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Sectoral Balances and Aggregate Demand in Emerging Market Economies

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Abstract

What are the institutional sources of aggregate demand in emerging market economies (EMEs), and how are they related to output dynamics? Building on a structuralist and post-Keynesian framework, we use sectoral national accounts to examine the institutional sources of aggregate demand and their relationship with output in EMEs. Panel regressions are used to estimate the contemporaneous relationship between sectoral balances and output, while local projections are used to examine their dynamic relationship over the medium run. In doing so, we contribute to the post-Keynesian literature on demand regimes in EMEs and the growing literature on growth models in comparative political economy. We find that the external sector plays a prominent role in medium-run output dynamics, with improvements in the current account balance associated with persistent increases in output. Government net lending is negatively associated with output over the early horizons, consistent with an important role for fiscal demand. Finally, country-level results reveal substantial heterogeneity, suggesting that household and corporate borrowing can be important sources of domestic demand in some EMEs.

Key words: Aggregate demand, Emerging market economies, Sectoral balances, Growth models

JEL classifications: E12, F32, O11

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1 Introduction

The role of aggregate demand has come to the forefront of macroeconomic research in explaining the financial instability and long-term stagnation of Advanced Economies (AEs) after the 2008 Global Financial Crisis (GFC). Meanwhile, Advanced Economies and Emerging Market Economies (EMEs) have followed increasingly divergent growth trajectories. These differences have been linked to distinct national growth models rooted in institutional arrangements governing income distribution and broader structural changes associated with globalization and financialisation. In this article, we examine the institutional sources of aggregate demand in emerging market economies (EMEs) and their implications for output dynamics, thereby contributing to the growing literature on growth models in EMEs.¹

Building on post-Keynesian macroeconomics, the growth model approach (GMA) in comparative political economy provides an explanation of the growth path of diverse national economies by placing aggregate demand dynamics and income distribution at the forefront of its analysis (Baccaro and Pontusson, 2016). The GMA builds on the concept of demand regimes, which emphasizes how income distribution shapes aggregate demand. Before the GFC, debt-led consumption and export-led mercantilist demand regimes were identified in Advanced Economies (Hein and Martschin, 2021). Both these growth models had a symbiotic relationship reflected in the mutually dependent and persistent current account imbalances as the U.S ran large current account deficits while Germany accumulated large current account surpluses based on growing exports². In recent years there has been an attempt to extend the GMA to emerging market economies using new methods and insights from post-Keynesian economics and comparative political economy.

Our research speaks to this agenda by addressing the following question: What are the institutional sources of aggregate demand in emerging market economies, and how do they shape output dynamics? The question acquires salience considering the stark structural differences between AEs and EMEs. The latter are typically capacity constrained and lag behind AE's in their technological capabilities and need to import capital goods to meet their supply constraints. Unlike AEs, EMEs are characterized by structural unemployment and informality. As a result, most EMEs are constrained by their foreign exchange reserves which

¹By “institutional sources of aggregate demand,” we mean the contribution of institutional sectors—households, non-financial corporations, government, and the external sector—to aggregate demand through their net lending and borrowing positions.

²Distinct social and political institutions such as corporate governance structures, collective wage bargaining institutions, producer coalitions underpin the growth model of these economies and help differentiate one growth model from another (Baccaro et al., 2022)

are essential to finance development and usually make the balance of payment constraint binding (Stockhammer, 2022; Caldentey and Vernengo, 2022). Well-documented regularities such as pro-cyclical current accounts and fiscally linked external balances further underscore these constraints (Aguilar and Gopinath, 2007; Ali Abbas et al., 2011; IMF, 2013; Kohler, 2021). These structural differences necessitate a rethinking of demand-regimes underlying the growth model approach relevant for EMEs.

To answer this question, we examine the institutional sources of aggregate demand in a sample of ten emerging market economies.³ To this end, the paper uses sectoral non-financial accounts to identify the institutional sources of demand and their relationship with output levels. Sectoral accounts provide a consistent accounting framework for tracing the flow of saving, investment, and consequently demand leakages and injections across institutional sectors. They serve as a useful analytical device since if a sector invests more than it saves, then it is contributing to demand formation in the economy. In this regard, the paper documents stylized facts about the sources of demand and the impact they have on output levels in EMEs.

Unlike existing approaches that classify demand regimes using either the National Income and Financial Accounts (NIFA) (Hein and Martschin, 2021; Akcay et al., 2022) or the Sraffian Supermultiplier (SSM) growth decomposition (Morlin et al., 2022; Campana et al., 2024), our framework examines the dynamic relationship between sectoral balances and output. The use of sectoral accounts does not impose any assumptions on the behavior of institutional sectors and is thus open to a variety of behavioral hypotheses as well as the structural heterogeneity typically found in EMEs. We find three main results. First, the external sector is the most important source of demand for EMEs as a whole, with improvements in the external balance associated with persistent increases in output. Second, the dynamic effects of government balances differ from their contemporaneous effects, highlighting the importance of distinguishing short-run from medium-run effects of government demand on output. Third, while private-sector balances do not exert a systematic effect across the full sample, individual-country evidence reveals substantial heterogeneity, with household and non-financial corporate borrowing playing an important role in several domestic-demand-led economies.

The structure of the paper is as follows. Section 2 provides a brief overview of the literature and section 3 elaborates the framework of sectoral balances and looks at cross-country corre-

³The sample is determined by the availability of disaggregated sectoral flow accounts for households and non-financial corporations.

lations to highlight the sources of demand. Section 4 investigates the contribution of sectoral injections on output levels using panel regressions and local projections and discusses the results. Section 5 concludes.

2 Literature Review

Our work speaks to two distinct strands of literature. The first one is the Growth Model approach (GMA) in comparative political economy which builds on the post-Keynesian analyses of demand-regimes and shows how demand-regimes and collective bargaining institutions shape national growth trajectories (Dutt, 1984; Bhaduri and Marglin, 1990; Stockhammer, 2010; Hein, 2012; Baccaro and Pontusson, 2016; Baccaro et al., 2022). The GMA emerged partly as a response to the Varieties of Capitalism (VoC) framework to explain the diversity of capitalist economies based on the concept of demand-regimes as opposed to institutional comparative advantage underpinned by supply-side macroeconomics in the VoC.⁴ Based on the analysis of national income accounting and financial balances (NIFA) approach, the literature has developed a taxonomy of demand regimes such as the debt-led, export-led, weakly export-led, and domestic demand-led regimes and applied it to a large number of economies (Hein, 2019; Hein and Martschin, 2021). The variety of growth models based on different patterns of income distribution is also correlated with persistent current account imbalances (Behringer and van Treeck, 2022). Thus, Behringer and Van Treeck (2019) find evidence that top-end income inequality affects the current account balance through its negative effect on household net lending, whereas a (positive) change in the wage share affects household net lending positively and corporate net lending negatively.

Two developments have taken place in the literature on the Growth Model approach (GMA). First, the scholarship has tried to refine the methods of identifying national growth models following limitations of the original national income and financial accounts (NIFA) method.⁵ Kohler and Stockhammer (2021) argue that post-GFC there are no stable demand-regimes

⁴Based on the analyses of financialization on aggregate demand, two complementary demand regimes were identified in advanced economies (AEs): a debt-led consumption demand regime in the U.S. and U.K., and an export-led mercantilist demand regime in economies such as Germany and Sweden (Hein, 2012; Hein and Mundt, 2013). In the former group of economies, rising personal income inequality and household debt sustained consumption demand, while a compressed wage share and price competitiveness sustained export growth in the latter group (Hein, 2012; Behringer and Van Treeck, 2019).

