025. As a result, the share of international debt securities in relation to total liquidity (bonds and cross-border bank lending) rose from roughly 47% on average between 2000 and 2007 to 55% in the post Global Crisis period.

Similarly, in the case of emerging markets and developing economies the issuance of international debt securities expanded from an average of $0.5 trillion dollars for the 2000-2007 period to 2.5 trillion in the aftermath of the Global Financial Crisis (35% and 44% of the total global liquidity channeled to emerging market and developing economies) (Table 1).

Table 1
Cross-border bank lending and issuance of international debt securities
Amounts outstanding. Trillion dollars. 2000-2025

	2000	2007	2010	2020	2024	2025
	World					
International debt securities (bonds)	1.8	3.1	3.8	8.5	9.9	10.2
Cross-border bank lending	1.8	4.0	4.7	7.2	7.4	7.9
Bonds/Liquidity (percentages)	50	44	45	54	57	56
	Emerging market and developing economies					
International debt securities (bonds)	0.5	0.6	0.8	2.2	2.6	2.7
Cross-border bank lending	0.7	1.4	1.9	3.3	3.0	3.1
Bonds/Liquidity (percentages)	39	30	28	40	46	46

Source: Authors' own elaboration based on the Bank for International Settlements (BIS), 2025.
Note: Data includes cross-border bond issuances and loans in U.S. dollars, euros, and yen. All figures were converted into United States dollars, using the exchange rate of the relevant quarter, weighted by the volume of debt and loans denominated in dollars, euros and yen. Liquidity refers to the sum of cross-border bonds and loans. Each year's data refers to the fourth quarter except for 2025, which is for the second quarter of the year.

At the more detailed regional level, the larger economies of Latin America (Argentina, Brazil, Chile, Colombia, Mexico, and Peru which account for roughly 85% of the region's GDP) also increased significantly their stock of international debt securities from US$ 277 billion in 2000 to 371 in 2010, increasing further to 744 billion during the Pandemic and settling at 800 billion in 2025 (Table 2).

The fact that in the case of emerging market and developing economies the growing importance of the bond market as a source of international liquidity was not affected by the widespread damaging effects of the Pandemic on the real sector and on social conditions marked a significant difference with the behavior of debt flows during other times of crises

as for example during the Global Financial Crisis (GFC, 2008-2009).[3] Between the middle of 2007 and the end of 2008, the rate of growth of debt of debt security issues for emerging market economies and developing countries declined consistently experiencing a contraction in the last quarter of 2008 (-1.5%). Contrarily during the Pandemic, the rate of growth of debt securities showed an increasing trend (9.4% and 12.8% for the first and fourth quarter of 2020).

Also, debt inflows moved in the opposite direction to that of cross-border bank loans and long-term flows. Between the first and last quarter the rate of change of cross-border bank loans declined from 5.8% to -0.5%. In the case of Latin America cross-border bank loans contracted roughly by 5% in 2020 whereas bond issues increased above 10% (Figure 1).[4]

For emerging market and developing economies including those of Latin America maintaining access to external finance allowed countries to avoid current account adjustments.[5]

Detailed evidence at the country level for Latin America and the Caribbean shows that out of a sample of 22 Latin America and Caribbean countries only 6 (Argentina, Costa Rica, Dominican Republic, Ecuador, Guatemala and Surinam) suffered a sudden capital stop in net capital flows during the Pandemic.[6]

Rather than responding the impact of the Pandemic itself, the sudden capita stop had more profound underlying causes. This group of countries was found to be the most vulnerable in terms of a set of macroeconomic variables (including the fiscal balance, international reserves, current account balance and liability dollarization) having a higher probability of experiencing a sudden stop. In fact, this group of countries had already experienced a slowdown in inflows in 2019.

3. An analysis of the sectoral composition of debt flows

In the case of developed economies, the sectors that have made most use of the international capital market as a source of funding are financial corporations, followed by non-financial corporations and by the general government. As of 2024, these sectors represented 80%, 15% and 5% of the total amounts outstanding of international debt securities.

In the case of developing economies, the government accounts for the most significant share of the total amounts outstanding of international debt securities (49% of the

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[3] The coronavirus disease (COVID-19) pandemic is considered the worst global crisis since the Second World War. Most economies recorded declines in output in 2020. In Latin America and the Caribbean, GDP fell by 7% reflecting one of the largest contractions on record.

[4] The computations are based on BIS (2025).

[5] See, Cavallo at al. (2022). Half of the Latin American countries experienced a contraction of economic activity and a surplus in the current account.

[6] See Cavallo et al. (2022) and IDB (2022a). According to IDB (2022b): "A sudden stop occurs when cross border financing unexpectedly dries up, forcing an abrupt current account reversal and often a recession."

total for 2024). The non-financial sector and financial corporations take second and third place (27% and 24% for the same period). [7]

Across emerging markets the non-financial corporate sector was the most dynamic issuing sector. At the global level, borrowing in the international capital markets, was concentrated in the larger firms (those with revenues above US$ 1 billion dollars). [8]

A more detailed analysis for the group of the larger economies of Latin America ranging from 2000 to 2025 shows a similar pattern. Moreover, the non-financial corporate sector increased significantly its share over time. The rate of growth of the non-financial corporate sector debt largely exceeds that of the government.

