

Value extraction, crowding out, and instability of the financial sector on Colombian productive development

Extração de valor, crowding out e instabilidade do setor financeiro no desenvolvimento produtivo colombiano

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RESUMO: Este trabalho mostra como, no cenário da financeirização global, materializou-se na Colômbia um modelo econômico no qual as finanças extraem valor, criam instabilidade e causam um efeito de deslocamento no desenvolvimento produtivo representado aqui pelo setor industrial. Isto ficou evidente a partir das reformas focadas no livre mercado na década de 1990. Com o objetivo de explicar este processo, o trabalho recorre à teoria heterodoxa e verifica empiricamente as hipóteses criando variáveis que representam os fenômenos propostos, expondo-os através de uma análise descritiva e um modelo VARX. **PALAVRAS-CHAVE:** Instabilidade financeira; extração de valor; efeito de deslocamento; financeirização; economia do desenvolvimento.

ABSTRACT: This research aims to illustrate how, under the scenario of global financialization, Colombia's productive model changed and now is led by finance which extracted value, creating instability, and provoking a crowding out effect on real sector embodied here by the manufacture share of GDP. The above became evident in the 1990s thanks to free-market reforms implemented. The research uses heterodox theory to empirically verify the hypotheses by creating variables representing the proposed phenomena and exposing them through descriptive analysis and a VARX model.

KEYWORDS: Financial instability; value extraction; crowding out; financialization; developing economics.

JEL Classification: B26; D46; E12; F65; O14.

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INTRODUCTION

While the present document is being written, humanity seems to overcome a pandemic caused by a respiratory virus named COVID-19, which, has claimed nearly five million lives. Several measures were implemented to prevent the transmission, being the strongest a ban on people's mobility and interaction. The action fulfilled its purpose, but one of its side effects was an interruption in the production, distribution, and consumption circuit, which sparked severe contractions in the gross domestic product and employment losses. For example, in the United States, 15,000,000 jobs were simultaneously lost, along with a substantial decline in commercial and industrial activity (ILO, 2020).

For Latin America, the situation appears to be more complex as nearly 34 percent of the formal employment and 24 percent of the GDP, were severely affected (Cepal, 2020). Colombia was one of the countries with the worst results, where unemployment rose to 23.5 percent, according to the Departamento Nacional de Estadística (DANE). The above was due to, national shutdowns that exacerbated old ills in the region such as income inequality, informality, structural heterogeneity, or the extremely heavy dependence on commodities.

In that direction, at a global, regional, and Colombian level, an endemic-specific problem, the hegemony of finances upon the real sector, has been accentuated in the economy since the 1970s. For instance, shortly after the quarantines were declared, the Standard and Poor's 500 (S&P500) index in the New York Stock Exchange dropped dramatically by 55 percent. A few weeks later, Bitcoin, the famous cryptocurrency, fell by 64 percent, an event well-capitalized by the great speculators, who captured the bargain with good liquidity. After this fall, a splendid rebound effect made the S&P500 rose to 108 percent from March of 2019 to August of 2021, and the Bitcoin rose to 1.500 percent, up to its historical high in April of 2021. For Colombia, the financial sector also clearly took advantage of the crisis, which was reflected in the national accounts data that yield it as the net winner of the situation, while the rest of the sectors pale.

It deals with a phenomenon that some authors have called financialization (Epstein, 2016), which will be evaluated in this document through concepts such as the value extraction and the crowding out of the financial sector over the real sector, along with the inherent instability that this sector brings to the rest of the system. Specifically, this work aims to evaluate the incidence of these three concepts on the productive development in Colombia since 1990, the year in which the country strongly started to embrace free-market policies based on the well-known Washington Consensus. From a theoretical, historical and applied point of view, this work makes several contributions, which intertwine across each section.

The early 1990s, for example, brought a clear crowding out from the financial sector on the industry and agriculture. Another finding is that the exogenous factors, measured through the capital flows and market power that the financial sector has fixing a high intermediation gap, intertwine to enhance the decline of Colombian productive apparatus in favor of the rent-seeking activities.

This document is presented as follows: after this introduction, a context where the hegemony of finances has developed from the theoretical, political, and economic fields is shown. The following section underlines the importance of productive development policies and presents background related to the papers' topic in Colombia. Then, an applied section illustrates a descriptive analysis and a vector autoregressive model with exogenous variables (VARX). Moreover, some proxy variables for the three previously exposed concepts were also found in this section. Finally, some conclusions are presented.

FIFTY YEARS OF FINANCE HEGEMONY

The essential role of the financial sector in the expansive dynamic of the capitalist system is evident since the production and interchange process needs money and financing first (Lavoie & Seccareccia, 2016; Lorente, 2020; Marx, 2014). Even the most conservative and pre-capitalist views¹ that take money and finance as passive instruments of intermediation admit their potential in the growth boost (De Gregorio & Guidotti, 1995).