⁵Baccaro and Hadziabdic (2024) argue that the NIFA approach tends to underestimate the growth contribution of exports. In a similar vein, Campana et al. (2024) too note that the NIFA underestimates the role of autonomous exports.

and the NIFA approach incorrectly identifies demand-regimes and does not take into account business cycle dynamics⁶. Following this, they suggest using growth drivers or proxies for aggregate demand components to identify growth models. Similarly, several scholars have suggested using the autonomous and induced classification of aggregate demand based on the Sraffian Supermultiplier (SSM) model of growth to identify national growth models. (Morlin et al., 2022; Campana et al., 2024)

The second important development that has taken place is that the growth model approach has been extended to emerging market economies (EMEs) with modifications to the taxonomy of demand-regimes being suggested. Akcay et al. (2022) classify 8 large EMEs using the NIFA method and argue that many EMEs have moved toward domestic demand-led regimes after the 2008 GFC driven by large fiscal deficits or debt-led private demand-regimes. Similarly, Mertens et al. (2022, p.8) argue that EMEs such as South Africa, India, Russia, Brazil and Turkey show the growing importance of domestic consumption for growth while China, Turkey, along with India and Mexico show a strong investment-led growth regime. Given the importance of investment in EMEs for catching-up and infrastructure upgradation, they suggest including an investment-led demand-regime in the taxonomy. Following the suggestion of Kohler and Stockhammer (2021) using growth drivers instead of financial balances, Jungmann (2023) utilizes growth drivers i.e., variables for financialization, economic complexity index, wage inequality as proxies for demand components and finds substantial heterogeneity and weaker post-crisis growth in EMEs. The ambiguity regarding the growth contribution of exports has led to several scholars distinguishing between the *kinds* of exports i.e. whether they are commodity or manufacturing based, high-technology or resource-based (Schedelik et al., 2023; Campana and Hein, 2026)⁷. Thus, Mertens et al. (2022) propose further qualifying export-led and consumption-led growth models by specifying whether the consumption is wage-based or debt-based, and whether exports are commodity-based or manufacturing based. Nölke (2018) too distinguishes between hierarchical/dependent market and state-permeated economies based on their integration into the international economic order. Our paper contributes to the growing scholarship on the GMA in EMEs by proposing a novel empirical framework that combines sectoral balances with dynamic estimation to examine the institutional sources of aggregate demand.

⁶A fall in domestic demand and imports after the 2008 crisis appears as an export-led demand regime in the NIFA approach

⁷There is a long tradition of export-led and balance-of-payments-constrained growth (BoPG) growth model in post-Keynesian and structuralist theory applied to small open economies (Dixon and Thirlwall, 1975; Thirlwall, 1979). The key idea in these models is that trade needs to be balanced in equilibrium and this sets a constraint to the growth of demand (exports) The underlying mechanism is that the external sector is the *only* source of demand and domestic demand *fully* adjusts to the rate of growth of exports.

The second strand of literature informing our work is the structuralist “gap” tradition in development macroeconomics (Chenery and Bruno, 1962; Taylor, 1994). While the GMA literature is primarily concerned with classifying demand regimes, the structuralist literature provides an accounting framework for understanding how institutional sectors generate aggregate demand. This second tradition provides the conceptual foundation for our empirical analysis. To be clear, it is important to distinguish between the structuralist *method* and *theory*⁸. The structuralist method emphasizes the different institutional sectors- households, non-financial corporations, government, and the external sector, and their financial positions which must be mutually consistent by definition. Because this framework is rooted in macroeconomic accounting identities, it allows the behavioral features of different economies to appear through sector-specific borrowing, saving, and spending patterns. A core principle of the structuralist method is to have a consistent macroeconomic accounting framework among the institutional sectors of the economy (Taylor, 1994).

In Advanced Economies (AEs), the sectoral balance approach has been used to understand business cycles and financial stability using the stock–flow consistent, three-balances approach (Godley and Francis, 1983; Godley, 1999; Taylor, 2004; Godley and Lavoie, 2006). For example, Godley (1999) highlights how rising household indebtedness and persistent U.S. current account deficits created an unsustainable growth path, while Hein (2012) interprets the 2008 crisis through the interaction of mutually consistent current account imbalances of AE’s driven by rising inequality and household debt. Movements in sectoral balances also signal a relative increase or decrease in the contribution of a sector to effective demand, and can also give an indication of the accumulation of financial liabilities if the sector has a consistent negative balance (Godley and Lavoie, 2006; Zezza, 2009). Other works using sectoral balances document the growing savings of non-financial corporations in AEs and its implications for financialization and current account imbalances (De Souza and Epstein, 2014; Behringer and Van Treeck, 2018, 2019; Allen, 2019)⁹

The use of sectoral balances framework in emerging market economies (EMEs) is more limited. One common use of the three-balances approach in EMEs is to examine the ‘twin deficit’ hypothesis which suggests that the fiscal deficit drives the current account deficit (Ali Abbas et al., 2011). However, evidence from large cross-country studies shows that the

⁸A long tradition of structuralist theory exists in the global south especially associated with the work of Latin American Commission (ECLAC) See Caldenty and Vernengo (2022) for a discussion of Latin American structuralism with reference to the growth model approach

⁹In this regard, Hein (2012); Hein and Martschin (2021); Akcay et al. (2021) use financial balances of institutional sectors, along with growth contributions of aggregate demand to classify economies in different types of demand-regimes

constraint on the external sector dominate and that reductions in fiscal deficits often lead to higher private sector borrowing rather than improved external balances. Thus, [Rada et al. \(2006\)](#) and [Ocampo et al. \(2009\)](#) question the mechanism and direction of causality between the sectoral balances arguing that it is the changes in the current account balance which influence private economic activity in EMEs and this in turn influences the government sector balance through changes in tax revenue. In other words, the private sector's net borrowing and spending is greatly influenced by changes in the current account balance. They also find that patterns of net borrowing and lending differ across macro-regions. East and Southeast Asia have historically exhibited private-borrowing led expansions alongside improving external balances, while South Asia and Latin America display persistent fiscal deficits offset by private sector surpluses.

Our approach differs from the existing literature in that we use sectoral balances as an analytical device to identify the institutional sources of aggregate demand and their contribution to output levels in EMEs. Our contribution is twofold. First, we provide evidence on which institutional sectors act as the main sources of demand in EMEs. Second, we estimate how responsive output levels are to sector-specific demand leakages/injections, offering a dynamic perspective that descriptive growth decompositions and financial-balance typologies cannot capture. By grounding the analysis in a macroeconomic accounting identity and allowing demand dynamics to vary over a long horizon, our approach offers an empirically robust perspective on the role of aggregate demand in EMEs.

3 Sectoral Balances

The net lending/borrowing positions of institutional sectors from non-financial accounts are used as the main variable to understand the role of demand in emerging market economies.¹⁰ If a sector is a net borrower, its expenditures exceed its income and it therefore represents a net injection of demand, while a net-lending position represents a net leakage. As a heuristic device, sectoral balances are useful in identifying sources of demand since they are based on expenditure flows. In this regard, the article closely follows the methodology in [Taylor \(1994\)](#); [Godley \(1999\)](#); [Taylor \(2004\)](#); [Behringer and Van Treeck \(2019\)](#). The 10

¹⁰The data cover the time period from 1990 to 2020. The data on the private sector (households, non-financial corporations, financial corporations) balance is from the OECD national accounts database, while the data on external balance is from IMF's Balance of Payments databases and the data on government sector balance is from IMF's fiscal monitor database and Gross Domestic Product (GDP) is from World Development Indicators.

countries in the sample are selected to include large EMEs across different macro-regions (South America, West and East Asia, and Eastern Europe), subject to the availability of non-financial sectoral accounts. The 10 EMEs are Brazil, Chile, China, Colombia, Hungary, Mexico, Poland, Russia, South Africa, and Turkey. The sample is not exhaustive but is intended to capture the diversity of experiences across EMEs.