For this group of Latin American economies, the general government held on average 64% of the stock of total international debt securities between 2000 and 2010 declining to 46% between 2010 and 2025. The non-financial corporate sector started with a much smaller share averaging 19% between 2000 and 2010 but increased it significantly to 31% on average for the period 2010-2025. The average share of the financial corporate sector remains constant throughout the entire period at 13% (Table 2).

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[7] The data were obtained from BIS using a sample of 50 developed and 50 developing economies (BIS, 2025).
[8] See Goel and Serena (2020).

Table 2

Stock of debt securities for the larger economies of Latin America by institutional sector 2000-2025.

In US$ billion and as percentage of the total

Sector	2000	2010	2016	2019	2020	2022	2024	2025
	In billions of US$ dollars							
General government	201,241	176,259	221,052	292,124	321,439	340,821	369,252	394,236
Financial corporations	22,082	58,957	91,125	106,280	95,656	88,006	85,232	85,939
Private banks	12,784	36,990	53,451	59,201	55,034	49,639	49,326	48,957
Other private financial institutions	4,648	24,209	38,342	48,120	44,554	47,452	48,488	47,136
Public banks	7,440	7,347	16,113	8,818	6,476	7,406	5,612	5,999
Non-financial corporations	47,300	67,809	213,238	249,778	261,107	241,781	226,446	235,296
Public other financial institutions	5,893	13,593	46,913	66,200	69,206	77,492	82,632	83,906
Total	277,837	321,111	576,346	711,724	744,910	748,852	765,371	800,672

Source: On the basis of BIS (2025)

4. The drivers of debt flows

The importance of debt flows is explained by demand and supply side factors. On the demand side, low returns earned on developed country treasuries caused by the adoption of quantitative easing policies pushed investors to turn to higher return securities in the developing world. Evidence for the period 2015 to 2024 shows that EMDES investment grade corporate bonds have on a consistent basis exhibited a higher spread per turn of net leverage than United States investment grade bonds.[9]

The decline and stability of the risk premium (CEMBI) of the non-financial sector corporate bonds in the aftermath of the Global Financial Crisis (2008-2009) in the developing world and in Latin America reflect this behavior.[10] In addition, since the October 2016 the risk premium on non-financial sector corporate bonds remained systematically below that of sovereign bonds (CEMBI) (Figure 2.).

Following a significant increase during the Global Financial Crisis between August 2008 and March 2009, from 367 to 795 basis points the risk premium for Latin American non-financial corporates (CEMBI) declined sharply to reach a trough at the end of March 2011 (250 basis points). Thereafter the CEMBI remained on average within a 300-400 basis points range except for the jumps registered in from May 2015 to December 2016 due to the decline in the growth of China and in commodity prices and during February 2020 to September of the same year resulting from the impact of the Pandemic.[11] With the exception of those two episodes the CEMBI for Latin American corporates averaged 350 basis points with a standard deviation of 44 basis points. Since October 2017, the CEMBI basis points have averaged 28% below those of EMBI.

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[9] Aidar and Braga (2020) argue that the risk premium is driven by external factors. Their analysis underscores the importance of the behavior of oil prices the VIX index and the 5-year Treasury bill note in determining country risk spreads.

[10] In the case of the EMBI the minimum rate that an investor would require to invest in that country is equal to the rate of treasury bonds plus the EMBI of a given country. A similar reasoning can be applied to the CEMBI.

[11] The Pandemic caused a spike in risk perceptions for emerging markets and developing economies (EMDES) including for those of Latin America and the Caribbean which jointly with the Federal Reserve interest rate cuts provoked a divergence between the sovereign and corporate bond yields of the former and the United States 10-year treasury rates. In contrast to other crises episodes including the 1980s debt crisis, the Asian (1997) and Russian Crisis (1998) and the 2013 Taper Tantrum, the divergence was short-lived. However, the yield spread remained above pre-pandemic levels reflecting greater profit opportunities. As the Pandemic became an epidemic in March 2020 EMDES investment grade corporate bonds offered at the yields close to 100 basis points above their developed market equivalents. Thereafter, yields fell but remained roughly 50 basis points above those of developed economies. Additional available Moreover, in 2020, the spread per turn of net leverage was the highest since 2016.

Figure 1

Evolution of the Emerging Market Sovereign and Corporate Bond Indices (EMBI and CEMBI) for Latin America

