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ON THE ECONOMICS OF DEVELOPMENT: AN EVOLVING VIEW FROM THE PERIPHERY

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Abstract: This a survey of my research on development economics, set up in the context of the historical experiences of Brazil and Latin America. This research consists of academic papers, essays in persuasion, economic fables, and reflections on my experiences in policy making. It spans different fields, including income distribution, industrial policies, dollar constraints and debt crises, commodity booms and coffee valorization, high inflation and stabilization policies, and Brazil's growth record.

Keywords: Brazil, Latin America, IMF, World Bank, income distribution, industrialization, debt crisis, high inflation, commodity booms.

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1. Introduction

This is a survey of my research on development economics, set up in the context of the historical experiences of Brazil and Latin America and the evolving intellectual landscape in the field.

My research has been a continuous dialogue with the theses of the "practical orthodoxy". Carlos F. Díaz-Alejandro and I once quipped that practical orthodoxy is more assertive than the academic orthodoxy, which tends to be flexible and agnostic. But it is what puts the system to work and typically sets the tone of Center economists' advise on policymaking in the Periphery (Bacha and Díaz-Alejandro 1982). In this context, my papers have aimed at being "exercises in the art of using modern techniques of analysis to elaborate the generous vision of Latin American economies" proposed by earlier Latin American economic thinkers (Bacha 1986c, 7).

It is appropriate to distinguish between two phases in my academic endeavors: the first from the late-1960s through the mid-1980s, the second from then onward. Earlier on, I was a fierce critic of the economic policies of the military regimes in South America and also of the IMF and the World Bank policy interventions in Latin America. After Brazil's redemocratization in 1985 I became involved in the country's economic policymaking. As such, my academic work tended to adopt a

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more reflexive and nuanced approach to the "narrow limits of the possible"[2]. Notwithstanding this change in my economic policies' perceptions, a concern with social inequality remained as a permanent theme in my academic writings.

The survey is organized in eight sections besides this introduction. Section 2 deals with income distribution, and considers my work in this area in the 1970s. In that decade there was a fierce debate on the causes of income distribution concentration in Brazil during the 1960s. I was critical of hypotheses based on skill differentials and Kuznets' curves, and emphasized instead institutional developments and government wage policies (Bacha 1974a; Bacha 1979; Bacha 1982a; Bacha and Taylor 1978). It is in this period that I wrote a fable on growth and distribution in Belindia (Bacha 1974b). The juxtaposition of Belgium and India has since become popular to refer to Brazil's highly-concentrated income distribution.

Section 3 refers to industrialization policies and cost-benefit analysis, topics that also attracted my attention in the 1970s. My original interest was on price-distortions in developing countries' economies, which led me to develop an expression for the shadow price of foreign exchange (Bacha and Taylor 1971), and to empirical estimates of the shadow prices of labor, capital, and foreign exchange in Brazil (Bacha 1977). The policy purpose was to push for a more labor-intensive and export-oriented development strategy (Bacha 1972). My other concern was to search for alternatives to free trade in a setting where policy makers had a "preference for industry" (Bacha 1973). I also wrote a critical survey of the literature on the role of the agricultural surplus in industrial development (Bacha 1980a).

Section 4 deals with the dollar constraint, a topic that was central to the Latin American structuralist school, and on which I wrote a series of papers. These consisted of a reinterpretation of the two-gap model (Bacha 1984a), a fix-price disequilibrium balance of payments model (Arida and Bacha 1987), and an argument for measuring the contribution of foreign capital to the recipient country's growth rate by the real transfer and not by foreign savings (Bacha 1992a). Later, my attention shifted to the Hirschman theme of "exportability". I used this concept to update the UN/ECLA [United Nations Economic Commission for Latin America] thesis on external strangulation (Bacha 2003b) and also as a blueprint for a critique of the Washington consensus on development policies (Bacha 2002).

Section 5 deals with the Latin American debt crisis of the early 1980s and the IMF-led adjustment policies that followed that crisis. I expanded on a Balassa (1983) decomposition exercise to distinguish between external shocks and domestic variables at the origin of this crisis (Bacha 1986b). I also specified the model behind the IMF "financial exercises": critical of the practical consequences

[2] The expression is from Taylor (1974).

of these exercises, I offered a set of "growth exercises" to supplement the IMF model (Bacha 1987). Proposals to deal with Latin America's debt overhang in a growth-friendly manner (Bacha 1988b; Bacha 1995) followed on a critical survey of the IMF/World Bank structural adjustment policies in Latin America (Bacha and Feinberg 1988). Separately, the fiscal collapse brought about by the debt crisis led me to formulate a three-gap growth model, in which the "fiscal constraint" becomes the dominant impediment to growth (Bacha 1990a; Bacha 1993a).

Section 6 is involved with the natural resource curse. Albert Fishlow and I reviewed the literature on this topic and analyzed the experiences of Latin American countries with the commodity boom of the early 2000s. We concluded that economists agreed on little beyond the obvious facts that institutions and policies mattered for the outcomes (Bacha and Fishlow 2011). However, my main concern in this area was with the one-century-long Brazilian experience with coffee valorization and its consequences for the country's development pattern (Bacha 1992b). My main point was that Brazil's current inwardness is historically linked to the mix of coffee valorization (which in the long run generated an acute dollar shortage) and protection of industry (which lessened the dollar shortage through an indiscriminate import substitution policy).

Section 7 is dedicated to my work on high-inflation and stabilization policies in Brazil. Practical orthodoxy in the form of simple-minded monetarist interventions was the initial object of my criticism. My analytical focus was on: (i) the appropriate concept of inflation-adjusted budget deficits to be dealt with by sensible stabilization policies when the public debt is indexed to inflation (Bacha 1988a), (ii) the negative impact on growth of orthodox stabilization policies in the context of backward-looking wage indexation (Bacha 1980b; Bacha 1983c; Lopes and Bacha 1983), and (iii) the role of inflation to balance the budget through a reverse Olivera-Tanzi effect (Bacha 1994). Later on, my involvement was not only intellectual but also practical, as I participated as an economic adviser to the government both in the failed 1986 Cruzado stabilization plan (Bacha 1986a) and the successful 1994 Real plan (Bacha 2003a).

Section 8 deals with interpretations of Brazil's historical growth record, searching for reasons why the country failed to overcome the middle-income trap. This includes two books that I co-edited, one on structural aspects of Brazil's rapid industrialization but incomplete social change in the 1945-1985 period (Bacha and Klein 1989) and another on the limitations of and alternatives to Brazil's inneficient and expensive social policies (Bacha and Schwartzman 2011). Lamounier and Bacha (1994) review the role of political authoritarianism and the obstacles to democratic reformism in Brazil since the 1930s. My more economic-oriented research on Brazil's see-saw growth record include: (i) the introduction of the concept of "jurisdictional uncertainty" to explain the country's very high real interest rates (Arida, Bacha, and Resende 2005), (ii) a new accounting framework to measure the impact of capital inflows and the terms of trade on Brazil's growth surge in the 2005-2011 commodity boom period (Bacha 2013a), and (iii) a growth accounting exercise that reveals the importance of the rise of the relative price of investment (associated to an inefficient capital goods import substitution process) to explain the collapse of Brazil's growth after 1980 (Bacha and Bonelli 2016a). In an essay in persuasion that focused on the high degree of inwardness of the Brazilian economy, I formulated a policy program to open-up the country's economy to international trade as a means of restarting its stuttering growth machine (Bacha 2013b). Section 9 concludes.