The net lending/borrowing by an institutional sector is the balance of all non-financial transactions by that particular sector. According to the OECD, “Net lending can be derived as saving plus net receipts of capital transfers minus net purchases of non-financial assets (i.e. the balance of the capital account), or it can be measured as the difference between net acquisition of financial assets and net incurrence of liabilities (i.e. the balance of the financial account)” (OECD, 2022, p.237). Very simply defined, it is the difference between income and expenditure of a particular sector and reflects the ‘financing capacity’ of that sector i.e., whether it is a net lender to, or borrower from other sectors. When a sector’s expenditures exceed its income, the difference must be financed by reducing financial assets or incurring liabilities.¹¹

The usefulness of sectoral balances arises from the macroeconomic accounting identity that net borrowing and lending across sectors should be equal to zero. As a result, sectoral balances are a useful starting point to understand the uses of funds¹². Thus, sectoral balances have been the basis of gap models in development macroeconomics providing evidence on the financing of development. For each country i , the basic accounting identity is;

$$NB_{jt} = E_{jt} - Y_{jt} = I_{jt} - S_{jt} = -NL_{jt}, \quad (1)$$

$$\sum NB_{jt} = 0,$$

where NB_{jt} is net borrowing by institutional sector j in time period t and is equal to the difference between expenditure E_{jt} and income Y_{jt} of that sector j or alternatively the difference between investment I_{jt} and saving S_{jt} of that sector, and is equivalent to negative net lending by the sector. The sum of net lending and borrowing across all sectors is equal to zero since one sector’s expenditure is another sector’s income.

¹¹As the balance of non-financial transaction flows, net lending also provides a useful link with the balance sheet in the financial accounts through *changes* in financial assets/liabilities, since the excess of any sector’s spending over its income is financed through a reduction in financial assets and/or an increase in financial liabilities.

¹²The net lending/borrowing by institutional sectors are alternatively labeled as the (erstwhile) flow of funds accounts which show the sources and uses of funds by different sectors and types of instruments

This macroeconomic accounting identity is useful in conceptualizing the flow of spending, and allows one to identify which specific sectors are sources of effective demand (Barbosa-Filho et al., 2008). Since net lending/borrowing is defined as the difference between income and expenditure, if a sector is a net borrower, then it contributes to effective demand because its expenditure exceeds its income. In terms of the institutional sectors, we have,

$$NFC_{it}^{ml} + FC_{it}^{ml} + HH_{it}^{nl} + GG_{it}^{ml} - CA_{it}^{nl} = 0, \quad (2)$$

where NFC_{it}^{ml} , FC_{it}^{ml} , HH_{it}^{nl} , and GG_{it}^{ml} denote the net lending balances of non-financial corporations, financial corporations, households, and general government, respectively, while CA_{it}^{nl} denotes the current account balance of country i in period t . An alternative way to represent this accounting identity is in terms of the current account balance, which reflects the country's net lending to or borrowing from the rest of the world.

$$CA_{it}^{nl} = NFC_{it}^{ml} + FC_{it}^{ml} + HH_{it}^{nl} + GG_{it}^{ml}, \quad (3)$$

where the current account balance is the sum of the private sector and the government sector balance.

$$CA_{it}^{nl} = GG_{it}^{ml} + PS_{it}^{nl}, \quad (4)$$

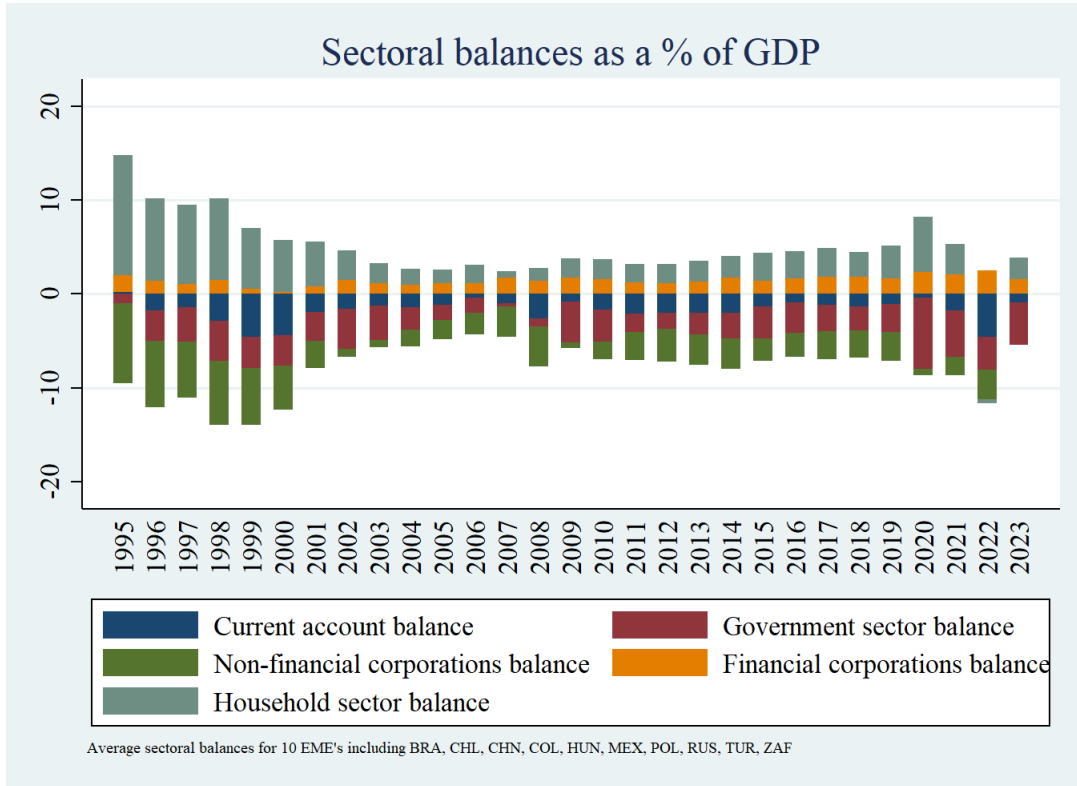
where PS_{it}^{nl} is the private sector balance¹³. In words,

$$\text{Domestic private net lending} + \text{Domestic public net lending} + \text{Foreign net lending} = 0$$

Figure 1 shows the evolution of sectoral balances for the 10 EMEs taken together. Visual perusal of the data confirms certain key facts about the behavior of institutional sectors in EMEs. On average across the sample, the household sector has been a net lender in EMEs while the non-financial corporate sector is a net borrower. The average net lending by the household sector has been about 3.6% over the sample period and has ranged between -3 to 16%, with China and Poland as outliers, with household balances reaching about 16% in China and -4% in Poland. The positive net lending of the household sector is mirrored by corporate-sector borrowing, which averages about 3.7% of GDP over the sample period, with the corporate balance ranging between -17% and 7%. Net lending by households was relatively high in the early 1990s and declined gradually in the run-up to the 2008 GFC after

¹³(Godley, 1999, p.8) refers to the private sector balance as the net accumulation of financial assets (NAFA)

Figure 1: Sectoral balances evolution



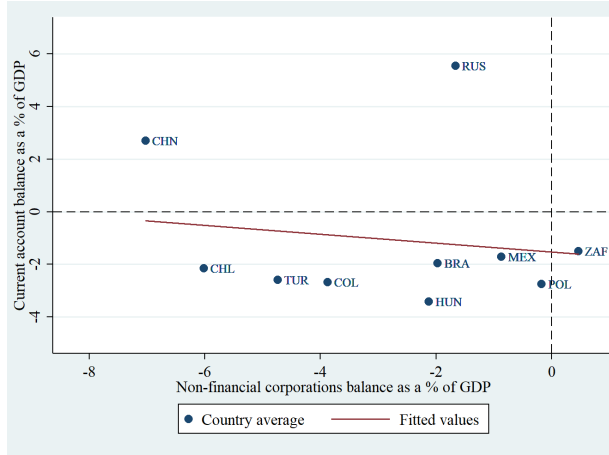
which it rose slightly again. For the sample as a whole, the current account balance averages a relatively modest deficit of about 1% of GDP, although this masks substantial variation across countries and over time.