This section argues that in a global scenario since 1970 the role of finance in the economy has changed, becoming more a burden than a driver of productive activity.

What is financed by the financial sector?

Contributions from the financial to the real sector may occur in various forms: First, by financing investment and innovation when the businessman requests the credit, and the bank makes the deposit so this new purchasing power can separate means of production and start the circuit {Formatting Citation}. The second, when the new credit puts new means of payment into circulation, which turn into a demand for goods and services, a positive variation, or acceleration, increase the aggregate demand, thereby, growth and employment (Cynamon & Fazzari, 2013; Keen, 2014, 2017, 2018). The third, by allowing investors to be above the withholding margin of businesses, covering the gap between income and expenditure that may result from the business cycle, and supporting the maintenance of inventories produced but not sold (Lorente, 2020). Fourth, by increasing liquidity and creating innovative financial products that reduce the idiosyncratic and systematic risk, which facilitate the market functioning, allowing them to be completed with the creation of asset insurances and the establishment of contracts, reducing the transaction costs and the problems of adverse selection.

Nevertheless, since the 1970s, the financial sector has gained such importance

¹ It is understood as pre-capitalist because money and finance are introduced as an exogenous element in a pure exchange scheme.

that does not correspond to the performance of the real sector. It is a process where their influence has seemingly been oversized, to the point of threatening and curbing the system that it must supposedly boost.

In this regard, we are engaged in a predominant finance phase, and several features characterized its rise. In the first place, before 1970, the financial sector was regulated due to its privilege as the creator of means of payment, in other words, money. That is why profits extracted from the placement of credits were regarded as public resources belonging to the sovereign that issues the currency, also known as seigniorage. On the contrary, from the 1970s, a discourse that gave an image of the financial sector as an intermediary was imposed, justifying the elimination of most previous regulations. Banking services were taken as intermediation costs that were transferred to users in higher fees and interests. As a result, profit margins for this sector soared through the creation of new income sources and enhancing the capture of seigniorage through the increase of credit, which enabled the creation of multiple tenure layers; that is to say, to create several floors of assets supported on an initial credit (Lorente, 2020).

In the second place, restrictions and regulations were removed to the sector, such as separating investment from commercial banking, the scope of derivatives and futures, leading role to public banking, credit policies aimed at the real sector, or conservative pension funds management.

In third place, it is also clear that there was a turning point in the macroeconomic policy in the seeking of full employment led by demand, to fiscal and monetary conservatism with an obsession for the inflation control (Mitchell & Muysken, 2008), that exacerbated employment issues and greatly favored financial income, which increased its real profit rate, allowing bond and equity markets get off the ground (Betz, 2015; Ferguson, 2008).

In fourth place, as soon as the financial sector privatized the issue of the US dollar, the hegemony of finance has globally been expanded (Hodgson, 2012). This process was theoretically validated due to the need for diversifying portfolios to raise profitability, reduce risk (Markowitz, 1952) and ensure a higher turnover of assets that generates revenues from the spreads between transactions by the exchange of national currencies. That is why that only in the early 1970s, the international monetary agreement of Bretton Woods was broken, and currencies were subject to greater volatility (Moosa, 2005), broadening gaps of intermediation and financial profitability, which multiply thanks to a leveraging mechanism and the expansion of derivative markets. This has brought to developing countries increasing real and nominal instability.

Similarly, the globalization of the financial hegemony was palpable through the development of the bond market, which materialized with the placement of debt issued in dollars in the emerging markets, particularly in Latin America. Unlike the commonly accepted version that has its origin in the transfer of real resources from commercially surplus countries to deficit ones (Marichal, 2010), emerging economies lived an episode where the resources placed in these countries were the result of interests to expand the financial business beyond the United States borders (Borio

& Disyatat, 2015), given the increasing likelihood of expanding the credit and the means of payment to a meager cost from the US private bank that could issue the dollar. This fourth feature of the hegemony of finance was to be particularly sensitive for Latin America as the volatility of the rate of exchange and the growing indebtedness of the 1970s, which led to the so-called lost decade, and underwent severe consequences in the macroeconomic management of the region. It also impacted the productive development policies by imposing austerity measures and changing industrial and commercial policies toward liberalization, altering growth rate, job creation, and innovation (Cimoli & Porcile, 2011; Frenkel, 2014).

Value extraction, crowding out, and instability

The hegemony of finances has brought three critical problems to the productive global system: value extraction, crowding out, and instability. Value extraction deals with the financial sector's capability to take the aggregate product from other sectors via higher fees and prices for its services. This is done by creating wider gaps in intermediation, exercising its monopoly power in creating means of payment, and establishing high charges in relation with risks when managing assets in investment funds (Mazzucato, 2019). This may be seen when raising the credit cost to the usury ceiling, taking short- or long-term positions with loaned assets, or leveraging financial operations multiplying speculation with money created by the financial system itself through credit. Then, there is no income distribution among sectors that create social production but a redistribution via prices (Hamouda, 2016).