2. Income distribution

In 1972, Albert Fishlow published an essay on Brazil's income distribution in the *American Economic Review* (Fishlow 1972). The technocrats of Brazil's military regime (1964-1885) were furious with this paper because it imputed the worsening of Brazil's income distribution in the 1960s to the repression of labor unions and the wage squeeze practiced by the military from 1964[3]. Their replica was a book by a then recent graduate from the University of Chicago, Carlos Langoni, who argued that the observed income distribution concentration could be explained by market forces, namely, the scarcity of skilled labor in the country (Langoni 1973). A fierce and broadly inconclusive debate followed.

As part of this debate, in 1974 I wrote a paper in which I took issue with Langoni's theses (Bacha 1974a). My initial point was that the remuneration of managers (defined as workers occupying positions higher up in the firms' hierarchy ladder) was more closely associated to the profit rate than to the rate of return on education. I then used several private wage surveys to try to disentangle the remuneration of managers from that of high-skilled line laborers and obtained some evidence for my hypothesis. This unconventional sociological and managerial view of the labor market had little impact on the Brazilian debate: in the 1970s the Mincer earnings function reigned supreme in the labor economics field. Recently, more elaborate views on the operation of the labor market became in vogue to analyze the worsening of the income distribution in industrial countries. For example, Muller, Ouimet and Simintzi (2017) show that UK firms which exhibit high relative wage differentials between top and bottom-level jobs also have stronger operating performance and equity returns. The difference is that I considered the profit rate as a predetermined variable to which the managers' pay was linked, whereas this paper instead associates higher profits to the efforts of more talented managers. Fortunately, from my point of view, the authors stress that they are talking about correlations and not causal relationships.

In 1978, Lance Taylor and I wrote a somewhat idiosyncratic survey of the Brazilian income distribution debate (Bacha and Taylor 1978). Unsurprisingly, our conclusion was that Brazil's authoritarian government policy of wage

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[3] Independently, Hoffmann and Duarte (1972) made a similar point.

compression was a crucial factor explaining the income concentration in the country in the 1960s. We were naturally contradicting the alternative hypothesis that this concentration had to do with the scarcity of skilled labor. To us the data clearly showed that the population deciles whose income grew less were those around the minimum wage, which was left lagging the inflation rate by government design. The population deciles with incomes much lower than the minimum wage (mostly rural laborers) hadn't suffered as much. But again, in those days the competitive labor market hypothesis prevailed and the human capital theory was already all powerful. Thus, in the end the professional view was that Lance Taylor and I were adopting a "political" stance in opposition to the "scientific" one of those economists arguing in favor of the skilled-labor hypothesis. Nowadays, with the proliferation of monopolistic labor market models, at least part of the economics profession is more willing to accept an independent role for the minimum wage in the determination of the income distribution. This is clear in papers discussing the extent of the importance of the minimum wage for the evolution of the earnings distribution in the US (Autor et al. 2016; Dube 2017). For Brazil, a recent paper (Engbom and Moser 2017) argues that up to 70% of the improvement in the earnings distribution in the 1996-2012 period was due to the real minimum wage increase over that period. The claim is contentious but it shows how far the tables have turned since the 1970s.

Although at the time I failed to convince the profession on the role of government policies for Brazil's income concentration in the 1960s, I was more successful in drawing home my point with a short essay for a more general public, based on an analytical paper by Ahluwalia and Chenery (1974). This was the first and most famous of my economic fables: *The King of Belindia* (Bacha 1974b). In it, I imagined a kingdom peopled by a few rich Belgians surrounded by a sea of poor Indians. A visiting economist is hired by the King to measure the kingdom's growth rate. Rather than starting with the national accounts, the economist starts with the household surveys. He then asks how to aggregate the growth rates of the incomes of each household to obtain a growth rate for the country as a whole. The economist comes up with three distinct weighing schemes: a poor-based one, a democratic-based one, and a rich-based one. He then shows that the rich-based weighting scheme gives him the same growth figure as that of GDP – which he then argues to be an index of the happiness of the rich (in Portuguese this sounds much better: *felicitômetro dos ricos*). In contrast with the rich-based scheme, both the poor-based and the democratic-based ones yielded very low growth rates for the kingdom in the 1960s. The King then fired his economic minister and made public the three alternative ways to measure Belindia's growth rate. The moral of the story was that they no longer made kings as in the past. The fable, published in 1974 in an opposition newsweekly in Brazil, was an instant success and became a powerful weapon to criticize the economic policies of the military government. Both at home and abroad Belindia has since become a nickname for Brazil, as a synthetic representation of the country's highly concentrated income distribution.

Separately, I noticed that, although the Lewis (1954) thesis on the constancy of the real wage in the earlier phases of development was popular in Brazil, there had never been an empirical attempt to test this hypothesis in the country. Part of the reason was that relevant data was hard to come by. Using various sources I dug up wage series for Brazil's urban and the rural sectors since the 1940s. Based on this newly constructed data set I wrote a paper that showed that the urban-to-rural wage ratio historically had been very sensitive to the price-ratio between urban and rural products (Bacha 1982a). That is, contrary to the Lewis hypothesis in the Brazilian past there had been a marked segmentation between the urban and rural labor markets. This was valid for the 1940s and 1950s. In the 1960s, the trends in the urban-to-rural-wage-ratio were dominated by political and institutional factors, namely, the extension to the rural sector of the labor legislation in 1963 and the subsequent minimum wage squeeze by the military government. In the 1970s, with the development of a market for daily migrant laborers, the urban-to-rural wage differential shrank rapidly and became much less sensitive to the food-to-manufacturing price ratio. Thus, historically one observed a trend towards shrinkage of the urban-to-rural wage differential. One also one did not observe any real wage gains by the unskilled urban labor force over the period. In the end, the paper vindicated Lewis's hypothesis, but strongly qualified it by the role played by labor-market government policies.

In 1975, I wrote a critical review of the literature on the Kuznets' curve that relates income distribution to per capita incomes according to a bell curve: income concentration first increases and then decreases over the course of economic development (Bacha 1979). I presented this paper in a plenary session at the 1977 Congress of the International Economic Association in Tokyo. In it, I criticized purely economic explanations of changes in the size income distribution across countries and through time, and emphasized instead the role of non-economic factors such as wars and social revolutions. My conclusions are in broad agreement with Piketty's criticism of the Kuznets curve in his celebrated *Capital in Twenty-First Century* (2014, 13-15).