The movement of average sectoral balances over time hides significant heterogeneity among the 10 EMEs. Countries such as Russia and China have consistently had current account surpluses, unlike the average EME whose current account is in deficit. Countries such as Brazil, Chile, and South Africa experienced current account surpluses in the early 2000s, coinciding with the commodity boom, before subsequently returning to deficit positions. Most EMEs also consistently run fiscal deficits, except for Chile, Russia and South Africa which have recorded fiscal surpluses in some years. While the corporate sector in most EMEs is a net borrower on average, Mexico, Hungary, Chile, Poland, and South Africa have witnessed a positive corporate balance in some years, underscoring the heterogeneity of sectoral net lending/borrowing patterns across EMEs.

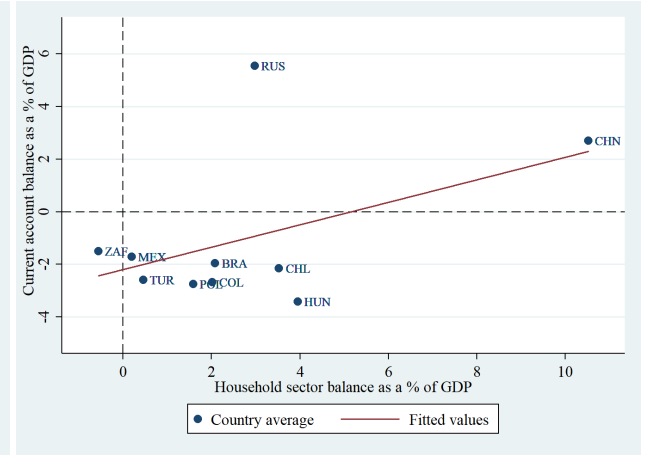
To analyze the direction and pattern of net lending/borrowing in EMEs on average, one can look at cross-country correlations between different institutional sectors in Figure 2.¹⁴ A

¹⁴The correlations of sectoral balances in individual countries are also presented in the appendix in Table

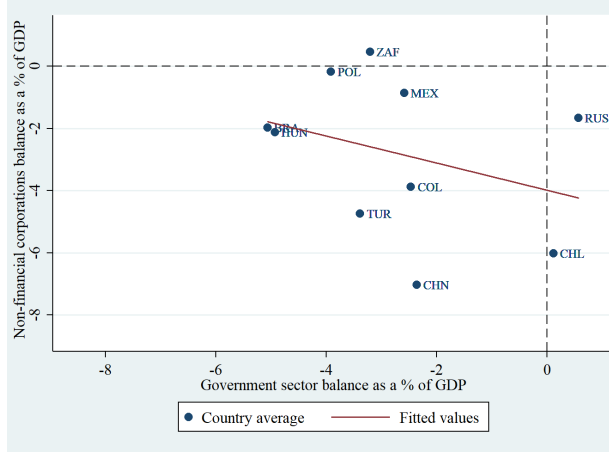
Figure 2: Cross-country correlations between different sectors



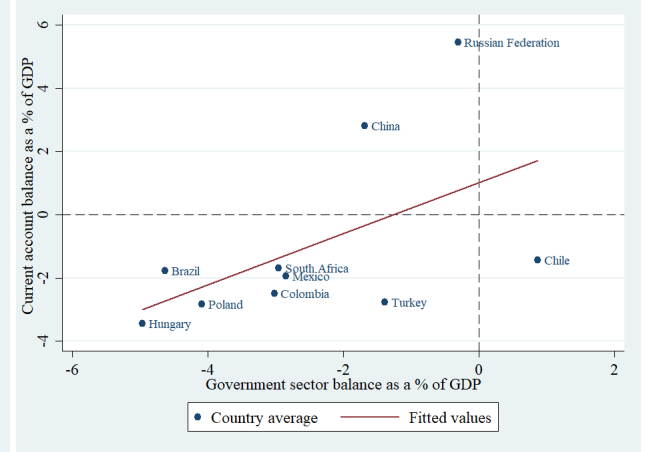
(a) X-NFC



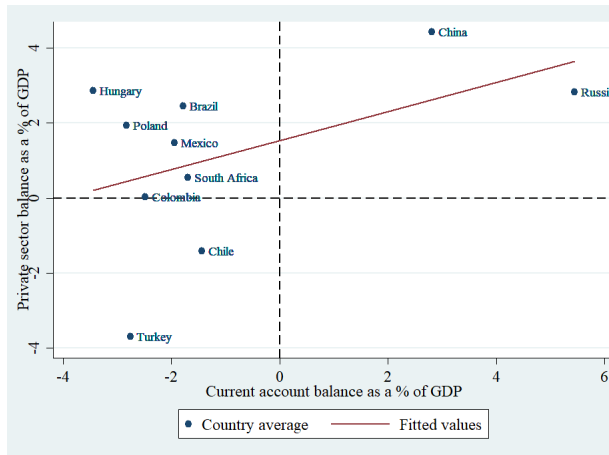
(b) X-HH



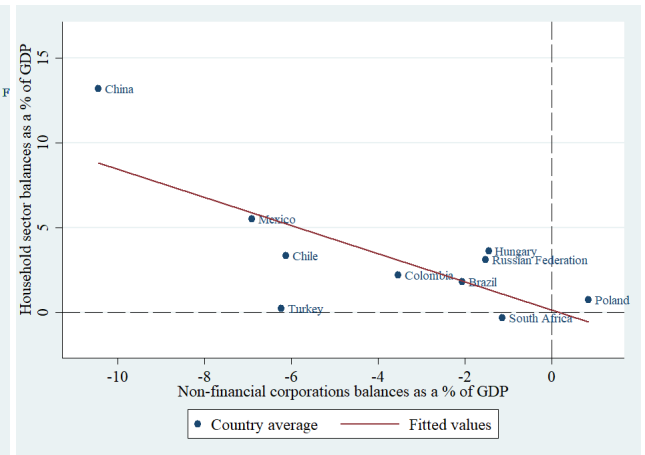
(c) NFC-G



(d) X-G



(e) X-PVT



(f) HH-NFC

few facts emerge from the cross-country correlations for the entire time period between 1990 and 2020. The first one is that, for the sample as a whole, greater corporate net borrowing is associated with higher household net lending, reflecting greater household saving relative to investment. The notable exceptions to this pattern are South Africa, whose household sector became a net borrower after 2000, and Poland, whose household sector became a net borrower after 2004. While most of the countries' household balances are in surplus, ranging from 2 % to 5% of GDP, the household balances of Turkey and Brazil fluctuate around 0% (see Figure 5 in the appendix on the evolution of sectoral balances for individual countries). On average, the household sector is lending and the non-financial corporate sector is borrowing (see Figures 1 and 2).

The second stylized fact is that, across countries, higher current account balances are associated with higher household and government sector balances in EMEs. Most EMEs in the sample have consistently had current account deficits, except Russia and China. The current account balance also exhibited substantial fluctuations in countries such as Brazil, Chile, Hungary, Mexico and Turkey. Finally, there is a positive relationship between the government sector balance and the current account balance, with most of the countries in the negative quadrant, suggesting that both balances are negative. On average over the sample period, all countries except Chile have negative government sector balances.

The third stylized fact is that there is a positive correlation between the private sector balance and the current account balance. An increase in the current account balance is associated with an increase in the private sector balance. While most scholars, including international agencies such as the IMF, have focused on the positive correlation between the government sector and current account balances, Figure 2 also shows the co-movement between the private sector balance and the current account balance. This pattern is consistent with the argument that current account deficits in EMEs largely reflect pro-cyclical increases in private spending financed by borrowing from abroad (Rada et al., 2006, p.76). The private sector typically has a small and relatively stable positive balance which is generally interpreted as the desire of the private sector to hold a positive ratio of net financial assets to disposable income. In other words, the private sector has a desired net positive stock of financial assets in a growing economy (Godley and Francis, 1983). The following section estimates how changes in the net lending by a sector affect output levels.