Crowding out is a concept that comes from the new classical theory, and it assumes that in the long-run economy would be under full employment conditions. Therefore, a higher level of expenditure, from the public sector, for example, reduces private investment expenditure by adjusting prices. In the proposed example, this would happen through the interest rate. However, the view of crowding out presented here is quite different, as in a monetary economy of production (Keynes, 2006), the private and public investment expenditures, or investment and consumption, can increase in the same direction and the same period, thanks to the credit enhancement that creates means of payment independent from the restriction of real resources. Thus, the crowding out from the financial to the productive sector is evidenced in the persistent increase of the sector's participation in the economy, either because it independently grows faster than the others or because it grows at the expense of others, or a mixture of both. This occurs through several mechanisms.

The first one is that amid a deregulate system, the possibility of creating multiple layers of assets, fueled by more significant levels of credit from the same financial system, brings about a constant inflation in the financial products that result in exorbitant earnings as it deals with the repurchase of assets already existing. This is what Mazzucato (2019) calls the withdrawal of the patient investor, and, in his place, the speculator's conduct, typical in a gambling casino, has positioned (Keynes, 2006; Minsky, 1986). In practice, this has caused the financial

sector to grow independently from the real one, greatly outweighing its size in proportion one by one (Lorente, 2020; Turner, 2016).

The second one is that this speculation process diverts real resources and human talent, which otherwise would dedicate to stimulating productive activities. This may be compared with the distortion in the conduct of the economic agents start valuing more the short-term incomes, putting aside productive and innovative activities, which require patience, since their results must be seen in the long-term. It goes from a model of retaining and investing to one of rotating and distributing (Mazzucato, 2019). For instance, the most recent financial innovation, the market of the cryptocurrencies, divert enormous resources in the process of the mining industry through power consumption, the high demand for video cards and other computing items, as well as the participation of talented engineers and physicists to the service of this new, profitable, and highly volatile financial product.

The third one is that: as new layers of financial intermediation emerge; the successive commissions are accumulating an income redistribution occurs from homes and companies toward the financial sector (Lorente, 2020, p. 362). It causes an aggregate demand problem, due to the income concentration, affecting consumption volumes of homes and productive investment of companies (Cynamon & Fazzari, 2013; Lavoie & Stockhammer, 2013).

The fourth one occurs when implementing the model of maximization value for the shareholder. Companies allocate their profits to remunerate shareholders using dividends or through the repurchase of shares that inflate their price. This generates a reduction in the available resources for the productive investments, aggravated by the fact that to compensate for this lack of own funding, companies appeal to indebtedness. The above eventually drains an additional part of profits; that is to say, companies in the long-term end up reducing their investment and innovation with consequences in productivity and individual and aggregate growth.

Financial instability is Minsky's (1986, 1992, 2008) central thesis, which shows that the financial markets are inherently unstable as, endogenously, during the boom phase, the economic agents with income streams over their expenditures are tempted to take debt to make additional expenditures. But the over-indebtedness accumulated during several periods engender the seed of the crisis; when the balance sheets of the indebted agents begin to collapse, the financial system restrict the access to the credit, prompting a fall in the aggregate demand, employment, and a deflation of prices due to the sale of assets, which aims to cover agents' commitments. That is why Minsky (1986, 1992, 2008) recommends a strict regulation of the financial market and an intervention to avoid the indebtedness periods.

Lorente (2020) also argues that financial instability is endogenous. But he says that it comes from the conduct of portfolio managers, who attempt to attract funds by creating financial products to circumvent regulation and allow reaching extraordinary performances. However, this process needs to create valuations of assets that depend on credit growth and higher layers of intermediation in the secondary markets, until continuing with this movement becomes unfeasible.

THE EUTHANASIA OF THE PRODUCTIVE DEVELOPMENT

Value extracting, crowding out and instability, hereafter VCI, resulting from the expansion of the financial sector as a global phenomenon that has indeed impacted the productive development of countries like Colombia. The hegemony of finances seems to contradict a fundamental principle of the economic success of nations, which has consisted of reaching a high complexity and sophistication level of what is produced (Reinert, 2018), now those characteristics belong to the financial assets and financial innovations², but with the adverse consequences mentioned in the previous section.

From this work, it is consequently assumed that what is produced counts; that is to say, the composition of production, called by Giovanni Botero and Antonio Serra hierarchy of goods (Reinert, 2018). The above determines the greater possibilities of growth, innovations, improvement in terms of exchange and employment creation. For example, Hausmann et al. (2014) and Hidalgo et al. (2007) highlight that the countries succeeding in incorporating tacit and implicit knowledge in production are those that reach the highest hierarchy frontier, understood as complexity and sophistication, when producing goods and services.