In the 1970s I also became fascinated with the Cambridge controversy on the theory of capital. The end-result was a paper on *Sraffa and Classical Economics*, written jointly with Dionisio Carneiro and Lance Taylor (Bacha, Carneiro and Taylor 1977). This was a linear-algebra exercise that interpreted Sraffa's "standard system" of production of commodities by means of commodities as a regular input-output system. We showed how this system could be used to derive a simple formula for David Ricardo's "invariant theory of value" (a commodity in terms of which the distribution of net product between profits and wages was invariant to changes in relative prices). Another simple formula could also be derived from this system to explain Karl Marx's "transformation of values into prices" (which also required the same "standard" commodity as that needed to solve Ricardo's problem).

Besides the intellectual fun of writing this joint paper, for me its biggest advantage was that it provided a frame of reference for another paper that I wrote on the theory of unequal exchange. This consisted of a full-specialization two-country trade model that discussed the trade pattern between the Center and the Periphery of the capitalist system. The paper puts together in a simple framework trade themes developed by Arthur Lewis, Harry Johnson, Raul Prebisch, Hans Singer, and Arghiri Emmanuel. The Center specializes in the good with a high income-demand elasticity, and the Periphery in the good with a low price-demand elasticity (these are the assumptions both of Harry Johnson's impoverishing growth model and of the Prebisch-Singer's thesis on the appropriation by the Center of the Periphery's productivity gains). The real wage in the Periphery was fixed at the subsistence level, according to the Lewis labor surplus condition. Capitalists maximized the profit rate in the Periphery; by Emmanuel's "imperialism of trade" hypothesis this was the same profit rate that ruled in the Center. In this model, labor-productivity increases in the Periphery leave the wage-rate there invariant while reducing employment in its modern sector. By contrast, technical progress in the Center (where full employment rules) results in higher wages there. There's no shade of cross-country income convergence in this asymmetrical trading world. The paper was published as the leading article of the December 1978 issue of the *Journal of Development Economics* (Bacha 1978).

3. Social cost-benefit analysis and industrialization policies

My first job after obtaining a Ph.D. at Yale was as a research associate of the MIT Center for International Affairs. In the academic year of 1968-69, I was member of a MIT-Harvard team helping the Chilean government planning office on the formulation of economic development policies.

It was in this context that I became interested in social cost-benefit analysis and industrialization policies, and wrote a paper with Lance Taylor on the shadow price of foreign exchange. This was published as the leading article of the May 1971 issue of the *Quarterly Journal of Economics* (Bacha and Taylor 1971). My main contribution in this paper was a formula for the computation of the "equilibrium" exchange rate, defined as that which—in a partial equilibrium context--would equilibrate the foreign-exchange market in absence of distortions, particularly those caused by tariffs on imports and subsidies on exports. This became known as the "Bacha-Taylor shadow exchange rate formula", a useful tool not only for social cost-benefit analysis, but also to evaluate the impact of tax-distortions on the level of the exchange rate, and to estimate the exchange rate that policy-makers should aim at in the context of a liberalization of trade flows.

In Chile, I became very impressed with the reluctance of Venezuela to open up its economy to its partners in the Andean Group. The reason was that this would cause a deindustrialization of the country. Thus, I wrote a simple three-sector trade model (agriculture-and-mining, light industry, and heavy industry) to provide an ordering of trade-policy alternatives for a country whose government had a preference for industry even though it had a comparative disadvantage in that activity (Bacha 1973). That is, I restricted the field of policy choices to those alternatives that complied with a given share of industry in aggregate output. Free trade was not feasible; but I showed that an ideal ordering of trade policy alternatives in this second-best context was, first, tariff preferences in industrial countries' markets; and second, either a customs union or industrial exports subsidies. Industrial deepening (as preferred by Venezuelan policy makers) was a poor third choice.

At the end of 1969, I moved to Rio de Janeiro and worked for a couple of years at IPEA, where I produced a book-length study on the shadow prices for capital, labor, and foreign exchange in Brazil (Bacha et al. 1971). The idea, which never fructified, was to use these parameters in social cost-benefit analyses in the country. We found that the social rate of return on capital (or the social rate of discount) was a hefty 18%, nearly twice as high as the value used to discount income streams in project analysis at the National Development Bank (BNDES). The shadow price of unskilled labor was ½ of its market price in the country's poorer Northeast, and 2/3 of the going labor cost in the richer Southeast. The shadow price of foreign exchange was 25% higher (i.e., more devalued) than the observed exchange rate. Later, I embedded these results in a broader empirical study of shadow prices for social project analysis in developing countries (Bacha 1977).

At IPEA, I also developed a simple formula to decompose the growth of employment in two-digit Brazilian manufacturing sectors into three components: the first term depended on the growth rate of manufacturing value added as a whole; the second, on the change of the sectorial composition of manufacturing; and the third, on the growth rate of sectorial labor productivity. I then applied this decomposition to Brazilian data for the 1949-69 period (Bacha and Mata 1973). We showed that both the "structural" and the "technological" terms in the decomposition exercise contributed to reduce labor absorption in Brazil's industrial sector.

My concern with the slow rhythm of employment growth in Brazil's modern sector led me to write my first essay on persuasion, an advocacy for the adoption of a more labor-intensive and export-oriented development strategy, in opposition to what I saw as the propensity of Brazilian policy-makers to emphasize a capital-intensive import substitution strategy (Bacha 1972). The paper had a significant political impact, leading to intense debates in the Brazilian Senate in the early 1970s.

In another paper that was later reproduced in Gerard Meyers's (1996) compendium on *Leading Issues in Development Economics*, I looked at the relationships between agriculture and industry in broader terms (Bacha 1980a). Traditionally, agriculture was viewed as providing two critical inputs for industrialization: wage-goods (as in Soviet-type forced industrializations) and foreign exchange (as in Latin America's import substitution industrialization). In both cases, a squeeze on the agricultural surplus was accepted as a legitimate path towards industrialization. More recently, I argued, this strategy was criticized with the argument that agriculture itself was a source of modernization and technical progress. "Getting the prices right" became the new mantra, in the sense of rapidly adopting price-policies that did not discriminate against the agricultural sector. The paper advises against abrupt changes in this direction, favoring gradualist approaches that are respectful of the structural rigidities that characterize developing economies.

4. Dollar constraint

Growth limited by the availability of foreign exchange was a central topic in Latin America's structuralist thought. It gained popularity in the development literature in the form of the two-gap growth model. For a 1984 Hollis Chenery festschrift volume, I wrote a paper rephrasing the two-gap growth model in the terminology of the Mundell-Fleming textbook macro model for a small open economy (Bacha 1984a). I interpreted the savings-constraint of the two-gap model as the condition for internal equilibrium (or full capacity utilization); and the foreign exchange constraint as the condition for external equilibrium (or balanced trade). A foreign-exchange constrained economy is one in which there is an upper limit for its exports (plus a fixed-coefficient technology for imported capital goods), such that external equilibrium occurs at a GDP growth rate lower than that achievable under full-utilization of domestic resources. In this context, "elasticity pessimism" about trade reaction to price changes and "fear of foreign exchange depreciation" are alternative explanations for why a country remains in a low-growth foreign-exchange constrained regime in absence of domestic capacity constraints.