January 2007-October 2022. Monthly data.
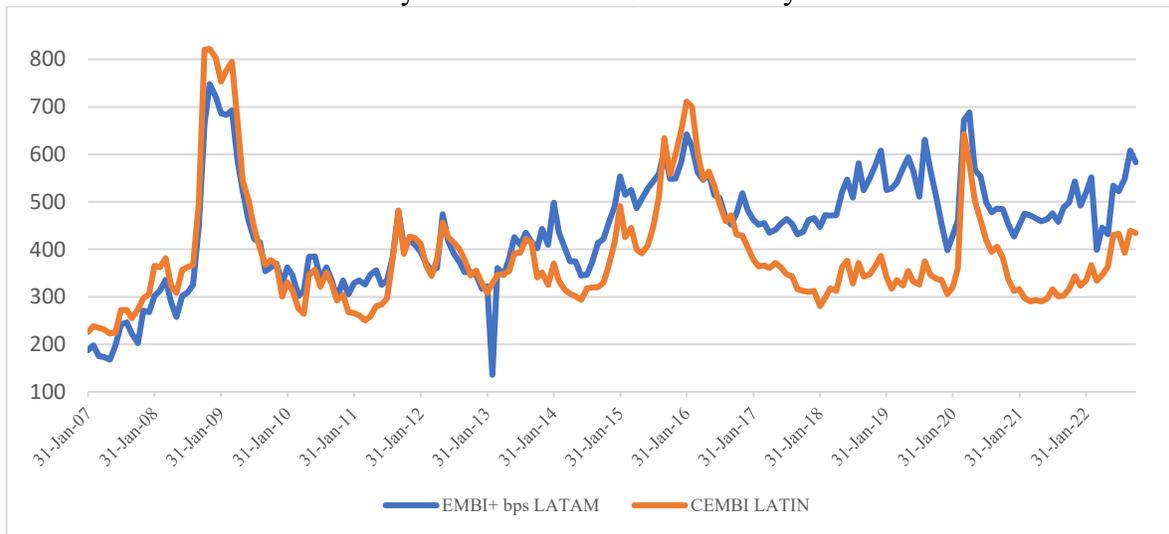
Source: JP Morgan (2025).

Note: The EMBI weighted average of the difference between the daily returns of sovereign debt instruments for Latin American countries and the return of US Treasury securities of the same maturity considered risk free. The CEMBI tracks the performance of US dollar-denominated bonds issued by emerging market corporate entities.

On the supply side the countries of the region have been able to secure the issue of bonds with longer-term maturities relative to previous years and at lower interest rates. The average maturity of all bond issues reached 13 years in 2020 with a minimum and a maximum of 2 and 64 years respectively. By comparison in 2010 the average of Latin American and Caribbean bonds was 9 years, with a minimum and a maximum of 0 and 60 years respectively. An analysis by type of debt issuer shows that the longest maturities are found in sovereigns (17.6 years on average), followed quasi sovereigns (15.6 years on average), non-financial sector corporates (12.5 years on average), and banking sector issuers and supra-nationals (6.8 and 5.9 years on average).

Figure 2
Latin America: Debt issues (US$ billion) by the non-financial corporate sector in the
international capital market and coupon (%). Averages. 2007-2024
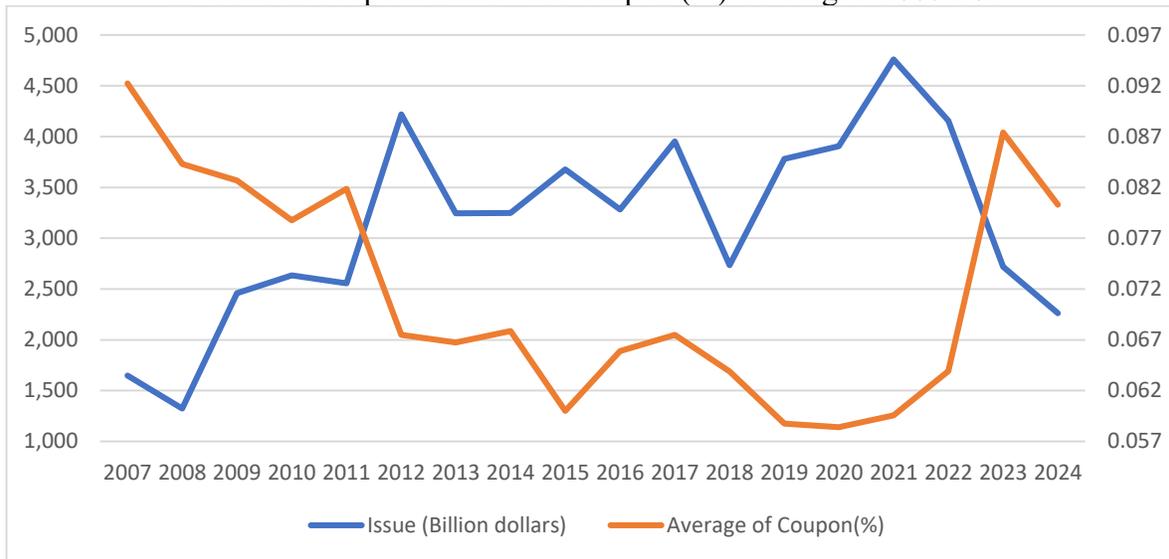
Source: author's own based on official data.

The evolution of the non-financial corporate yield average responded to long-term concerns and follows the United States long-term treasury bill rate. During the Global Financial Crisis and its aftermath quantitative easing (QE) policies that increased the balance sheet of the Federal Reserve through greater holding of Treasury Bills accommodating an expansionary fiscal stance that reduced the long-term treasury bill rate.

In tandem and in line with the analysis of the risk premium, the decline in the average yields for non-financial corporate debt of the large Latin American countries was interrupted during 2015-2016 to reach overall lows in 2019 and 2020. Corporate bond yields did not price in the increase in their risk premium during 2020 reflecting the fact that the Pandemic was viewed as a transitory phenomenon. The turning point in corporate bond yields starting in 2020 reflect the trends in long-term treasury bonds.[12]

Variations in nominal exchange rates relative to the United States dollar is another channel that explains, in part, the increase in indebtedness in the international capital market. The exchange rate channel generally introduced to explain the behavior of cross-border bank lending. A nominal exchange rate depreciation increases liabilities denominated in foreign exchange relative to assets creating the potential for a currency mismatch in borrower's balance sheets.