This idea of hierarchy in production and its incidence in macroeconomic outcomes will be denominated productive development, and it will be captured by the deepening of the industrialization process measured by the sector's participation in the GDP. Kaldor's laws on economic growth support the idea that for developing countries, the deepening of industrialization is a synonym of productive development. Kaldor's three laws recognize that industry is not only the engine of growth as a whole, but it also drags the productivity of the rest of the economy and the sector itself, besides absorbing workforce of the informal sector through the creation of jobs, and not because of the flexibilization of wages (Kaldor, 1967; Thirlwall, 2013).

However, the productive development of the Colombian economy has been threatened by the hegemony of finances locally and globally. At a local level, the value extracting and crowding out, as described in the previous section, may occur, whereas, at a global level, it is expected that the growing pressure for diversifying portfolios, creating financial innovations, and intensifying the rotation on secondary financial assets market, exert on national authorities a force which can enable the liberalization of capital, strengthening financial flows among frontiers.

The inflow and outflow of capital are usually too big in comparison with the host economy, generating serious nominal and real instability, for example, generating deindustrialization, inflation of assets, pro-cyclical developments of private and public expenditure, and the credit (Agosin & Huaita, 2011b; Combata, 2020a, 2020b). In this regard, Professor Hudson comments: "if the benefits of letting the

² While portfolio diversification is highlighted to manage risk and increase long-term profitability. On the other hand, in economics, it is recommended to specialize in the production and export of a good with a comparative advantage.

currency float were minor, the downsides were major: the currency was now subject to rampant manipulation by speculators. The result was a disastrous roller coaster ride, particularly for Third World economies. Today, most currency trades are done purely for speculative profit. Currencies rise or fall depending on quantities traded each day” (Hodgson, 2012, p. 198).

Background literature for Colombia

At the first step, this work will present other papers that analyze the industrial sector’s dynamic in the productive development of a country as strategic and essential to perceive that the recent Colombian track record has been regressive in that regard. Then, it aims to show the literature that addresses the position on the impact of the financial sector, through the interest rate, the external capital flows, and the own dynamic of the sector, upon the productive development in Colombia with particular emphasis on manufacture.

The works by Moncayo (2011), Moreno (2008), Pérez & Ahumada (2015), Quijano & Guevara (2021), Quijano (2019), Syrquin (1987), and Zerda (2016) share the idea on the importance of the industrial sector as a growth engine and job creator for the economy as a whole. This has an impact on the income distribution and the complexity of the productive structure. These papers theoretically and empirically coincide as they show how the free-market reforms, stepped up since the early 1990s of the last century in Colombia, negatively affected the industrial sector, making it backward in terms of aggregate value, employment, and productive sophistication.

On the local side, several papers have shown how the Colombian productive sector is curbed through the rent extraction of the financial sector with high costs of intermediation, tax evasion, benefits derived from the privatization of public companies and the issuance of currency, the restriction of credit mainly on the smallest business and family unit, and, overall, high costs on financial services deriving in minor levels of investment, production, and innovation.

As a result, the financial sector has been able to grow and take better advantage of the cycle recession and boom phases, consolidating an economy of sporadic growth and rent extraction, rather than being supported on a complex productive network, which combines knowledge to perform more sophisticated goods, as being achieved by countries of Southeast Asia (Combata, 2020b; Garay & Espitia, 2019; Sarmiento, 2002; Villabona, 2015).

On the global side, some authors consider that Colombian economies’ deregulations since 1990 had removed restrictions on external capital flows, triggering greater instability and incidence on the economy’s real sector. In fact, several of these authors argue these external financial flows as the cause of the Dutch Disease problem at odds with the traditional vision of (Corden, 1984; Max Corden &

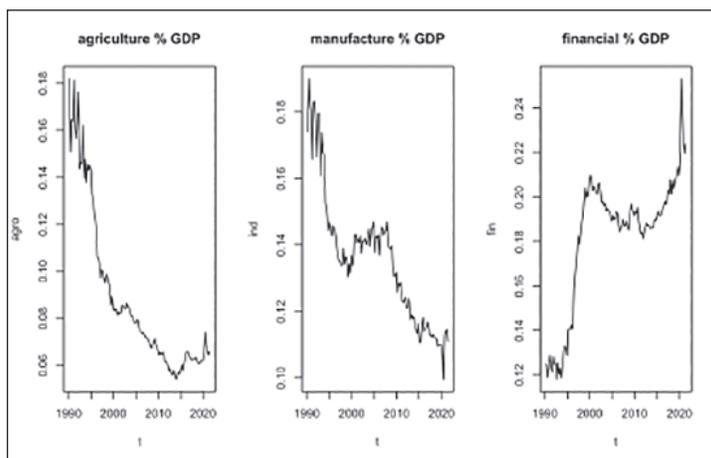
Neary, 1982). This Financial Dutch Disease³ sparked a regression in the productive structure that became visible with the destruction of industry and agriculture (Botta et al., 2014, 2015, 2016; Bresser-Pereira, 2011; Combata, 2020b; Combata & Moreno, 2019; Flóres, 2001; Garcia, 2002; Goda & Torres, 2013, 2015; Misas, 2016; Sarmiento, 2014).