In a companion paper, Persio Arida and I developed an explicit fix-price disequilibrium macro model for the analysis of balance of payments regimes in an emerging market economy (Arida and Bacha 1987). In this model, the Lewis labor surplus hypothesis turns out to be the mirror image of the Chenery-Bruno foreign exchange constraint. We argued that the balance of payments of a semi-industrialized economy typically sways between a Classical Deficit and a Structural Deficit situation, where these policy regimes are identified, respectively, with the IMF doctrine and the UN/ECLA critique. Both are characterized by unemployment and balance of payments deficits, but the therapy to correct these ills depends on the nature of the disequilibrium in the goods market. The structuralist point of view is correct when the external deficit results not from excessive domestic demand but from insufficient external demand. But the conditions for a truly structural deficit are more stringent than claimed by the ECLA doctrine. The economy can present unemployment, external deficit, and excess supply of goods, and yet, depending on the price-elasticity of external demand, real exchange rate devaluations, if politically feasible, could eliminate the Structural deficit region.

The topic of external equilibrium came back in a paper that I prepared for a special session on Latin America's external vulnerability at the 2002 Economic Meeting of the Brazilian Association of Graduate Economic Centers (ANPEC). This was a text with reflections—which I dubbed "post-ECLA"—on the evolution of non-traditional economic thinking on inflation and external crisis in Latin America since the Prebisch manifesto of 1949 (Bacha 2003b).

On inflation, which I'll discuss further in Section 7, I claimed success. My generation developed the inertial theory of inflation starting from the original ECLA's structuralist inflation thesis. As we understood the logic of passive (and remunerated) money and the role of fiscal variables, a plan could be implemented—the Real plan—that did away with high inflation in Brazil.

Less success was achieved on the external front. The original ECLA thesis on external vulnerability focused on the fragilities of the so-called primary product exporting stage and favored import substitution industrialization. Such "external strangulation" hypothesis in my generation initially became known as the two-gap model, which favored import substitution and export promotion equally. In the two-gap model, the relationship between exports and investment is positive, because the latter is restricted by the absence of complementary imports. The real problem however was not a physical impediment but the lack of financing. It is in this context that external strangulation meets the classical transfer problem. A sudden stop of foreign capital inflows imposes the need for a real devaluation so that the negative external transfer may occur. In a context of domestically dollarized debts, this deepens the initial crisis. The model applies well to Argentina, but not so much to Brazil.

In Brazil, dual-equilibrium models with the nature of the equilibrium (good or bad) depending on the expectations of foreign investors on public debt sustainability might be more appropriate. The sensitivity of the nature of equilibrium to foreign investors' expectations is linked to the fact that the domestic currency in unconvertible. Because of this inconvertibility, it does not serve as a reserve of value that could be used as a collateral for real investment. Thus, the country continued to depend on the humor of foreign investors in an updated version of the original external strangulation model.

Another paper in this period was an essay on persuasion written for a round table discussion with Joseph Stiglitz and Dany Rodrik at BNDES in September 2002 (Bacha 2002). With the provocative title of "from the Washington consensus to the Cambridge dissensus", it starts with the argument that for a critique of the Washington consensus to fructify, the Cambridge dissensus of Rodrik and Stiglitz needed an alternative paradigm. This, I sustained, had to start from the concept of a dollar constraint, centered on the fact that the return of foreign capital in a developing economy materializes in a local unconvertible currency. A problem then emerges to transfer these monies into hard currency. This transfer problem restricts the capital inflow (as it increases the investment risk) and tends to generate periodic foreign exchange crises.

If the dollar constraint was indeed the main obstacle for sustained growth in emerging markets, the focus of the solution might lie in the sphere of finance. One option to escape the dilemma would be to deepen and further long-term domestic financial markets. But leveraging local finance did not simply mean improving the depth and breadth of local financial markets. “Exportability” of economic output—a concept that I borrowed from Hirshman--was equally important. At issue was a reduction in external financial vulnerability. This could be achieved by either increased access to local long-term capital markets or an enhanced exportability of the economy.

The paper concludes that the problem was not the substitution of domestic savings for foreign savings. On the contrary, the amplification, through exportability, of the country´s international collateral, would allow it safely to hold a higher volume of external debt per unit of output. This would facilitate its access to external savings as required to accelerate the GDP growth rate through the exploration of local investment opportunities.

A phenomenon that I did not envisage was the commodity supercycle that materialized in the following years. This permitted a substantial increase both in the exportability of Latin America’s economies and in the accumulation of foreign reserves in the region. When international financial markets dried up in the 2008-09 crisis, for the first time in history these countries could implement countercyclical monetary and fiscal policies. These allowed Latin American economies to delink themselves from the Great Recession that hit on industrial countries. Costs were measured in terms of extraordinary increases in budget deficits and public debts. The traditional dollar constraint metamorphosed itself into an acute fiscal crisis. But this was only the final chapter of a story that started with Latin America’s debt crisis of the early 1980s and the subsequent IMF-led adjustment policies in the region. My intellectual participation in this story is the object of the next section.

5. Latin America’s debt crisis and IMF policies

With the eruption of the debt crises of the early-1980s, Latin American countries had to choose between facing the consequences of international default or swallowing up the IMF medicine. They opted for the second alternative and Brazil was no exception. In a short three-year period, Brazil signed no less than seven “letters of intention” with the Fund, none of which reached their targets.

These failed adjustment attempts in Brazil clearly showed the limitations of fixing external disequilibrium purely through Central Bank credit restrictions and exchange rate devaluations as preached by the IMF. A critique of these programs is the object of two empirical papers on Brazil and the IMF that I wrote for conferences at the Institute of International Economics in Washington, DC, in 1983 (Bacha 1983a; Bacha 1983b). I also wrote a widely circulated essay in persuasion entitled *A prologue for the third letter of intent* (Bacha 1984b). This was a plain language critique of the IMF medicine as applied to Brazil, its excessive focus on immediate balance of payments adjustment, and its insufficient attention to the stagflationary consequences of such adjustment in Brazil's highly indexed economy.

Another paper that I wrote for the Intergovernmental Group of Twenty-Four on International Monetary Affairs (the G-24) contained a step-by-step equation-based explanation of the IMF "financial exercises". The paper criticizes the recessive bias embedded in these procedures, and advocates that they should be complemented by "growth exercises". Their purpose would be to establish the external credit requirements of more sensible IMF-led adjustment programs. This formed the analytical backbone of a 1987 report by the Group of 24 (1987), *The Role of the IMF in Adjustment with Growth.*

In a paper presented at the December 1982 New York meeting of the Allied Social Sciences Association (Bacha 1983c), I extended this critique to the failed IMF-led open-monetarist experiments in the Southern Cone of South America (Argentina, Chile, and Uruguay) in the 1970s. The paper's main point is illustrated with a graph showing the extraordinary appreciation of the real exchange rate that these countries experienced when they implemented a fixed-nominal-exchange-rate strategy to control inflation in the presence of backward-looking wage-indexation. The policy point was that wage stickiness had to be dealt with directly rather than by forcing the economy into a disequilibrium path through an exchange rate anchor.