4 Sectoral Balances and Output

4.1 Panel Regression

In this section, we examine the contemporaneous relationship and dynamic responses of output to changes in sectoral net lending using panel regressions and local projections. We first estimate a single equation that regresses output levels on the current level of sectoral balances normalized by nominal GDP.

$$y_{it} = \alpha_i + \beta^j \frac{NL_{it}^j}{GDP_{it}} + \sum_{p=1}^3 \gamma_p y_{it-p} + \epsilon_{it}, \quad (5)$$

where y_{it} is the log level of real GDP, α_i denotes country fixed effects for each country i , and NL is net lending of each sector j , and p denotes the number of lags of the outcome variable.¹⁵ The independent variables are the net lending/borrowing balances of households, non-financial corporations, financial corporations and government, as well as the current account balance, each expressed as a share of GDP. The coefficient of interest is β_j and denotes the change in the output associated with a change in the net lending of a sector j .¹⁶

The regression results reported in Table 4.1 show the contemporaneous relationship between sectoral net lending and output levels. Private sector net lending as a whole is not statistically significantly associated with output levels. When the private sector is disaggregated and three lags of GDP are included, a one-percentage-point increase in household and non-financial corporate net lending is associated with a decline in output of approximately 0.24% and 0.21%, respectively (Column 5).¹⁷ In Column 6, an increase in the government sector balance is positively associated with output. A one-percentage-point increase in the government sector balance is associated with a 0.37% increase in output. However, this statistically significant positive association disappears after controlling for the current account balance (Column 7). After jointly controlling for household, non-financial corporate, government, and current account balances, as well as three lags of output, none of the sectoral-balance

¹⁵Sectoral balances are measured in nominal terms and normalized by nominal GDP. Using lagged nominal GDP to normalize the sectoral balance does not substantially change the results either qualitatively or quantitatively.

¹⁶The coefficients in the regression are to be multiplied by 100 to get the change in percentage terms.

¹⁷The negative coefficient on household net lending may reflect the role of rising household debt in supporting output growth in some EMEs, particularly Turkey, South Africa, and Chile.

Table 4.1: Single equation for sectoral net lending

	Dependent variable: y_{it}						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Private sector balance	-0.0107 (0.0103)						
Household sector balance		-0.0243 (0.0189)		-0.0320* (0.0179)	-0.00240* (0.00123)	-0.00194* (0.00101)	-0.00185 (0.00193)
Corporate sector balance			0.000737 (0.0166)	-0.0105 (0.0152)	-0.00211* (0.00115)	-0.00191** (0.000876)	-0.00183 (0.00131)
Government sector balance						0.00373** (0.00151)	0.00381 (0.00264)
Current account balance							-0.000112 (0.00245)
Country fixed effects	✓	✓	✓	✓	✓	✓	✓
Distributed lag in y					✓	✓	✓
Test for equality of β_{HH} and β_F , p-value				.311		.923	.973
R^2	0.0107	0.0348	0.0000658	0.0449	0.995	0.996	0.996
Observations	179	179	181	179	178	170	170

The table reports contemporaneous regressions of log real GDP, y_{it} , on private, household, non-financial corporate and government sector balances and the current account balance, expressed as shares of GDP. Columns (5)-(7) control for three lags of GDP. All specifications include country fixed effects. Standard errors are in parentheses and are clustered on country and year. *, **, *** indicate significance at 10%, 5%, and 1% levels, respectively.

coefficients is statistically significant.¹⁸

The single equation regression in Table 4.1 hides significant heterogeneity in the sample of EMEs considered. Individual country-level relationships between sectoral net lending and output in Figure 3 show substantial variation across countries.¹⁹ In panel (a), the coefficient on the current account balance is positive in Brazil, Russia, and China, but negative in Mexico, Turkey, and South Africa. The coefficients are statistically insignificant for a majority of countries, consistent with the statistically insignificant panel result in Table 4.1. An increase in the current account balance is negatively associated with output in Mexico, Turkey and South Africa, suggesting the importance of domestic demand. Similarly,

¹⁸We do not include year fixed effects in the baseline specifications, thereby allowing common global trends to influence sectoral balances, since institutional sectors are closely intertwined globally. The regressions with year fixed effects are presented in the appendix in Table A.2. Most of the results remain the same, except for the negative coefficients on the corporate balance.

¹⁹The country-level figures omit the country fixed effects in the single equation regression and estimate the time-series regression for each country: $y_t = \beta_0 + \beta_1 \frac{NL_t^j}{GDP_t} + \sum_{p=1}^3 \gamma_p y_{t-p} + \epsilon_t$, where β_0 is a constant.

the coefficients on both household and corporate net lending are negative in many countries, although a majority are statistically insignificant, consistent with the aggregate results. By contrast, the coefficients on government net lending are consistently positive across countries, and a majority are statistically significant, consistent with the aggregate result in Table 4.1. The individual country analysis shows that an increase in corporate net lending, or equivalently a reduction in corporate net borrowing, is negatively associated with output in many EMEs. The statistically significant negative relationship between corporate net lending and output in Turkey, Brazil, and Russia suggests an important role for investment spending and non-financial corporate borrowing. These results are consistent with the investment-led demand regime suggested by Mertens et al. (2022). According to the individual-country regressions, for countries with persistent current account deficits such as Mexico, South Africa and Turkey, an improvement in the current account balance—or equivalently, a reduction in net external borrowing—is negatively associated with output. This pattern is consistent with domestic-demand-led growth accompanied by a deterioration in the current account. The negative coefficient on household net lending in Turkey and South Africa is consistent with a household-debt-led demand regime in these economies. Contemporaneously, an improvement in the government budget balance is positively associated with output, and the coefficient is statistically significant in most EMEs, as shown in panel (b).

4.2 Local Projections

Next, we estimate the *dynamic* response of output to changes in sectoral balances using local projections (Jordà, 2005). They are used to examine how an increase in sectoral net lending, interpreted as a greater leakage of demand from that sector, is associated with output over the medium-run horizon:

$$y_{it+h} = \beta_{ih} + \beta_h^j \frac{NL_{it}^j}{GDP_{it}} + \delta'_h \mathbf{Z}_{it} + \sum_{p=1}^3 \gamma_{ph} y_{it-p} + \epsilon_{it+h}, \quad (6)$$

where β_{ih} is the country fixed effect for each time horizon, h , which is set from $h = 1$ to $h = 10$, and β_h^j captures the relationship between the net lending balance of sector j and output at horizon h . The sectoral net lending/borrowing balances are normalized by nominal GDP. The vector $\mathbf{Z}_{it}$ contains the contemporaneous net lending balances of the other institutional sectors, each normalized by nominal GDP.²⁰ The specification also controls for

²⁰Log changes and ratios are multiplied by 100 to report results in percentage terms.