EMPIRICAL ANALYSIS

Misas (2016) shows that the pro-free market reforms that characterized the early 1990s in Colombia manifested themselves in institutional changes in: i. money; ii. salary relations; iii. competition forms; iv. adherence forms to the international regime; and, v. forms of state. As a result, a deregulation in the financial system in several directions occurred, affecting its performance directly and indirectly. Directly, the reforms fell on the interest rate, the credit policy, forced investments, and the monetary policy (Arbelaez & Echavarría, 2001). Indirectly, they dramatically modified the state's role, which was relegated to a simple spectator, while the state revenues were handed over to the private actors.

From the 1990s onwards, the problem of the dominance of finance in Colombia can be seen. Graph 1 shows the value extracting and crowding out problems through the share of GDP's agricultural, industrial, and financial sectors.

Graph 1: Sectorial participation of the agriculture, industry, financial services in Colombia. 1990:1 a 2021:1



Source: (Banco de la República, 2021; Departamento Nacional de Planeación, 2021; Economic Commission for Latin America and the Caribbean, 2021). Own calculation.

³ Financial Dutch Disease goes hand in hand with the speculative exchange rate movements discussed in the previous section, where the price of currencies and their volatility favor financial trading rather than functioning as balance of payments stabilizers or trade policy instruments.

Graph 1 indicates the abrupt fall of industry participation and agriculture in the GDP in the early 1990s, during what may be called a regression decade in Colombian productive development. In contrast, the financial boom is noticeable, with particular emphasis between the years 1995 and 2000. The crowding out became visible in the 1990s, but it appears to persist in the long-term, as industry and agriculture participation loss lead only room to the escalation of finances.

Both the dizzying rise of finances and the stunning fall of industry and agriculture seem not to be the outcome of the natural market forces (Echavarría & Villamizar, 2006), but the result of the deliberate intervention pro-market that triggered the premature deindustrialization (Palma, 2019). The reforms of the systems of health, education, and pensions made the privatization waves skyrocket. Besides, the capture of the seigniorage public resource derived from the possibility of expanding credit to both private and public sectors resulted in substantially benefiting financial income. In fact, Mazzucato (2018) points out that the significant share of the financial sector in the GDP is understood as a process of value extraction because if it actually fulfilled its purpose of pushing the other sectors, such participation would keep up or decline over time.

VARX model

Graph 1 is a good starting point to look at the impact of finance on Colombian productive development. However, a Vector Autoregressive with Exogenous Variable Model (VARX) is estimated to account for the research problem more accurately by including the three categories of VCI analysis. The model separates the exogenous and endogenous nature of the processes studied and incorporates their complexity by capturing the interrelation of the variables among them and over time. For this, a proxy variable for each of the categories of VCI will be presented, and then the VARX is estimated.

VCI's proxies

Following what was made in the previous sections, the deepening of the industrial sector measured in proportion to GDP will be taken as an indicator of productive development. On the other hand, the financial sector's participation in GDP is taken as a proxy of the industry's crowding out of this sector. The two series of sectorial participation are built as ratios of the variables at current prices seasonally adjusted using STATA 15.0, which were taken from (Banco de la República, 2021; Departamento Nacional de Planeación, 2021).

The variable that will measure the value extraction at the local level is the real intermediation gap rates measure as a difference between loan rate and interest rate of deposits. These variables were created after making a link between the historical series of the Banco de la República (2021) and Departamento Nacional de Planeación (2021) following Combata (2020b). Then, the real interest rate, in each case, was calculated with the formula, $r = ((1 + \text{active nominal rate}) / (1 + \text{variation$

Consumer Price Index-CPI)) -1. The quarterly frequency was taken from the value of the last month of each quarter, both for the active rate and the CPI variation.

The indicator to tackle instability caused by the dominance of finances globally in Colombia results from the ratio between the balance of payments financial account over the monetary aggregate M2. This variable created by Agosin & Huaita (2011b) aims to measure the force of the capital flows on the host economy by impacting nominal variables, such as the general level of prices or the exchange rate, and real variables such as the growth rate, the level of employment and productive development through the Financial Dutch Disease. The source of this information was taken from Banco de la República (2021).

Likewise, the three indicators may capture more than one of the characteristics to which they were assigned. For instance, the interest rate, being part of the financing cost, which forms part of the indicator that build authors like Blancas (2007); Combita (2020a); Foley (2003); Pardo (2005) to diagnose the financial instability of the economic agents' balance sheets, along with the profit and accumulation rate. The indicator of instability of external financial accounts can also be seen as a factor of value extraction. The capital flows such as the direct foreign investment or the portfolio investment extract resources and produce enormous demands for dollars to cover the repatriation of profits from multinational companies and the payment of interests and dividends, respectively Kregel (2004) J. A. Ocampo (2013). Similarly, the variable taken for the crowding out reflects the income of the financial sector, both in intermediation and creation of new products, which can be seen as elements of instability and value extraction. These interrelations between VCI's factors will be state by VARX equations and its lags, that's one of the main points to embrace this methodology.