The weaker credit position of the borrowers increases the tail risk in the credit portfolio of the creditor constraining the spare capacity to extend additional loans. As a result, a depreciation in nominal exchange rates is associated with a decline in cross-border lending.

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[12] The 10 and 30-year treasury bill constant maturity rate began to increase at the beginning of August 2020 and have since maintained that upward trend. See FRED (2025).

A similar reasoning can be applied to explain portfolio inflows channeled through the international capital markets. Besides its impact on financial variables nominal exchange rate depreciation is also associated with lower growth and investment in emerging market and developing economies. During the period under analysis depreciations were not the rule.

Following at the beginning of the Pandemic in March 2020, emerging market and developing economies experienced increases in country risk accompanied by nominal exchange depreciations. Thereafter, due to quantitative easing policies and other measures to enhance the global dollar liquidity, such as for example the activation of existing bilateral dollar liquidity swap lines as well as their expansion to additional countries, currency depreciations were either reversed or became less pronounced.

Between January and March 2020, the Nominal Broad U.S. Dollar Index (a measure of the dollar's strength against a basket of global currencies) increased from 115.3 to 123.3, but by the end of December of that year declined to reach 111.3. The index did not surpass the January levels until November 2021 coinciding with the upward trend in inflation that affected most countries throughout the world.

In line with global currency trends between January and March 2020, all the countries included in this study witnessed currency depreciations (Argentina (7%), Brazil (21%), Chile (7%), Colombia (19%), Mexico (25%), and Peru (3%)). Between March and December 2020, the national currencies of Chile, Colombia and Mexico the opposite phenomenon as their currencies strengthened relative to the dollar (17%, 15% and 16% respectively). Brazil's nominal exchange rate with respect tot eh dollar remained at the March level while Peru saw a slight depreciation (6%). Nominal exchange rates began to depreciate again in the second semester of 2021.

5. Three main stylized distinguish bond-issuing from non-bond issuing firms

To compare the performance of the larger firms in Latin America we constructed a data set from Refinitiv Eikon and verified against audited financial statements, comprising 295 listed non-financial corporations belonging to the biggest six economies in the region, Argentina, Brazil, Chile, Colombia, Mexico, and Peru. The panel dataset spans an 11-year period from 2014 to 2023, yielding a total of 3,244 observations. At the country level Brazil, Chile and Mexico have the highest number of listed firms (98, 72 and 52 respectively, representing 33%, 26% and 18% of the total).

Consistently with the description of the previous section and to provide further details into our analysis we distinguish between firms that use the international capital market to provide finance from those that do not (bond and non-bonds issuing firms). Our sample includes 72 bond-issuing firms representing 24% of the total (Table 4).

Bond issuing firms display three main characteristics. First, they account for a large portion of total assets, net income and property plant and equipment.

At the country level the share of bond-issuing firms in total assets account for more than half of the total on average for the period 2013-2023 in the cases of Argentina (54%), Brazil (52%), Chile (62%), Colombia (59%) and Mexico (68%). Turning to net income, bond-issuing firms represent 54% of the total in the case of Argentina, 61% of the total in the case of Chile, 81% of the total in the case of Colombia and 55% of the total in the case of Mexico. Bond issuing firms also account for more than half of the share in investment in property, plant and equipment in Argentina (76%), Chile (52%), Colombia (61%) and Mexico (55%) (Table 4).

Second, the importance of bond-issuing firms is further underscored by the classification of firms by economic sector, including agriculture, construction, information, manufacturing, mining, retail trade, transportation, utilities, wholesale trade.

Mirroring the findings at the aggregate level the number of bond-issuing firms is much smaller than the non-bond issuing firms for every sector of economic activity without exception. The largest share of bond issuing firms is in the mining sector accounting on average for 40% of total firms for the 2013-2023 period.

But their importance measured by the share of total assets stands out in more than half of the sectors considered including information (67%), manufacturing (77%), mining (70%), retail trade (54%) and utilities (52%) which are capital intensive sectors (Table 5).

Table 3

Number of total firms, bond issuing and non-bond issuing firms; bond issuing firms´ share of total assets, short-term investment, expenditure on fixed assets and fixed investment and of the total number of firms 2013-2023

Countries	Bond issuing firms					Total number of firms and number of firms issuing and not issuing bonds		
	Share of total assets	Share of short- term debt	Share of long-term debt	Share of net income	Share of investment in property, plant and equipment	Number of bond-issuing firms	Number of non-issuing bond firms	Total firms and share of the total
Argentina	54	90	97	54	76	6	11	17 (35)
Brazil	52	51	56	40	38	14	84	98 (14)
Chile	62	57	67	61	52	23	55	78 (30)
Colombia	59	69	76	81	61	4	18	22 (18)
Mexico	68	79	74	52	55	17	35	52 (33)
Peru	42	47	58	23	56	8	20	28 (29)

Table 4

Number of bond issuing and non-bond issuing firms by sector of economic activity; bond issuing firms´ share of total assets, short-term investment, expenditure on fixed assets and fixed investment and of the total number of firms by sector of economic activity 2013-2023