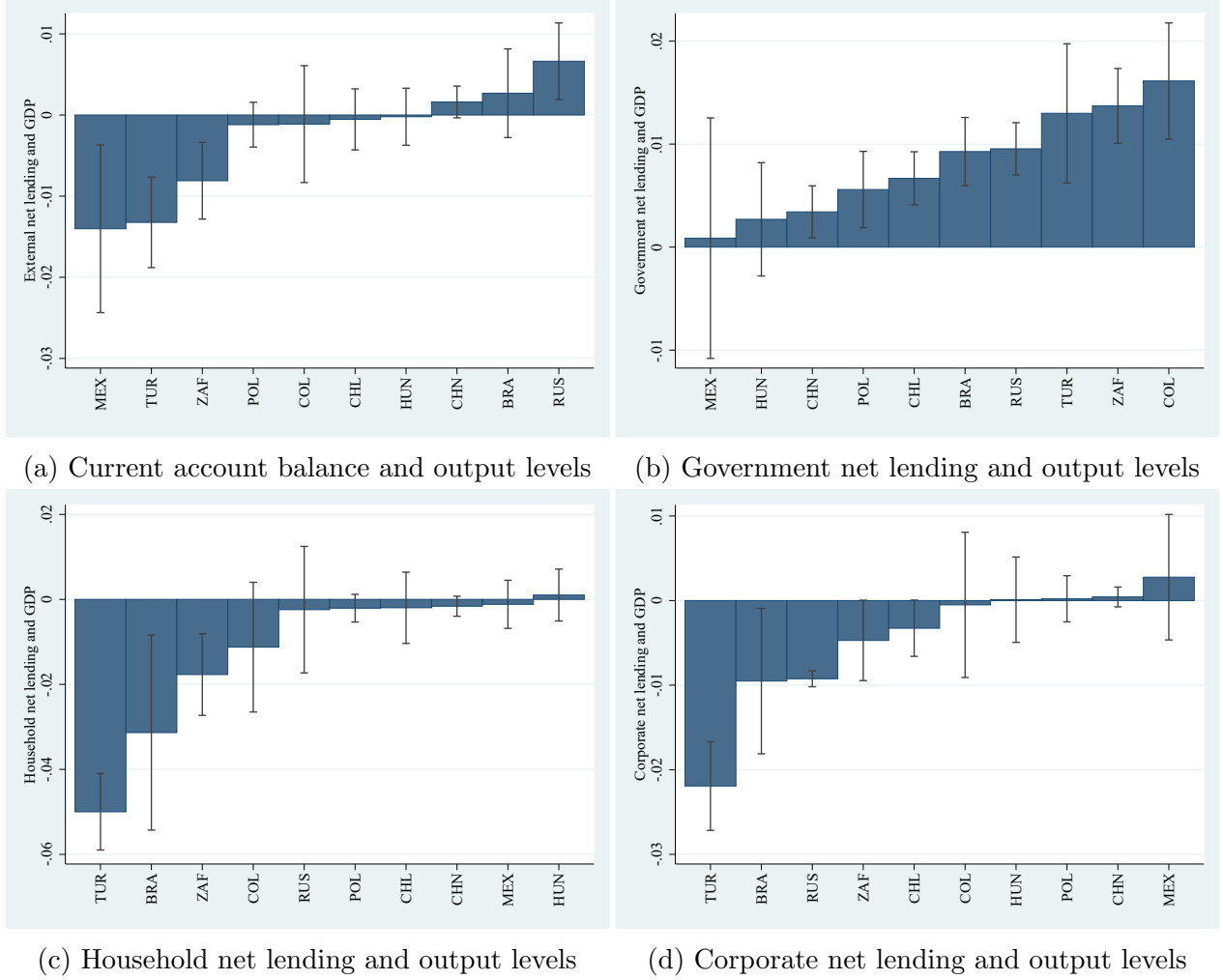


Figure 3: Sectoral balances and output levels across EMEs

three lags of output, with p indexing the lags.

The local projection specification in Equation 6 estimates the relationship between sectoral net lending and future output at each horizon while controlling for lagged output and the contemporaneous balances of the other institutional sectors. It is therefore the dynamic analogue of Column 7 in Table 4.1. In this way, one can examine the dynamic relationship between sectoral net lending and output over the specified horizon.²¹ Since, by definition, one sector's borrowing is another sector's lending and the net lending/borrowing positions of institutional sectors are interdependent, an increase in a sector's net lending represents a greater leakage of demand from that sector.²² Figure 4 plots the impulse response functions

²¹We do not include year fixed effects in the baseline specification, thereby allowing common global trends to influence sectoral balances. For comparison, the impulse responses with year fixed effects are presented in Appendix A.3, Figure 6.

²²An increase in the sectoral balance corresponds to an increase in that sector's saving relative to invest-

(IRFs) showing the change in output level due to a change in sectoral net lending/borrowing.

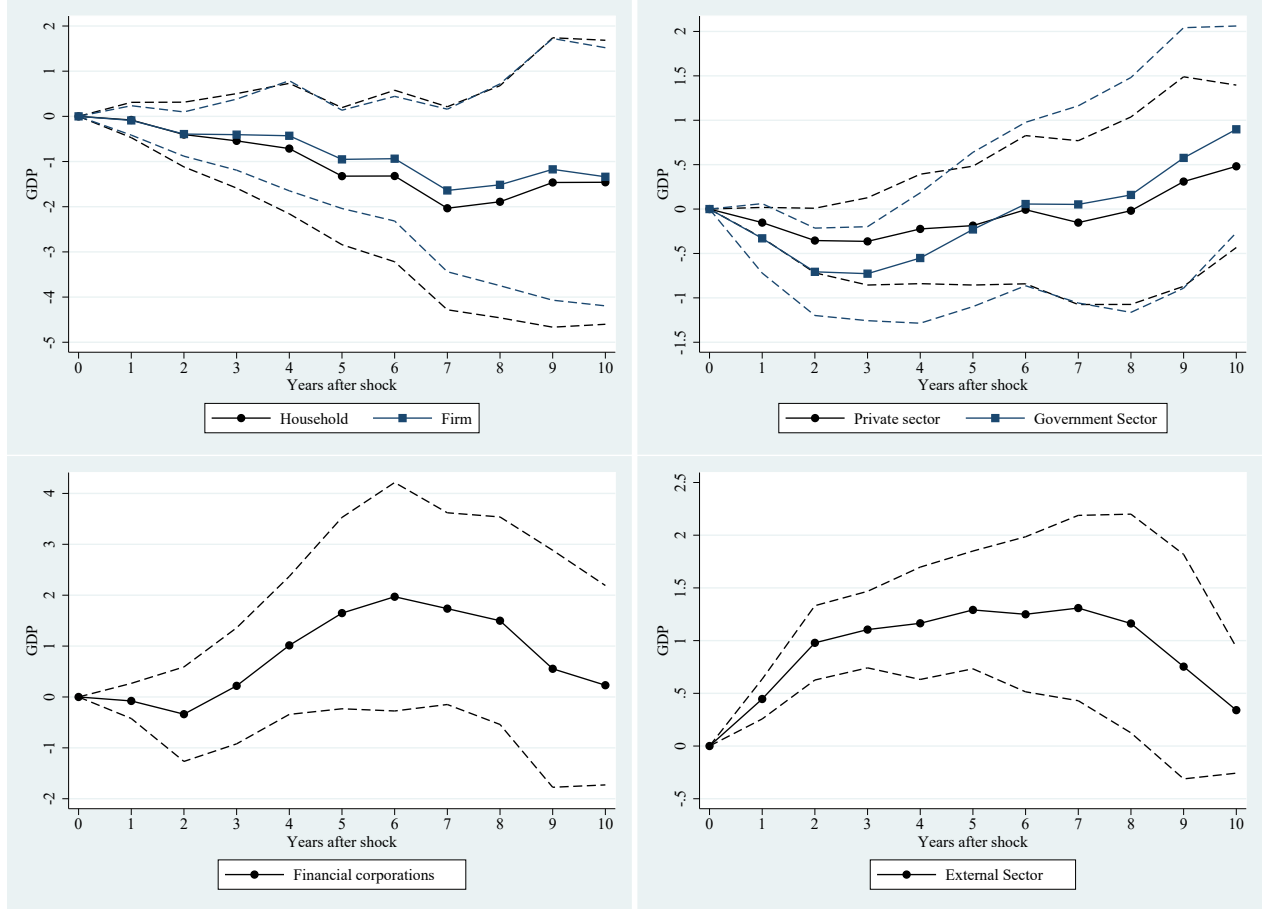


Figure 4: Local Projections of sectoral balances

The impulse response results highlight several important patterns in EMEs. First, a one-percentage-point increase in household or corporate net lending is not statistically significantly associated with output over the horizon. This finding does not provide support for the view that household saving is an important constraint on output in EMEs. Second, a one-percentage-point improvement in the current account balance is associated with a persistent increase in output, reaching approximately 1.3% after five years. This suggests an important role for the external sector in shaping output dynamics in EMEs. Third, an increase in net lending by the government sector is negatively associated with output levels between years 1 and 4. A one-percentage-point increase in government net lending is associated with a decline in output of approximately 0.7% after three years. This is in contrast with the contemporaneous positive association between government sector net lending and output shown in Table 4.1. Finally, financial corporation net lending is not statistically significantly associated with output over the horizon.

ciated with output over the horizon. Taken together, the results highlight the importance of the external sector for medium-run output dynamics in EMEs, consistent with an important role for external demand in these economies, while also showing that greater government net borrowing is associated with higher output over the early horizons.