VARX model

Therefore, once the proposed methodology is considered legitimate to study the phenomena of value extraction, crowding out, and instability in Colombia. Proceeding with the estimation of multivariate time series the following step verifies whether the chosen series are stationary employing the unit-root Augmented Dickey-Fuller test (ADF). According to what is seen, (ind) y (fin) are not stationary in their original proportion, while (fm2) and (rint) do not have a unit root indeed.

Once all series are found to be stationary in first difference for theoretical and analytical convenience it is estimated a VAR model with two endogenous variables that are the first difference of the share of the industry and financial sector in the GDP, (dind) and (dfin), together with two exogenous variables also defined in the first difference; they are (drint) and (dfm2).

Table 1: Unit-root Augmented Dickey-Fuller test

Variable	Acronym	Level		First difference	
		ADF t-statistic	Result	ADF t-statistic	Result
Manufacture % GDP	ind	-0,97	Unit root	-13,29	Stationary
Financial % GDP	fin	1.13	Unit root	-9,98	Stationary
Balance of payments financial account %	fm2	-5,12	Stationary	-14,11	Stationary
Real interest intermediation	rint	-1,09	Unit root	-14,05	Stationary

Source: Own elaboration and calculations.

The endogenous variables were selected because if there is greater productive and industrial development, more financing will be needed, so that the profits of the financial sector will grow along with those of the real sector, generating positive feedback. But it should also be remembered that the financial sector can become a burden for the productive sector, generating a setback in economic activity. In this regard, it would be essential to acknowledge by multivariate models of simultaneous equations the endogenous nature of the financial and industrial sectors through the mentioned positive and negative feedbacks among these sectors. It would also be essential to estimate which of the two effects predominates, the positive or the negative ones.

The other two variables, such as the intermediation gap and financial capital flows, are captured as exogenous variables. For example, the interest rate according to Carin & Soskice (2015) and Toporowski (2016) is determined by the financial sector independent of money markets, while capital flows are considered an autonomous variable for a peripheral economy according to Agosin & Huaita (2011; J. Ocampo, 2011).

The period established to obtain robust results was the first quarter of 1997 until the fourth quarter of 2019. The estimation results are illustrated in Table 2. The tests of robustness, represented in the autocorrelation, normality, and homoscedasticity tests, can be seen in detail in the document's annex. Similarly, seven optimal lags were taken, according to the criteria of AIC (Akaike information criterion), SC (Schwarz information criterion), HQ (Hannan-Quinn). The results were estimated by STATA 15.0.

In this regard the estimation equation is:

$$\Gamma_t = \sum_{i=1}^7 \varphi_i \Gamma_{t-i} + \sum_{j=0}^q \phi_j \Lambda_{t-j} + \varepsilon_t \quad (1)$$

Where Γ_t represents endogenous variables set, Λ_{t-j} is the matrix of exogenous variables a t, $i=7, j=0$.

Table 2: VARX results

	Coefficient	Std. Err.	t	[95% Conf. Interval]	
dind	dind Equation				
	Endogenous variable				
L1.	-0,45412	0,10183	-4,46	-0,6537012	-0,25454
L2.	-0,0418	0,110237	-0,38	-0,2578611	0,174259
L3.	0,078136	0,106536	0,73	-0,1306703	0,286942
L4.	0,381004	0,100877	3,78	0,1832885	0,578719
L5.	0,127063	0,106591	1,19	-0,0818518	0,335979
L6.	-0,19463	0,110116	-1,77	-0,410457	0,02119
L7.	-0,21477	0,103461	-2,08	-0,4175531	-0,01199
dfin	Endogenous variable				
L1.	-0,20096	0,087317	-2,3	-0,3720978	-0,02982
L2.	-0,02612	0,081562	-0,32	-0,1859829	0,133734
L3.	0,004164	0,075734	0,05	-0,1442712	0,152599
L4.	0,007893	0,076282	0,1	-0,1416179	0,157403
L5.	-0,0085	0,072316	-0,12	-0,1502407	0,133232
L6.	0,068233	0,076019	0,9	-0,0807604	0,217227
L7.	0,083467	0,07732	1,08	-0,0680778	0,235011
	Exogenous variables				
dfm2	-0,00012	0,006153	-0,02	-0,0121828	0,011937
drint	-0,01038	0,024968	-0,42	-0,0593172	0,038555
	dfin Equation				
dind	Endogenous variable				
L1.	0,064358	0,124194	0,52	-0,1790578	0,307774
L2.	-0,0414	0,134447	-0,31	-0,3049099	0,222114
L3.	-0,0628	0,129933	-0,48	-0,3174611	0,191868
L4.	-0,2372	0,123032	-1,93	-0,4783332	0,003943
L5.	0,025093	0,130001	0,19	-0,2297044	0,279891
L6.	0,293504	0,1343	2,19	0,0302804	0,556727
L7.	-0,02665	0,126184	-0,21	-0,273969	0,220662
	Endogenous variable				
L1.	-0,09384	0,106493	-0,88	-0,3025657	0,114881
L2.	0,120406	0,099475	1,21	-0,0745607	0,315373
L3.	0,007279	0,092366	0,08	-0,1737557	0,188314
L4.	0,0321	0,093036	0,35	-0,1502463	0,214447
L5.	-0,03794	0,088198	-0,43	-0,210807	0,134923
L6.	0,247963	0,092714	2,67	0,066247	0,429679
L7.	0,216399	0,094301	2,29	0,0315724	0,401226
	Exogenous variable				
dfm2	0,006461	0,007504	0,86	-0,0082474	0,021169
drint	-0,00774	0,030451	-0,25	-0,0674188	0,051948