Sector	Number of total firms and number of bond and non-bond issuing firms			Bond Issuing Firms			
	Total firms	Number of bond issuing firms	Number of non-issuing firms	Share of total assets	Share of short-term debt	Share of long-term debt	Share of total firms
Agriculture	6	1	5	20	28	24	17
Construction	23	1	22	2	3	4	4
Information	13	3	10	67	82	83	23
Manufacturing	121	36	85	77	70	86	30
Mining	15	6	9	70	83	72	40
Retail Trade	25	6	19	54	45	60	24
Transportation	17	1	16	12	19	20	6
Utilities	52	15	37	52	49	47	29
Wholesale	8	3	5	9	24	7	38

Source: Own elaboration based on Refinitiv Eikon (2024)

Third, bond issuing firms experienced higher levels of profitability than non-bond issuing firms in most of the economic sectors included in the analysis. Bond issuing firms display higher levels ROE (Return on Equity) for the whole (or most of the) period under consideration in six out of nine sectors considered. These include agriculture, construction, information, manufacturing, wholesale trade, and transportation (Figure 4).

In the case of utilities bond issuing firms show a higher level of profitability relative to non-bond issuing firms from 2015 to 2018. For mining and quarrying, there is no clear pattern of behaviour for the profitability of bond-issuing firms relative to non-bond issuing firms. Finally, retail trade is the only sector for which non-bond issuing firms display a higher profitability for the entire period under analysis.

The sectors for which bond issuing firms display higher levels of ROE (for the whole or most of the period) contribute to generate roughly 60% of regional GDP in the real economy. In addition, sectors such as construction, manufacturing, information, transportation are capital intensive.

Also, for the period 2013-2023 bond issuing firms represent on average 88% of investment in property, plant and equipment of the total. The sectors in which bond-issuing firms have greater profitability relative to non-bond issuing firms represent 48% of investment in property, plant and equipment in the case of agriculture, 43% in construction, 88% in information, 92% in manufacturing, 81% in transportation and 7% in wholesale trade. Relative to total investment in property, plant and equipment, three sectors (information, manufacturing and wholesale trade) account for more than 50% of the total (Table 5).

The analysis shows that the factors that influence the business decisions of these firms and behaviour can have a direct impact on the formation of gross capital of these economies and on their growth trajectories. This effect should also be visible in the evolution of regional GDP and investment since the larger countries of Latin America represent more than 80% of both national accounting variables.

Table 5

Selected indicators for sectors for which bond-issuing firms have and do not have higher profitability relative to non-bond issuing firms a/ 2013-2023

Sector	Share of GDP	Share of bond issuing firms of investment in property, plant and equipment within the sector	Percentage of total investment in property, plant and equipment by sector	Median rate of growth of investment in property, plant and equipment c/	Leverage Of bond and non-bond issuing firms
Sectors for which bond-issuing firms have higher profitability					
Agriculture, livestock, hunting, forestry and fishing	8.8	48	0.8	-0.6	1.04 (0.57) d/
Manufacturing industry	25.5	92	14.6	1.1	1.17 (0.67)
Construction	10.6	43	0.2	-1.1	1.30 (0.79)
Wholesale trade a/	…	7	10.6	0.2	0.85 (0.94)
Transportation, Storage, and Communications	13.9	81	5.6	19.0	10.50 (0.91)
Information b/	…	88	28.6	1.8	1.97 (0.55)
Total	58.8		60.4	0.7 d/	
Sectors for which bond-issuing firms do not have higher profitability					
Mining and quarrying	7.4	80	23.8	2.3	0.31e/ (0.80)
Retail trade b/	…	72	7.6	-0.12	0.69 (0.88)
Utilities	4.2	78	8.2	1.9	1.03 (0.99)
Total	11.6		39.6	1.9 d/	

Note: a/ Wholesale and retail trade are not included separately in national accounts data. Both account for 30% of GDP b/information does not appear as a sector in national accounts data. c/ the median was used to take into account extreme values in the data set considered. d/The leverage of non-bond issuing firms is in parenthesis. e/The leverage of bond-issuing firms is in parenthesis.
Source: Own elaboration based on Refinitiv Eikon (2024) and official information.

6. Profitability and investment expenditures at the sector level

The evidence shows that higher levels of profitability did not necessarily translate into increased expenditure on investment in property, plant and equipment.

Despite the large and growing differential (since 2020) of bond-issuing relative to non-bond issuing firms, expenditure on investment in property, plant and equipment in the construction sector contracted by -1.1% on average. Similarly, the agriculture sector witnessed a contraction in investment expenditure (-0.6%) notwithstanding the increasing trend in profitability since 2016. The wholesale trade sector also saw rising profitability since 2014, but investment expenditures stagnated averaging 0.2%. In manufacturing profitability increased throughout the entire period. While investment expenditures grew at an average of 1.1%, their level declined by 16% between 2013 and 2023. Transportation is the only sector that shows a positive association between profitability and investment expenditures (Table 5).

In an earlier paper (Pérez Caldentey, Favreau-Negront, & Mendez-Lobos, 2019) we argued that leverage was a major factor in firms' decisions to invest. More precisely we argued that overleveraging can result in a negative relationship between debt and investment.