5 Discussion

The analysis in Figure 4 shows the importance of the external sector for EMEs, as an improvement in the current account balance is associated with a persistent increase in output. This finding is consistent with structuralist accounts that emphasize the external constraints facing EMEs as well as recent contributions to the growth model approach in EMEs, especially the SSM decomposition, which accords a central role to autonomous exports in the growth of EMEs (Campana et al., 2024). Many EMEs face technological constraints that limit their ability to diversify exports and move toward higher-value-added production. Moreover, their position in the international monetary hierarchy can constrain their ability to borrow internationally in domestic currency. Many EMEs therefore depend on capital inflows to finance imports and sustain current account deficits, leaving them vulnerable to volatility in international capital flows (Caldentey and Vernengo, 2022, p.259). For EMEs occupying lower positions in global value chains and relying heavily on commodity exports, these constraints can contribute to boom-bust cycles. A possible underlying mechanism is the commodity-finance nexus, whereby periods of rising commodity prices and exports are accompanied by capital inflows that can eventually contribute to a bust through changes in external financing conditions (Schedelik et al., 2021, p.524).

The importance of the external sector seen in the results is also consistent with the structuralist claim that the external sector provides opportunities for growth while also creating significant vulnerabilities. Rather than the conventional twin-deficit hypothesis in which public deficits drive current account deficits, Ocampo et al. (2009) emphasize the reverse direction of influence, whereby changes in the external balance shape private economic activity and the government balance. The positive co-movement between the current account and domestic sectoral balances shown in Figure 2 is consistent with this interpretation. Examples of this pattern can be seen in Brazil and Russia. In Brazil, a decline in exports after the 2008 Global Financial Crisis was followed by a decline in private economic activity and government expenditure. In Russia, a decline in commodity prices led to a fall in exports and eventually government spending, as the Russian government chose to maintain a current

account surplus due to geopolitical considerations ([Campana et al., 2024](#), p. 34).

In this regard, models and mechanisms which emphasize the external sector, such as the balance-of-payments-constrained growth model or the export-led growth model, provide useful benchmarks for demand-led growth in EMEs ([Thirlwall, 1979](#); [Blecker, 2022](#)). The importance of the external sector for EMEs as a whole seen in the local projections does not imply that domestic demand does not matter or that it passively adjusts to external demand across all EMEs. Our results suggest an important role for the government sector. As shown in [Table 4.1](#), there is some evidence of a positive contemporaneous relationship between government net lending and output. However, the relationship changes when we extend the time horizon. In the local projection analysis, an increase in government net lending is associated with a decrease in output over the early horizons. In other words, to the extent that greater government net borrowing reflects higher government expenditure, the results are consistent with higher government expenditure being associated with higher subsequent output. Our results are consistent with an important role for fiscal demand in output dynamics. More broadly, these findings highlight the importance of distinguishing the contemporaneous relationship between sectoral balances and output from their dynamic relationship over time.

The country-level results provide further evidence of different domestic sources of demand. Corporate net lending is negatively associated with output in several EMEs, with statistically significant negative coefficients in Turkey, Brazil, and Russia. Household net lending is also negatively associated with output in several countries, with statistically significant negative coefficients in Turkey, Brazil, and South Africa. These country-level results suggest that household and corporate borrowing can be important sources of domestic demand in particular EMEs, even though these relationships are not statistically significant for the sample as a whole.

6 Conclusion

This article investigates the institutional sources of aggregate demand in emerging market economies (EMEs) and their relationship with output dynamics. Using sectoral balances and local projections, we examine the dynamic relationship between institutional-sector net lending and output. In doing so, the article sheds light on the sources of demand underlying growth models in EMEs and contributes to the growth model approach.

Our results provide some evidence of a positive contemporaneous relationship between government net lending and output. However, the relationship changes once we extend the time horizon. In the local projections, greater government net lending is associated with lower output over the early horizons. To the extent that greater government net borrowing reflects higher government expenditure, this result is consistent with an important role for fiscal demand in supporting output in EMEs. In this sense, the finding is also consistent with the idea of state-led growth in EMEs ([Stockhammer, 2022](#); [Caldentey and Vernengo, 2022](#)).

Our results suggest that the external sector is the most prominent source of aggregate demand for EMEs. An improvement in the current account balance is associated with a persistent increase in output, suggesting that the external sector is particularly important for medium-run output dynamics in EMEs. This finding suggests that approaches emphasizing export-led growth and external constraints provide useful benchmarks for understanding growth models in EMEs. The contribution of external-sector-led growth to long-term development, however, depends on the management of external finance and on whether export growth contributes to industrial upgrading and structural transformation ([Porcile and Yajima, 2019](#); [Stockhammer, 2022](#)).

The importance of the external sector for the sample as a whole should not obscure considerable heterogeneity across EMEs. The country-level results suggest that household and corporate borrowing can be important sources of domestic demand in a number of countries, even though these relationships are not statistically significant for the sample as a whole. Taken together, these findings suggest that growth models in EMEs cannot be understood from a single source of demand: the external sector plays a prominent role at the aggregate level, fiscal demand matters dynamically, and the importance of private-sector borrowing varies considerably across countries.