The nature of balance of payments disequilibria in emerging market economies was another hotly contested macroeconomic issue in the early 1980s. Working as an adviser to the Group of 24, I expanded on an accounting framework originally proposed by Balassa (1983) to decompose changes in the current account of the balance of payments into variables related to domestic policy and to external shocks. This became the analytical basis for a UNCTAD (1985) report on *Compensatory financing of export earnings shortfalls*. The same decomposition exercise of current account disequilibria played a central role in an empirical analysis that I wrote on external shocks and Brazil's growth prospects in the 1973-1989 period (Bacha 1986b). I concluded that Brazil's foreign debt accumulated mostly because of deteriorating terms of trade, interest rate shocks, and world recession. However, I also pointed out that, faced with adverse external circumstances, the Brazilian government opted for external financing rather than domestic adjustment.

A companion paper used a similar decomposition formula for an analysis of the impact of external shocks on Latin American countries in the 1978-82 period

(Bacha 1985b). The conclusion was that it was not possible to summarize in a single expression, such as external shocks or excess domestic spending, the reasons why Latin-American countries’ external accounts deeply deteriorated in that period. Each case had to be analyzed individually.

The above exercises implicitly assumed that whatever was the source of the current account disequilibrium external financing would somehow accommodate it. Autonomous foreign capital flows were not part of these analyses. But the increased availability of private foreign sources of funding was a major part of the history of Latin America’s foreign indebtedness in the 1970s, eventually leading to the 1982 debt crisis. This story I took up in a series of other papers in this period.

In 1981, Carlos F. Díaz-Alejandro and I wrote a historical review of international finance and Latin American growth in a paper published as a *Princeton Essays International Finance* (Bacha and Díaz-Alejandro 1982). The tone of this essay reflects an economic and financial outlook for Latin America that is pessimistic relative to repeating the favorable performance of the 1970s, but optimistic relative to catastrophic scenarios. If matters became much worse for major Latin American borrowers than we anticipated (as it turned out to be the case), the paper suggested that schemes for re-funding their debts as proposed by Fishlow (1978) would become attractive.

For a conference at the Banco de la República in Colombia also in 1982, I wrote a paper making a distinction between the “intensity” and the “style” of the interactions of Latin American countries with international finance (Bacha 1984c). According to intensity, Argentina, Brazil, and Chile made abundant use of foreign capital; whereas Uruguay and Colombia used it more sparsely. According to style, Brazil and Colombia tended to use foreign capital in a more regulated-form, as a complement to domestic finance. Argentina, Chile and Uruguay adopted financial liberalization more fully and a substitution of foreign for domestic savings tended to occur. In the end, only Colombia (which used foreign capital sparsely and under strict controls) was able to avoid the Latin America debt collapse of 1982-83.

In 1989, Pedro Malan and I published a review of the Brazilian experience with foreign debt, which led the country from the “economic miracle” of the 1970s to the economic crisis and the IMF-led adjustment programs of the early-1980s (Bacha and Malan 1989). Separately, in a paper written for the Group of 24 and later reproduced in a 1995 book to honor the memory of Sidney Dell (Bacha, 1995), I drew lessons from the debt crisis for the adoption of international policy measures that might contribute to the sustainability of capital flows to the developing countries.

Part of the suggestions in this last paper originated from a 1987 book that Miguel Rodriguez and I organized for the Permanent Secretariat of the Latin-American

Economic System (SELA), in which we analyzed critically the policy interventions of the World Bank and IMF in Latin America (Bacha and Rodriguez 1987). In a subsequent paper coauthored with Richard Feinberg (Bacha and Feinberg 1988), we offered a summary critical analysis of the interventions of the Bank and the Fund in Latin America in the 1980s. In a nutshell, we criticized these institutions' excessive focus on immediate balance of payments adjustment and inflation control at the expense of furthering economic growth in the region.

Mention should also be made to a paper that I wrote for the 1987 Basel Conference of the International Economic Association (Bacha 1988b). I presented some conciliatory suggestions to deal with Latin America's debt overhang. These suggestions are not very distinct from those eventually adopted by the Brady Plan.

The policy adjustments to the debt crisis, particularly the sharp exchange rate devaluations that they entailed, led to a deep fiscal crisis in Brazil and other Latin American countries. The exchange rate devaluations sharply raised the burden of the public external debt in local currency terms. The public debt increased further because the government felt compelled to take over part of the private external debt to avoid a generalized bankruptcy of local firms. Time was ripe for new ways of thinking about the causes and consequences of fiscal crises in Latin America.

Written at the end of 1988, while I was teaching at Berkeley and Stanford, "the three-gap model" is probably my most widely quoted paper (Bacha, 1990a). The paper contains a macroeconomic model showing the interplay between the fiscal crisis and the rhythm of economic growth. The critical assumption is that there is complementarity between public and private investment. Thus, when fiscal adjustment imposes a contraction of public investment, the resulting fiscally constrained GDP growth rate may turn out to be lower than that determined by either the foreign exchange or the savings constraints. In a complementary paper (Bacha 1992a), originally written for a G-24 report on the future of the World Bank, I argued that the relevant concept for an analysis of the foreign contribution to growth was the net real transfer and not foreign savings. The reason was that both the externally-determined terms of trade and the remuneration of foreign capital had to be netted in. The paper further argues that the distinction is particularly relevant when the binding growth constraint is the fiscal one. In the same tone but with fewer equations, in Bacha (1990b) I pleaded for a new approach to the external debt crises focused not on foreign exchange shortages but on government budget shortfalls.

This type of three-gap modeling became the basis for a series of empirical studies on Latin American growth at the Inter-American Development Bank. These were published in a book that I edited in 1993 on savings and investment requirements for growth resumption in Latin America (Bacha 1993).

For a 1988 international conference in Honolulu on the lessons in development from Asia and Latin America, I reviewed Latin America's economic stagnation since the debt crisis (Bacha 1989). Looking at this issue from a broader perspective than the gap models, I named a sequence of structural problems:

- High levels of public sector external debt contracted at floating interest rates;
- Economic inwardness, that is, a low level of industrial exports coupled with high dependence on a handful of primary commodities;
- Lack of flexibility in the public-sector accounts;
- Rigid backward-looking price-and-wage indexation mechanisms;
- Extreme degrees of income concentration.