The factors that can account for this negative relationship include higher interest payments, which subtract resources from being used for investment; a higher risk profile, which increases the difficulty of obtaining funding; and the desire to repair weak balance sheets and to build a buffer against illiquidity or possible default. This argument follows from Minsky's idea of margins of safety provided by liquidity (cash receipts and liquid assets) and that allow for 'error and variance' (Minsky, 1975, p. 162). [13]

As the margins of safety decrease economic agents become more dependent on income flows for debt payments and the 'normal functioning of financial markets to refinance positions in long-term assets.' As a result, any disruptions in income or in financial markets, can lead economic agents to experience difficulties in paying their debt (debt service and or principal) leading to liquidity constraints and outright insolvency.

To capture the inverse relationship between leverage and investment we identified a leverage threshold beyond which firms contract investment and increase their liquidity positions.

This argument is still supported by the data. Bond-issuing firms are highly leveraged and much more so than non-bond issuing firms. For the period 2013-2023 the leverage for the former averaged 1.17 and 0.72 for the latter. In the case of the manufacturing sector the leverage increased from 0.98 in 2013 to 1.20 in 2023, also averaging 1.17 for the entire period (Table 5).

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[13] As explained by Minsky (1986, pp.79-80) the size of the margins of safety determines whether a financial structure is fragile or robust and in turn reflects the ability of units to absorb shortfalls of cash receipts.

Figure 4
Evolution for ROE for selected sectors of economic activity (2013-2023)

Source: Own elaboration based on Refinitiv Eikon (2024)

Another argument that can account for the inverse relationship between profitability and investment (which can be complementary to the first) is that firms may decide to use the proceeds from bond issues for financial purposes instead of directing it to expenditure in investment in property, plant and equipment.

While this may not be the case for the entire period under consideration it is a plausible hypothesis within the context of a crisis such as a that of the Pandemic. In fact, financial profits derived from financial activities stem primarily from uncertainty in the cost of capital and the expansive waves of credit characteristic of a deregulated economic environment. This setting encourages non-financial firms to increase their investment in financial assets (Krippner, 2011)

7. The relationship between investment and the components of profitability: an econometric estimation

On the basis of the above analysis this section presents the results of an econometric estimation between investment and the components of profitability. The specification of the model follows that proposed by Tori and Onaran (2017) which is grounded in post-Keynesian economics.

7.1 Model specification and data description

The Tori and Onaran model posit that changes in investment are determined by profitability alongside other factors influencing net profit. In our specification, we exclude operating income to mitigate potential multicollinearity with revenue (represented in the retained earnings component). Furthermore, we incorporate lagged values for operating expenses, net interest expenses and cash from financial activities. These variables are part of the definition of net profits (Net Profit = Total Revenue -Operating Expenses–Interest Expenses+ Interest Income). The baseline econometric model is specified as follows:

$$(1) \left(\frac{I}{K}\right)_{it} = \beta_0 + \beta_1 \sum_{j=1}^{2} \left(\frac{I}{K}\right)_{it-j} + \beta_2 \sum_{j=1}^{2} \left(\frac{\pi - CD}{K}\right)_{it-j} + \beta_3 \sum_{j=1}^{2} \left(\frac{Operexp}{K}\right)_{it-j}$$

$$+ \beta_3 \sum_{j=1}^{2} \left(\frac{Net\ Intincome}{K}\right)_{it-j} + \beta_4 \sum_{j=1}^{2} \left(\frac{Cashfinance}{K}\right)_{it-j} + \epsilon_{it}$$

Where,

$\left(\frac{I}{K}\right)_{it}$ = investment rate of company i in year t, measured as gross fixed capital formation (I) in year t, scaled by the net capital stock (K) at the beginning of the period or end of t−1.

$\left(\frac{\pi - CD}{K}\right)_{it}$ = retained earnings rate, measured as the ratio of operating income (π) minus cash dividends paid (CD) to net capital stock (K).

$\left(\dfrac{Operexp}{K}\right)_{it}$ = operating expenses, normalized by the net capital stock.

$\left(\dfrac{Net\ Intincome}{K}\right)_{it}$ = net interest income, normalized by the net capital stock (K).

$\left(\dfrac{Cashfinance}{K}\right)_{it}$ = cash from financial activities, normalized by the net capital stock (K).

β_0 = constant.

ϵ_{it} = idiosyncratic error term.

      We also included in the specification two dummy variables. The purpose of the first one is to distinguish between the impact of profitability on investment for bond issuing and non-bon issuing firms. The second dummy variable is introduced to take into account the effect of the Pandemic on investment.

      The estimation utilizes a balanced panel dataset for non-financial listed companies in Latin America covering the period 2017-2023. Standard data quality filters have been applied. Consistent with the established literature, companies from the financial and real estate sectors are excluded from the sample.

      The descriptive statistics indicate a total of 693 observations, corresponding to 99 firms over a 7-year period (Table 6). This dataset is smaller than the one analysed in the preceding sections of this paper. The reduction is due to the fact that the specific variables required for this disaggregated profit analysis (such as detailed breakdowns of interest income/expense and cash from financial investments) are not consistently reported for all firms in the broader sample.

Table 6
Descriptive Statistics

	Number	Mean	Std	Min	Max
Investment/Equity	693	0.95	0.7	0	5.86
Revenue/Equity	693	1.64	1.06	0.21	6.03
Operating Expenses/Equity	693	1.41	1.02	0.07	5.64
Cash Payments Dividends /Equity	693	-0.08	0.1	-1.48	0
Interest_Expense/ Equity	693	-0.06	0.05	-0.39	0
Interest Income/Equity	693	0.01	0.02	0	0.18
Cash from financial activities/Equity	693	0.14	0.18	-0.7	2.96

Source: Own elaboration based on Refinitiv Eikon (2024).