A Appendix

A.1 Sectoral balances for individual countries



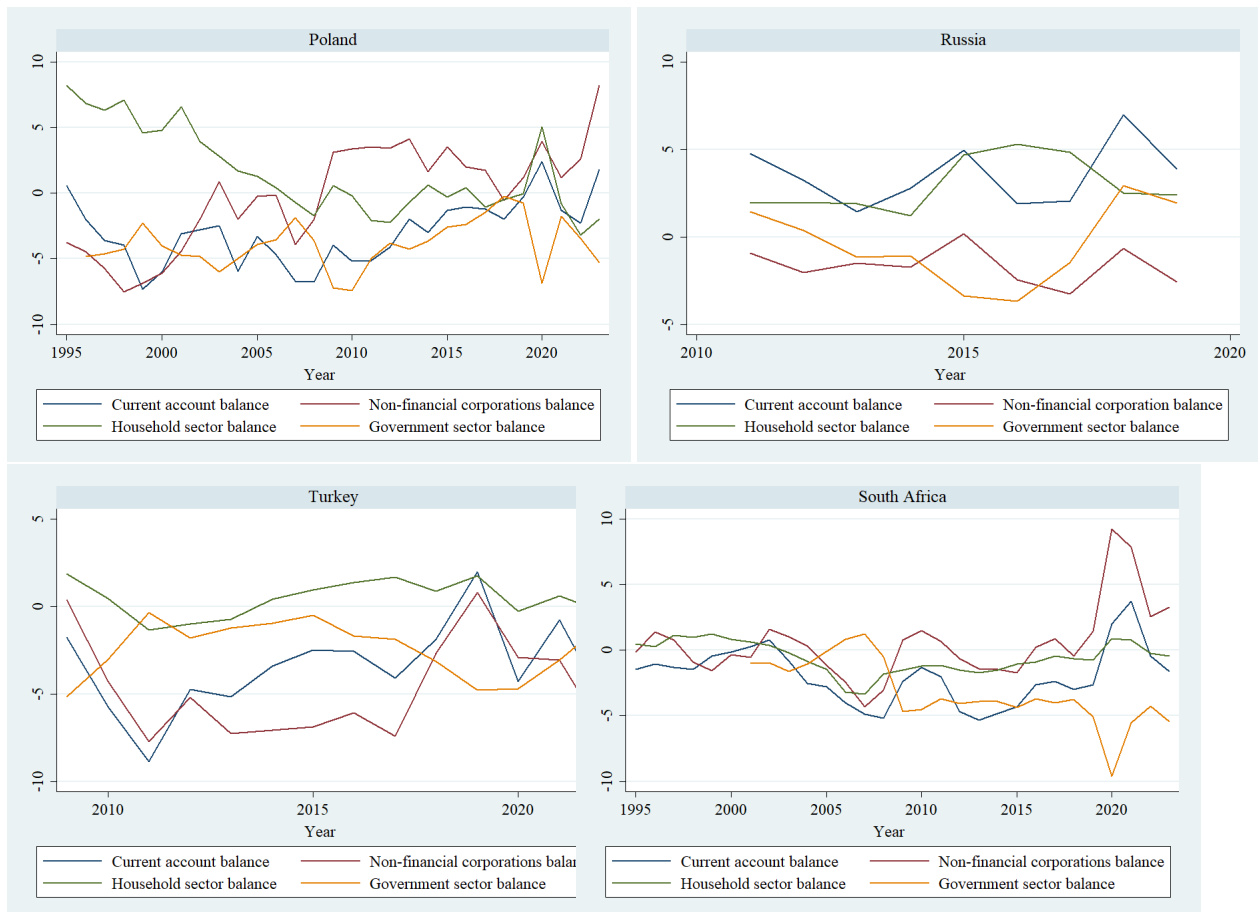


Figure 5: Evolution of sectoral balances in individual countries

A.2 Sectoral Balance Correlations

Table A.1: Individual country sectoral balance correlations

Country	X-G	X-NFC	X-HH	FC-NFC	FC-HH	G-NFC
BRA	0.11	0.49*	0.47*	-0.02	0.40*	-0.74***
CHL	0.23	0.50*	-0.19	-0.49*	-0.57*	-0.42*
CHN	0.30	0.38*	-0.11	-0.67***	0.41*	-0.30
COL	0.22	0.78***	0.79***	0.44*	0.64**	-0.05
HUN	0.65***	0.79***	0.44*	-0.50*	0.26	0.36*
MEX	-0.47**	0.49*	-0.44*	-0.75***	0.57*	0.62*
POL	0.09	0.218	0.14	0.14	0.12	-0.06
RUS	0.50*	0.65	-0.01	-0.31	-0.10	-0.02
ZAF	-0.31	0.80***	0.83***	-0.28	-0.09	-0.40*
TUR	-0.78***	0.54	0.83**	0.19	0.79*	-0.96***

Note: *** : $p < 0.01$, ** : $p < 0.05$, * : $p < 0.10$. X: External sector, G: Government sector, HH: Households, NFC: Non-Financial corporations, FC: Financial corporations

A.3 Panel Regression and Local Projections with Year Fixed Effects

In this section, we report the panel regression and local projection results with year fixed effects (Table A.2 and Figure 6). The main difference from the results in Table 4.1 is that the corporate sector balance has a negative and statistically significant coefficient in a number of specifications. This indicates that an increase in corporate sector net lending is associated with lower output in the short run when controlling for common global trends.

Figure 6 shows the local projection results with year fixed effects. The main difference from the baseline results is that financial corporation net lending is positively and statistically significantly associated with output between years 4 and 7. A one-percentage-point increase in financial corporation net lending is associated with an increase in output of more than 4% in year 6.

Table A.2: Single equation for sectoral net lending with year fixed effects

	Dependent variable: y_{it}						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Private sector balance	-0.0183						
Household sector balance		0.0128		-0.00552 (0.0139)	-0.000152 (0.000708)	-0.000341 (0.000722)	0.0000691 (0.00111)
Corporate sector balance			-0.0219	-0.0236** (0.00969)	-0.000967 (0.000628)	-0.00124 (0.000678)	-0.000881 (0.00112)
Government sector balance						0.00207* (0.00102)	0.00246 (0.00208)
Current account balance							-0.000483 (0.00165)
Country fixed effects	✓	✓	✓	✓	✓	✓	✓
Time Fixed Effects	✓	✓	✓	✓	✓	✓	✓
Distributed lag in y					✓	✓	✓
Test for equality of β_{HH} and β_F , p-value				.397	0.083	0.208	0.166
R^2	0.996	0.995	0.997	0.996	1.000	1.000	1.000
Observations	175	175	177	175	175	166	166

The table reports contemporaneous regressions of log real GDP, y_{it} , on private, household, non-financial corporate and government sector balances and the current account balance, expressed as shares of GDP. Columns (5)-(7) control for three lags of GDP. All specifications include country and year fixed effects. Standard errors are in parentheses and are clustered on country and year. *, **, *** indicate significance at 10%, 5%, and 1% levels, respectively.

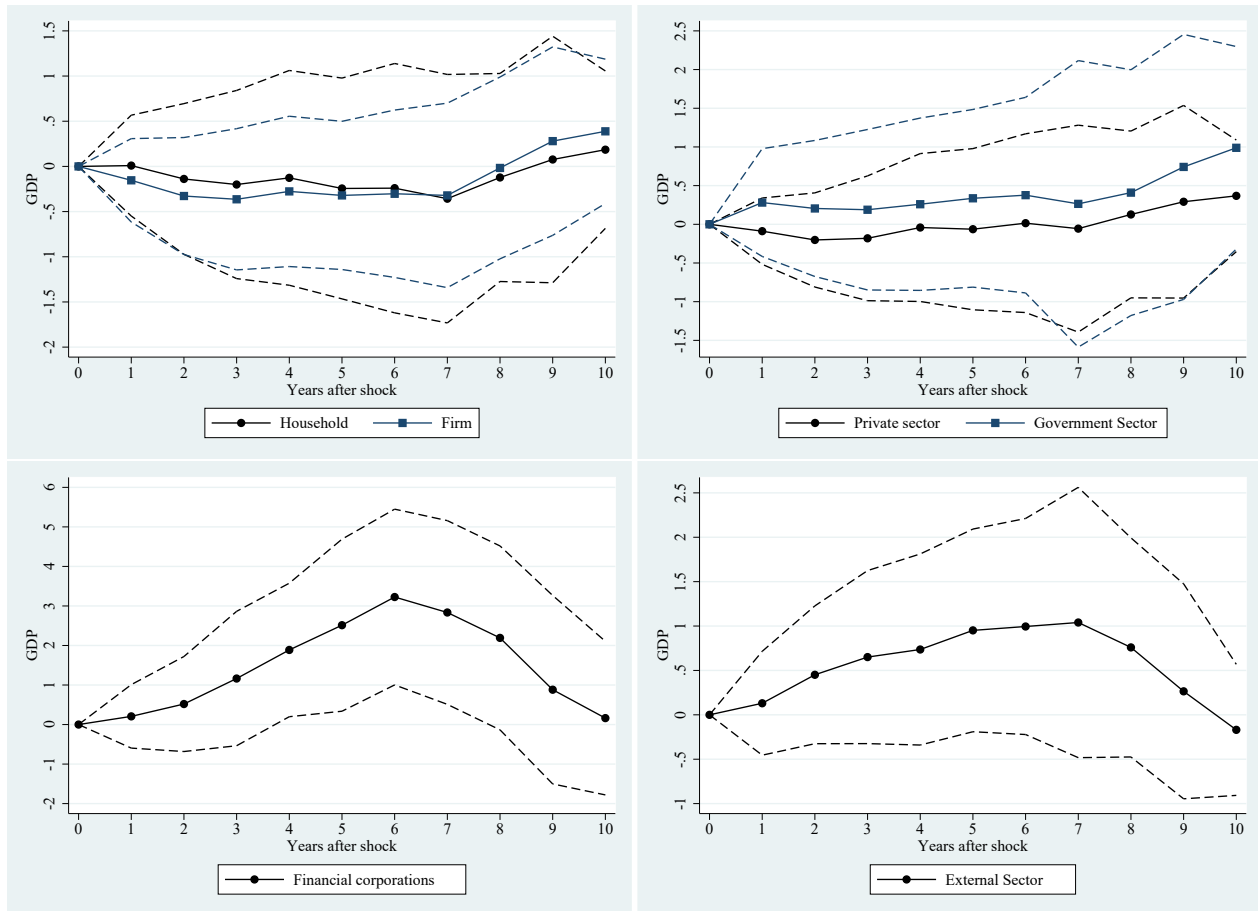


Figure 6: Local projections of sectoral balances with year fixed effects

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