Effective growth-oriented policies in Latin America, I concluded, would require new institutions to cope with social conflict in a more productive manner than in the past. This paper was essentially a critique of non-inclusive authoritarian economic policy making in the region, associated with a high degree of external financial dependence. This was nearly thirty-years ago. Since then, Latin America recovered from the "lost decade" of the 1980s and nowadays democracy rules mostly everywhere. But the region has been unable to overcome the middle-income trap, even though the successful experiences of at least a dozen countries in the post-WW-II-period are there to be learned. The growth lessons from these cases were pointed out in *The Growth Report*, a World Bank (2008) sponsored endeavor of which I participated, under the guidance of Michael Spence. These success stories are mostly from Asia and, according to the *Report* (p.21), they reveal five striking points of resemblance (most of which are still missing in Latin America):

- They fully exploited the world economy;
- They maintained macroeconomic stability;
- They mustered high rates of savings and investment;
- They let markets alocate resources;
- They had committed, credible, and capable governments.

6. Commodity booms and coffee valorization

The commodity boom of the early 2000s was the object of a paper that I wrote with Albert Fishlow for *The Oxford Handbook on Latin American Economics* (Bacha and Fishlow 2011). The first part of the paper is a review of the literature on the natural resource curse and the Dutch disease. We found only a limited but perhaps obvious consensus in the literature that institutions mattered. In the second part of the paper, we reviewed the experiences of Argentina, Brazil, Chile, and Venezuela with the management of its natural resources. We found a complex set of policies, with Chile giving the best lessons and Venezuela the worst; Brazil feeling its way with the newly found oil riches; and Argentina unable to overcome economic volatility. The unsurprising conclusion was that sensible policies were a necessary ingredient for a country to benefit from a commodity boom. Brazil's subsequent mismanagement of its oil riches, that led to the country's worst corruption scandal in its history, was soon to confirm how much good policies mattered.

Accompanying the commodity boom of the early 2000s, Brazil suffered from a process of deindustrialization. This topic was the object of series of seminars at Casa das Garças, a think-tank that I manage in Rio de Janeiro, leading to a book-length study on the future of industry in Brazil (Bacha and de Bolle 2013). This book's main theme is that, to avoid further deindustrialization, Brazil needed to participate more fully of the global value chains. For this book, I wrote a paper arguing that external variables—the commodity boom and a high influx of foreign capital—had been the fundamental determinants of the country´s deindustrialization in the 2005-2011 period (Bacha 2013a). Contrary to prevalent views in Brazil, domestic policy-related variables such as exchange rate and monetary policies had at most a supporting role. I documented these empirical propositions with the use of a simple accounting and modelling framework.

These last two papers capped my long term interest on the impact of commodity cycles and commodity-related policies on the Brazilian economy. As early as 1968 I wrote a Ph.D. dissertation at Yale University on an econometric model for the world coffee market (Bacha 1969). My main focus was on Brazil as the price-setter in this market. A relevant contribution was on what can be called politimetrics, the study of economic-policy making rules with the use of econometric techniques. Received wisdom argued that the Brazilian government used its dominant position in the world coffee market to fix the price of its coffee at the level that maximized the country's foreign exchange revenue. That is, at the point of the world demand curve for Brazilian coffee at which the absolute value of the price-elasticity of demand reached the value of unity. I disagreed with this interpretation. First, available estimates of the absolute value of the price elasticity of coffee demand were unanimously much lower than unity. Second, a historical analysis of the rationale of Brazilian economic policy makers showed that, besides foreign exchange revenue, they were also concerned with the local-currency costs of sustaining high coffee prices abroad. They dealt with this last concern partially with taxes on coffee production, but these were violently fought off by the powerful coffee lobby. The consequence was the accumulation of sizable stocks of coffee in government warehouses, the acquisition and maintenance of which were costly for the government budget (over and above the yield of local taxes on coffee production). I thus tested the hypothesis that the Brazilian coffee policy-makers set the price of coffee midway between the value that maximized coffee-export revenues and the value that minimized the net outlays of the Brazilian government to acquire the surplus of coffee production over exports. My econometric evidence showed this to be indeed the case, with the weights of each objective being dependent on the size of existing coffee stocks.

In 1992, I returned to the topic of my Ph.D. dissertation, and wrote a monograph on the historical role of coffee in the Brazilian economy (Bacha 1992b). The monograph went over the main events in the 19th Century, but focused on the coffee valorization policy initiated in 1906. The paper details the evolution of this policy throughout the 20th Century, until its demise in 1990 with the closure of the Brazilian Coffee Institute.

Novel historical interpretations in this monograph include a revaluation of the behavior of coffee prices in the 19th Century. Building on an analysis on Colombia by Ocampo (1984), the paper shows that a fundamental unbalance between the rapid growth of world demand and the slow growth of world supply caused the real price of coffee to follow a secular upward trend from the mid-1840s to the late 1980s. It argues that it was the attraction exerted by such high prices, and not the inflationary consequences of the so-called *Encilhamento* (as proposed by Delfim-Netto (1959) and other historians), that generated a tendency for coffee overproduction in Brazil. This, in turn, made coffee prices crush in the 1890s.

Coffee valorization policies were introduced in 1906 and remained as a permanent feature of Brazilian coffee policy until 1989. The monograph shows that thanks to Brazil's valorization policy, coffee was the only primary product that managed to escape Prebisch's curse in the 20th Century. While the real prices of all other commodities trended downward, the opposite occurred to real coffee prices. A graph in the monograph indicates the remarkable fact that the ratio of coffee prices to an index of commodity prices tripled along the 20th Century.

But in the end, the monograph's evaluation of Brazil's coffee valorization policy is very negative. Because of it, coffee remained the country's dominant export product for over 100 years, even as Brazil continuously lost its world market share to other coffee producers. Brazilian goods other than coffee simply could not compete in foreign markets, as an overvalued currency was the counterpart to coffee valorization. The consequence was a dramatic reduction in the ratio of total exports to GDP. This shrank from 20.6% in 1906, when coffee valorization was introduced, to a mere 3.3% in 1964, when coffee finally lost its dominant position in Brazil's exports. Under such a dwindling foreign exchange supply, the so-called national similar policy took over. It essentially meant that products with a national similar could not be imported. Since they were also too expensive to be exported, local import substitutes in practice became non-tradable products, and the foreign exchange generated by coffee was reserved for the import needs of this highly protected national industry. At the ideological level, there was permanent warfare between a rural-based-elite complaining against an "artificial" and expensive industry; and an urban-based-elite claiming that protection was needed to industrialize the country. But the elites found common ground in the defense of an overvalued exchange rate that kept the dollar prices of coffee high and the local costs of non-competing imported inputs low. An implicit alliance between the interests of coffee growers and local industrialists thus developed which easily defeated the attempts by finance minister José Maria Whitaker at doing away with the coffee valorization policy and the multiple exchange rate system in 1955. This was the final defeat of an export-oriented view of economic growth, and the triumph of the opposite view, that became explicit under President Kubitschek (1956-60), to deepen the import substitution process while maintaining coffee's supremacy in Brazil's export bill. Nowadays, Brazil is no longer dependent on coffee as other commodities gained importance in the country's export bill; but its shrinking industrial sector remains inward-looking, uncapable of competing in foreign markets.