7. 2. Discussion of the econometric results

      The approach to estimating the regression consisted in proceeding from the general to the more specific model. It consisted in three steps.

This first step involved estimating the general model which included the contemporaneous value and two lags for each of the independent variables considered in Eq. (1) (Table 7). In a second step the variables for which all the estimated coefficients corresponding to the contemporaneous variables and to the two lags were statistically insignificant (operating expenses $\left(\frac{Operexp}{K}\right)_{it}$ and net interest income $\left(\frac{Net\ Intincome}{K}\right)_{it}$) (Table 8) were excluded from the estimation of the regression.

The lack of significance of net interest income can be explained by the fact that during our period of estimation low interest rates tended to prevail resulting from expansionary monetary policies following the Global Financial Crisis and during the Pandemic. The absence of statistical significance of operating expense may reflect the fact that investment decisions and their behaviour may not respond to more immediate costs firms incur to carry out their daily operations.

Table 7
Results of econometric estimation distinguishing between bond-issuing and non-bond issuing firms

Variable	Coefficient	Standard error	t-statistic	P-value	Lower CI	Upper CI
$\left(\frac{I}{K}\right)_{it-1}$	0.91***	0.01	55.1	0.00	0.88	0.95
$\left(\frac{\pi - CD}{K}\right)_{it}$	0.58***	0.16	3.59	0.00	0.26	0.90
$\left(\frac{\pi - CD}{K}\right)_{it-1}$	0.07	0.16	0.42	0.68	-0.25	0.39
$\left(\frac{\pi - CD}{K}\right)_{it-2}$	-0.44***	0.15	-2.96	0.00	-0.73	-0.15
$\left(\frac{Operexp}{K}\right)_{it}$	0.10	0.25	0.40	0.69	+0.39	0.60
$\left(\frac{Operexp}{K}\right)_{it-1}$	-0.33	0.30	-1.09	0.28	-0.93	0.27
$\left(\frac{Operexp}{K}\right)_{it-2}$	0.04	0.24	0.15	0.88	-0.44	0.52
$\left(\frac{Net\ Intincome}{K}\right)_{it}$	0.20	0.13	0.18	0.86	-2.03	2.43
$\left(\frac{Net\ Intincome}{K}\right)_{it-1}$	-1.01	8.69	-0.12	0.91	-18.02	16.06
$\left(\frac{Net\ Intincome}{K}\right)_{it-2}$	2.87	5.29	0.54	0.59	-7.52	13.28
$\left(\frac{Cashfinance}{K}\right)_{it}$	0.11	0.31	0.34	0.73	-0.72	0.51
$\left(\frac{Cashfinance}{K}\right)_{it-1}$	0.06	0.23	-0.25	0.80	-0.52	0.40
$\left(\frac{Cashfinance}{K}\right)_{it-2}$	-0.76**	-0.32	2.36	0.02	0.13	1.38

Note: ** and *** denote significant at the 5% and 1% levels.

Table 8
Results of econometric estimation distinguishing between bond-issuing and non-bond issuing firms

Variable	Coefficient	Standard error	t-statistic	P-value	Lower CI	Upper CI
$\left(\frac{I}{K}\right)_{it-1}$	0.93***	0.02	59.46	0.00	0.90	0.96
$\left(\frac{\pi - CD}{K}\right)_{it}$	0.54***	0.16	3.42	0.00	0.23	0.85
$\left(\frac{\pi - CD}{K}\right)_{it-1}$	0.02	0.16	0.15	0.88	-0.30	0.34
$\left(\frac{\pi - CD}{K}\right)_{it-2}$	-0.51***	-0.1	-3.56	0.00	-0.78	-0.23
$\left(\frac{Cashfinance}{K}\right)_{it}$	-0.10	0.28	-0.37	0.71	-0.65	0.44
$\left(\frac{Cashfinance}{K}\right)_{it-1}$	-0.0	0.22	-0.04	0.97	-0.44	0.42
$\left(\frac{Cashfinance}{K}\right)_{it-2}$	-0.86***	0.30	-2.89	0.00	0.27	1.44

Note: ** and *** denote significant at the 5% and 1% levels.

In a subsequent third step the variables for which all the estimated coefficients were insignificant (retained earnings $\left(\frac{\pi - CD}{K}\right)_{it}$ lagged -1; cash from financial activities $\left(\frac{Cashfinance}{K}\right)_{it}$ in t and t-1) were eliminated from the estimation of the regression (Table 9).

Table 9
Results of econometric estimation distinguishing between bond-issuing and non-bond issuing firms

Variable	Coefficient	Standard error	t-statistic	P-value	Lower CI	Upper CI
$\left(\frac{I}{K}\right)_{it-1}$	0.93***	0.02	59.72	0.00	0.90	0.96
$\left(\frac{\pi - CD}{K}\right)_{it}$	0.56***	0.12	4.58	0.00	0.32	0.80
$\left(\frac{\pi - CD}{K}\right)_{it-2}$	-0.50***	0.12	-4.10	0.00	-0.75	-0.26
$\left(\frac{Cashfinance}{K}\right)_{it-2}$	-0.80***	0.26	3.12	0.00	0.29	1.31

Note: ** and *** denote significant at the 5% and 1% levels.