Source: Own elaboration and calculations L: lag number – Std. err.: Standar error – t: t statistic.

Following Loaiza et al. (2017), it may be affirmed that, despite the fact that the VARX model strength is the analysis of the interaction among all variables, it is not relevant to observe the coefficients of regression individually, their significance, and their square root. The results of Table 2 help shed light on the hypothesis value extraction, crowding out, and instability through the signs appearing in the coefficients of regression that identify the impact of the first difference of the two exogenous variables, (dfm2) and (drint), over the first difference of the two endogenous variables, (dind) and (dfin).

The results validate the theoretical hypotheses on the adverse impact of the external capital flows and the financial intermediation gap on Colombian productive development, measured as industry participation in the GDP. It can also be seen that the increase of these exogenous variables in the participation of the financial sector in the GDP are differentiated. On the one hand, the financial capital inflows in the balance of payments, in proportion to M2, raise the sector's relative size. On the other hand, the rise in the intermediation gap has a shrinkage effect on the financial sector, which can be explained because the tolerance gap of the productive sector to the value extraction has already reached maximum limits. Thus, an increase in the monopoly margin, measured in intermediation (drint), would trigger a deterioration in the debtors' balance sheets and, therefore, in the financial business.

The above results must be complemented with the impulse response functions to capture the full explanatory potential of the estimated model through the interaction of the system of equations utilizing its endogenous and exogenous variables.

First, to capture the effect of the endogenous variable of the financial sector's share of GDP on the industry's share of GDP, it is used the cumulative impulse response function of the basic VARX model, which focuses on the interaction dynamics of the endogenous variables without considering the exogenous variables. It allows capturing the cumulative effects that the financial sector may have on the industry over time. Table 3 shows the results in the column labeled scenario 1, where a positive shock in the financial sector generates a negative variation during the following eight periods in the industry's share of GDP. This regressive process coincides with the Colombian experience of crowding out hypotheses since 1990.

Secondly, a methodology of impulse response functions is used employing cumulative dynamic multipliers, which allows collecting the cumulative effects of an impulse in an exogenous variable on the endogenous variables of the VARX model. This case shows the columns of scenarios 2 and 3 at the separate impact of a positive shock in capital flows and the interest rate intermediation gap on industry participation in the GDP. Again, the proposed scenarios confirm an adverse effect of finance on Colombian productive development. In this case, the extraction of value by the intermediation gap and the instability induced by the financial capital flows of the balance of payments is evident. During the eight periods after the shock, the manufacturing sector presents a negative variation that effectively reduces its size.

Table 3: Crowding out, value extraction, and financial instability by impulse-response function

	Impact on manufacture % GDP by		
	endogenous variable	exogenous variable	
	scenario 1	scenario 2	scenario 3
Lag	d _{fin}	d _{rint}	d _{fm2}
0	0	-0,0104	-0,0012
1	-0,18	-0,0041	-0,0013
2	-0,09	-0,0063	-0,0008
3	-0,14	-0,0064	-0,0011
4	-0,1	-0,0099	-0,0011
5	-0,2	-0,0077	-0,0017
6	-0,06	-0,0068	-0,0009
7	-0,04	-0,0067	-0,0008
8	-0,06	-0,0089	-0,0001

Source: Own elaboration and calculations.

CONCLUSION

The early abandon of the productive development policies without reflections and possibilities to improve it materialized itself in Colombia, at the beginning of the 1990s with the institutional reforms, which were influenced by the dynamics of the hegemony of global finances, because with the expansion of the bond market during the decade of, Latin American countries became overindebted. The renegotiations, financial contagions, and restrictions to the access of capitals facilitated the conditionality clauses imposed in Brady and Backer's plan to abandon productive development policies. That promoted, instead, the embrace of policies that favored deregulation, free trade, and the free flow of financial capital. Arguably, on this point, Colombia was not indebted as other countries in the region. However, the consequences of the default in many neighboring economies changed conditions for all countries, which represented a breakpoint to increase pressure as well as theoretical and political consensus in favor of the free market, which eventually spread rapidly throughout the financial markets, benefiting their business.