7. High inflation and stabilization policies in Brazil

Next in line are my papers on inflation and stabilization policies, including my policy reflections as an inflation-fighter. I start in the late 1970s to provide the right flavor on the evolution of my thinking on Brazil's inflationary process. Back then, before the 2nd oil shock and the Volker's interest rate shock, Brazil's yearly inflation was very high but relatively stable at the upper two-digit level. The role of backward-looking wage indexation and orthodox stabilization policies were the main topics of discussion.

In 1980, I published a paper in *Revista Brasileira de Economia* (Bacha 1980b), which later I expanded into a full book (Bacha 1982b) with the ambitious (but in the end frustrated) purpose of building a neo-structuralist inflation-and-growth textbook model[4]. One basic assumption was a classical savings function (according to which only capitalists save because workers' marginal propensity to consume is equal to one). Another basic assumption was that, because of lagged-wage indexation, there was a negative relationship between the inflation rate and the real wage. Comparing two equilibrium positions at full capacity, the equilibrium with a higher investment rate had a higher inflation rate and a lower real wage. The intent was to describe in a simple model the mechanics of the wage squeeze that accompanied Brazil's 'economic miracle' of the 1970s.

In a subsequent joint paper, Francisco Lopes and I wrote a much more elaborate model for the interactions of inflation, growth and wage policy (Lopes and Bacha 1983). The paper—published as the leading article of the August-October 1983 issue of the *Journal of Development Economics*--incorporated the inflation tax in the model. It also provided a rationale developed by Lopes, based on the mechanics of Brazil's wage policy, for the inflation-to-wage relationship posited in the previous text. The paper argued that orthodox stabilization policies—as exemplified by an autonomous reduction in the rate of monetary growth—implied both a temporary and a permanent decrease in output growth, if the wage formula as in Brazil provided for lagged price indexation.

[4] I had more success with a related textbook on macroeconomies for undergraduates, which went through eight editions in Brazil (Bacha 1982c).

After the 2nd oil shock and the Volker's interest rate shock, the nature of the debate changed. Brazil's inflation accelerated and reached 200% per year in 1983. At the political level, the military were finally stepping down and a democratic regime was scheduled to take over in 1985. In 1984, I was teaching at Columbia University while a debate raged in Brazil on how to cope with an inflation process seemingly out of control. Gone were the days when the debate was about gradualism versus shock treatment. The question was what kind of cold turkey therapy to apply once democracy was reestablished. Octávio Gouvêa Bulhões proposed an "orthodox shock" (Bulhões 1984) to which Francisco Lopes replied with a "heterodox shock" (Lopes 1984). Persio Arida argued for full price-and-wage indexation (Arida 1984). André Lara-Resende caused furor with a proposal for the introduction of a parallel fully-indexed currency (Lara-Resende 1984).

What I did at the time was to manifest my skepticism with a new fable, T*he end of inflation in the Kingdom of Lisarb* (a place where everything worked backwards, including the country's own name) (Bacha 1985a). The fable consisted of a lively but inconclusive debate among economists of different persuasions on how to fight inflation. At the end of it, Seven, the newly elected king of Lisarb, persuades himself that, as a social issue, inflation could not be resolved only with mathematics or ingenious formulations. He understood that economics helped but he also became convinced of the importance of his political leadership. Unfortunately, in the real-world Tancredo Neves (who had been elected Brazil's first president after the redemocratization) died before taking office and Brazil had to wait another ten years before a new political leader of equal caliber, Fernando Henrique Cardoso, could make use of the talent of local economists to put an end to Brazil's superinflation.

In the meantime, the country went through the 1996 Cruzado Plan, an unsuccessful price-and-wage freeze of which I participated, plus a series of other failed heterodox inflation-stabilization experiments. While I was a member of the government economic team responsible for the Cruzado plan, I managed to produce a couple of papers on inflation stabilization.

The first was another fable, written before the introduction of the plan. In *Inflaflução*[5], I used James Tobin's (1981) metaphor comparing inertial inflation to a stadium where everyone stands up to see the spectacle, the problem being how to get people to sit down. The idea is that there are two equilibria, a bad one with inflation (everyone standing up) and a good one without inflation (everyone sitting down); but people are stuck at the bad equilibrium. I suggested that to solve the collective action problem the referee should stop officiating the game for a moment, and whistle to the audience, thus making everyone sit together at once (Bacha 1985c). Much too easy a solution, as the failure of the Cruzado price-and-wage freeze would show. Many unanticipated problems were at play. The main

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[5] The term interjects Brazil's foremost soccer competition rivalry-–Fla(mengo) vs Flu(minense)--in the Portuguese word *inflação*.

one was the political difficulty of converting wages into a new currency by their mean values in the previous six-months. The accusation proliferated that the government was practicing a “wage squeeze”, even as the original decree added a bonus of 8% to all converted wages (15% in the case of the minimum wage) and guaranteed that they would be readjusted when the post-plan inflation reached 20%.

The generosity of the wage conversion mechanisms plus the end of the inflation-tax (not compensated for by an equivalent reduction in the government deficit) generated a massive excess demand for goods and services, which made adjustments to the price freeze inevitable. In a paper written in June 1986, I tried to explain both the merits of the Cruzado plan and the challenges that it faced, but in fact the goods scarcity problems went much deeper than I could publicly recognize (Bacha 1986a). Moreover, the government decided to postpone a softening of the price-freeze until the November 1986 general elections were over. The decision paid up handsomely politically, but was disastrous from an economic point of view. When a poorly conceived price-adjustment was finally implemented at the end of 1986 it was too late. The wage trigger was activated and inflation returned at higher rates than before the plan.

Back in academia, I received an invitation to give the Master Lecture at the December 1987 yearly meeting of the Brazilian Association of Graduate Economic Centers (ANPEC). There I presented my reflections on the policy debates on inflation stabilization in Brazil, based on the failed orthodox and heterodox attempts at inflation stabilization since the early 1980s (Bacha 1988a). I identified three schools of thought on the nature of the inflationary process in the country: monetarism, inertialism, and “conflictism”. I discussed the concepts of nominal vs. operational public sector deficit; expectations vs. inertia; inertia vs. conflict; and active vs. passive money. I argued in favor of a social pact to overcome the distributive conflict; of measures to prevent the monetization of the public debt by the Central Bank; of fighting the operational public sector deficit while promoting the deindexation of the economy. Future stabilization programs, I concluded, will need to incorporate the lessons of each of three contending schools to be able to make inflation stabilization compatible with democracy and economic growth.

In the same spirit but with a broader scope, there followed a review of the lessons of stabilization programs in developing countries in the 1980s. Co-authored with Dionisio Dias Carneiro, this paper was the basis of a report of the General Secretariat to the United Nations General Assembly in 1991 (Bacha and Carneiro 1993). It declares in an optimistic mood that there was a reduction of divergences between previously irreconcilable approaches. This professional convergence, the paper argued, was in part a reflection on the failures of extreme versions of both orthodox and heterodox programs. But, in part, it was also a reflection on the successes of experiences that manage to combine orthodox and heterodox components as Israel in 1985 and Mexico in 1987. The paper then discusses a series of new elements that were incorporated to the old debates: shocks vs. gradualism, public sector reform, industrial policy, temporary price controls, and nominal anchors. It concludes with recommendations for the IMF and the World Bank policy-based loans.