This third step gives the final version of the model. Investment is a function its lagged value at time t-1, retained earnings at time t-2 and cash from financial activities at time t-2. All the coefficients are statistically significant the 1% level of confidence. The lagged value

of the dependent variable $\left(\frac{I}{K}\right)_{it-1}$ and cash from financial activities $\left(\frac{Cashfinance}{K}\right)_{it-2}$ register the largest coefficients (0.93 and 0.80 respectively).

The value of the coefficients barely deviates from the values estimated in the first and second steps. In the more general estimation (Table 8) the value of the coefficients for $\left(\frac{I}{K}\right)_{it-1}$, $\left(\frac{\pi-CD}{K}\right)_{it}$, $\left(\frac{\pi-CD}{K}\right)_{it-2}$ and $\left(\frac{Cashfinance}{K}\right)_{it-2}$ yielded 0.91, 0.58 and 0.76 which are not significantly different than those obtained in the estimation of the specific model (Table 10), 0.93, 0.56 and 0.80. This suggests that the coefficients are stable.

The significance of the coefficient of lagged value of the dependent variable shows that investment follows and autoregressive process of order 1. The significance of retained earnings $\left(\frac{\pi-CD}{K}\right)_{it}$ reflects a well-known stylized fact that firms use retained earnings as a major source of financing investment. This stylized fact is applicable to all regions of the developing and developed world, without exception. This fact has no relation to the depth of the financial system or to the level of development of the financial system. Nor does it have a relationship with the size of the company. All companies, regardless of whether they belong to the developing or developed world, and their size, and in addition to their level of national, regional and global integration, are financed, in the first instance, with retained earnings.[14]

These findings are consistent with the Post-Keynesian view that retained earnings is a major source of funding the purchase of capital goods such as plant and equipment.[15]

The negative sign and statistical significance of cash from financial activities $\left(\frac{Cashfinance}{K}\right)_{it-2}$ indicates that earnings from activities that are unrelated to the main productive activity of the firms in the sample, including also liquidity obtained from the issue of bonds in the international capital markets, are not used for investment.

This result is coherent with the arguments found in the Post-Keynesian literature Stockhammer 2004, Orhangazi 2008) underscoring the diversion of corporate resources away from productive activities toward financial ones. As explained above this result can be explained, within a context overleveraging, in terms of Minsky's safety margins. To this can be added the explanations that crises episodes provide the incentive to channel liquidity to financial rather than to real investment. The findings also provide evidence supporting the

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[14] The importance of retained earnings as a source of financing responds to practical reasons and business strategy. Retained earnings have lower opportunity costs relative to other sources of financing. The most significant opportunity cost of using retained earnings arises for publicly traded companies (which are a small number of companies in the developing world, including in Latin America and the Caribbean). This is the income that a company's shareholders could have received as a result of the investment of their dividends received. Retained benefit are also a stable and permanent source of funding. See IMF (2008) or World Bank (2025b) showing the importance of retained earnings as a source of finance for Latin American firms.

[15] Davidson (1982, pp.48-49) distinguishes between construction finance obtained via loans from the banking system and which basically 'finances' working capital (labor and raw materials) and investment funding or final finance ("…the various means by which investment expenditures are being ultimately financed by the end of the production period; the retained earnings of corporations constitute the greatest part of gross investment funding. " Godley and Lavoie, 2007, p. 50).

idea that the expansion of finance can be viewed in the case of the Pandemic as an unintended political solution to a crisis (Kripner, 2005 & 2011).

8. Conclusion

Since the Global Financial Crisis, the international capital market has become an important source of finance for developing economies including for those of Latin America. Debt issuance is mainly denominated in US dollars. The international bond market has expanded its coverage to provide liquidity to the financial and non-financial corporate sectors. Prior to the Global Financial Crisis, the government was the main issuer of debt with little participation of the non-financial corporate sector. Thereafter the sectors that have made most use of the international capital market as a source of funding are the government and the non-financial corporate sector. And the rate of growth on non-financial corporate sector debt largely exceeded that of the government.

From the mainstream view improved access to international capital markets widens the financial toolkit at the disposal of economic agents increasing financial deepening. This contributes to establish the institutional framework conducive to increase the level of savings and channel these savings towards productive investment.

In this sense access and use of the international capital markets is key to increase investment and, in the case of Latin America, overcome its long-standing stagnation. Since the 1980s debt crisis the investment coefficient has been stuck around 20%. Moreover, since the Global Financial crisis the rate of growth of the gross formation of capital formation has trended downwards. It averaged 5.1% and 2.4% in real terms for the periods 2000-2008 and 2010-2024.[16]

In contrast this paper argues that greater access to the international capital markets provided an opportunity to increase profits as shown empirically by distinguishing between bond issuing and non-bond issuing firms. And this was probably a major reason that explains the increased external indebtedness of non-financial corporate firms for the large economies of Latin America.

The paper shows that profit opportunities not only occur against a background of relative tranquility underpinned by supportive monetary and fiscal policies but also during a crisis (COVID-19). Also, profitability is not related to productive investment but is closely connected with financial investment.

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[16] See World Bank (2025a).

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