This global tendency as reached the Colombian economy, generating factors of adaptation to the internal context. On the one hand, the financial sector experienced a stage of specialization and growth, which sparked a crowding out over sectors like industry and agriculture. Furthermore, elements such as the intermediation gap, greater possibilities to create means of payment, waves of privatization, and theoretical and political consensus about fiscal and monetary policy's scope ended up prioritizing fiscal balance and inflation control. This denied the possibility of using the public currency to stimulate the economy, keep full employment, and finance the productive development, besides launching a great client on the

private credit market: the State in the national and regional order, which reinforced the appropriation seigniorage.

Also, the descriptive analysis is highlighted within the empirical results. This confirmed the shock therapy on the Colombian economy during the decade of 1990s. It triggered a macroeconomic collapse that exacerbated demands from the economic theory and private interests to abandon the model of import substitutions and impose a new model of accumulation in line with internationalization dynamics, which, as illustrated, were fueled by forces fostering the hegemony of finances. Outcomes showed a meltdown of the productive development that led to the consolidation of the growth model led by incomes.

On the other hand, the model VARX showed how internal and external factors feedback and enhance, deepening the crowding out, the value extraction, and the instability. This model also revealed that the three mentioned factors emerged strongly in the 1990s, as noted in the descriptive analysis. They maintained underlying patterns during the nearly 30 years covering the sample.

Finally, it may be said that the present research results verify the value extraction, crowding out, and financial instability as elements that appropriated the Colombian economy and manifested themselves through different events. For example, the experience during the COVID-19 crisis, the financial sector kept growth margins and positive profits and received public aids that improved its balances. In contrast, others were the path followed by sectors such as the industry and agriculture. It is evident that capitalism might not expand and prosper without finances and money. Yet, the course of the last 50-years has ended up awarding financial incomes and short-term, putting aside the goals of sophistication and productive investment, full employment, and sustained growth, which needs rebalancing these days.

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APPENDIX

The robustness tests of the VAR model are presented below. They were estimated by STATA 15.0.

Appendix 1: Autocorelation test

lag	chi2	df	prob > chi2
1	8,652842109	4	0,070387364
2	10,67972553	4	0,030409335
3	1,793864084	4	0,773604765
4	9,6829104	4	0,046121537
5	2,082561543	4	0,72057676
6	3,787162617	4	0,435575834
7	6,708762344	4	0,1521028

Source: Own elaboration and calculations.

Appendix 2: Normality test

Jarque-Bera test				
Equation	chi2	df	Prob > chi2	
dind	3,490915	2	0,174565	
dfin	0,521412	2	0,770507	
All	4,012327	4	0,40434	
Skewness test				
Equation	Skewness	chi2	df	Prob > chi2
dind	-0,46678	3,340815	1	0,067581
dfin	-0,07024	0,075656	1	0,783273
All		3,416472	2	0,181185
Kurtosis test				
Equation	Kurtosis	chi2	df	Prob > chi2
dind	3,19788	0,1501	1	0,69844
dfin	2,658995	0,445756	1	0,504357
All		0,595856	2	0,742355

Source: Own elaboration and calculations.

Appendix 3: Eigenvalue stability condition

Eigenvalue		Modulus
0,011406736	0,935180564	0,935250128
0,011406736	-0,935180564	0,935250128
0,894631836	0	0,894631836
-0,855783148	0	0,855783148
0,486440234	0,701091465	0,853319016
0,486440234	-0,701091465	0,853319016
-0,334334586	0,746642473	0,818079824
-0,334334586	-0,746642473	0,818079824
0,745516366	0,286960516	0,798837274
0,745516366	-0,286960516	0,798837274
-0,594502512	0,448082065	0,744453339
-0,594502512	-0,448082065	0,744453339
-0,60793098	0,117599264	0,619200826
-0,60793098	-0,117599264	0,619200826

Source: Own elaboration and calculations.

Appendix 4: Lag length selection

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	800,13285				0,00000	-17,30724	-17,26298	-17,19759*
1	807,86181	15,45792	4,00000	0,00384	0,00000	-17,38830	-17,29979*	-17,16901
2	811,16607	6,60853	4,00000	0,15808	0,00000	-17,37318	-17,24042	-17,04425
3	813,01152	3,69091	4,00000	0,44945	0,00000	-17,32634	-17,14933	-16,88777
4	821,53060	17,03816	4,00000	0,00190	0,00000	-17,42458	-17,20331	-16,87636
5	823,25778	3,45435	4,00000	0,48485	0,00000	-17,37517	-17,10965	-16,71731
6	829,72812	12,94068	4,00000	0,01157	0,00000	-17,42887	-17,11910	-16,66137
7	837,04757	14,63889*	4,00000	0,00551	8,66066E-11*	-17,501034*	-17,14701	-16,62389
8	840,54218	6,98922	4,00000	0,13646	0,00000	-17,49005	-17,09177	-16,50326

Source: Own elaboration and calculations.