My last paper on inflation stabilization previously to the 1994 Real Plan was a Master Lecture at the exams for a full professorship at the Department of Economics of the Federal University of Rio de Janeiro (Bacha 1994). The paper offers a novel approach to the fiscal nature of inflation in Brazil. It argues that inflation was important for the Brazilian government not only for the generation of the inflation-tax but also and perhaps more importantly because it eroded in real terms the expenditures included in the budget. It did this without affecting the tax collection in real terms, because, in contrast to the budgeted expenditures that were fixed in nominal terms, taxes were protected against inflation by the daily readjustments provided by the so-called Fiscal Unit of Reference (UFIR). This would explain the paradox of a very high inflation rate accompanied by a very low primary public sector deficit. This deficit was small only because of the real spending contraction provided by high inflation itself. An implication of the argument was that, to stop inflation, one would first need an alternative mechanism to reduce part of the expenditures authorized in the budget. Since in Brazil nominal spending was legally very rigid implementing this mechanism would require a Constitutional amendment.

In an appendix to this paper, an alternative inflation model is presented. Its dynamics are determined by the fact that most of the relevant money supply is remunerated according to inflation itself. This is an attempt at modeling the "monetary correction" mechanism of the public debt that served as a financial backing for interest-earning bank deposits. On the assumption that broad money is the determinant of inflation, the paper argues that this remuneration multiplied the effect of the primary deficit on inflation, thus being an alternative explanation of why a small primary deficit could generate such a big inflation. The implication is that inflation might be dealt with by a credible monetary reform program that eliminated the monetary correction on the public debt. But credibility was fundamental, for otherwise the result of such an elimination could simply be to lead the economy into a hyperinflation path.

The paper provided relevant ingredients for the implementation of the 1994 Real Plan, which did away with Brazil's high inflation. My evaluation of this plan appeared in several installments starting in 1995 but with a final version only in a 2003 Festschrift volume in honor of Lance Taylor (Bacha 2003a).

The paper initially describes the political and economic context of the plan's introduction. It then goes over its three phases: the constitutional mechanism for fiscal adjustment, known as the social emergency fund; the device for the unification of the indexation system, known as the unit of real value; and finally, the transformation of this unit into the Real, the new Brazilian currency, in July 1, 1994.

The paper emphasizes that each of the three phases was pre-announced and submitted to the Brazilian Congress for approval. It stresses fundamental characteristics of the plan: de-indexing preceded by full-indexation; sharp stabilization without a price freeze or a debt repudiation; flexible monetary and foreign exchange policies; and absence of economic recession. Contrary to some simplistic interpretations, it stresses that the plan was much more than a mere foreign exchange based stabilization. It also explains how the dollar anchor was used and why a dollarization path was avoided.

It then reports on the disequilibrium between aggregate demand and supply generated by the plan, and discusses the policies adopted in 1985-86 for its correction. The paper concludes that the Real Plan was successful in bringing inflation down and keeping it there. But also that, contrary to my initial hopes, stabilization was insufficient to set the Brazilian economy in a sustained GDP growth path. I should have known better. My own research on Brazil's see-saw growth experience clearly showed that other obstacles remained to be dealt with.

8. Interpretations of Brazil's growth experience

One of these obstacles was the incomplete transition from a social point-of-view that Brazil had gone through, while moving from a mostly rural society in the 1940s to a fully urban economy in the mid-1980s. This was the object of a seminar that Herbert Klein and I organized at Columbia University, while I was teaching there in 1983/84. The resulting book (Bacha and Klein 1989) is a survey of the structural changes and government policies that shaped the nature of contemporary Brazilian society. The authors of the volume deal with the macro-social changes that occurred in population growth, the previously dominant rural sector, and the major growth of urban centers. Next, they survey the consequences of these changes in terms of the evolution of the occupation structure, the patterns of social mobility, and distribution of income. Finally, they examine the history of social welfare, education and health care. The theme that runs throughout the volume is the enormity of changes that had taken place and the incompleteness of the process, especially in terms of social outcomes. In too many areas, and because of the nature of government policies, Brazil deserved indeed to be called a Belindia, that is a regionally and class defined society comparable to Belgium, but coexisting with poorer, more rural, and more northern part of the country comparable in most respects to India.

Dealing with the social maladies of Brazil is the object of another book that I edited with Simon Schwartzman (Bacha and Schwartzman 2011). In it, we found that Brazil spends with so-called social policies similar values as those of richer economies, such as the UK or the USA. Notwithstanding, the results of these policies in terms of population welfare are nowhere to be found. Moreover, although the coverage of these policies has improved a lot—all children are now in schools, for example—the quality of this coverage is very bad. We identified that Brazil's population will go through a very rapid aging process in the first half of the 21st century. Consequently, the required social policies will be not only more complex but also more expensive. We then summarized the lessons of the book chapters to deal with such challenges in the fields of health, social security, social assistance, education, and public security. Characteristics of this new social agenda are fairness, with the poor having privilege of access to social security; realism, with an explicit recognition of the overall government budget constraint; and effectiveness, with a responsible and consequential management of public resources.

Beyond the quest for social fairness, there stood the problem of growth sustainability. In early 1993 Bolivar Lamounier and I wrote an historical essay that stressed Brazil's democratic roots but recognized the difficulties the country had experienced in the past with democratic reformism. High growth periods occurred under authoritarian regimes: Vargas' regime in 1930-45 and the military dictatorship in 1964-1985 (Lamounier and Bacha 1964). The inheritance left by these regimes was, however, an inward-looking, inflation-prone, and extremely socially-unequal economy. The paper notes the difficulties of making economic reforms in the context of the democratic 1988 Constitution, which strengthened the power of special interest groups entrenched in the government apparatus. Contrary to prevailing pessimistic conceptions, however, and based on our relatively-optimistic interpretation of the historical record, we argued that the most plausible scenario for the 1990s was a convergence between democracy and economic reforms, leading to a more liberal economy, inflation control, and social inclusion. At least temporarily, this relative optimism was vindicated by the successful implementation of the 1994 Real plan and the subsequent election of Fernando Henrique Cardoso as Brazil's president (1995-2002).

The Real plan succeeded in doing away with inflation, but as mentioned it failed to restart a rapid growth process. Part of the reason were the very high real interest rates that continued to prevail after the plan. In 2003, Persio Arida, André Lara-Resende and I wrote a paper with a new interpretation of why real interest rates remained so high in Brazil (Arida, Bacha, and Lara-Resende 2005). The fundamental perception was that Brazil did not dollarize, contrary to all other emerging market economies that went through hyperinflationary processes—in both Latin America and Eastern Europe. Dollarization, we argued, was the obvious path for countries that suffered from "jurisdictional uncertainty". We introduced this term to indicate the difficulties face by a local currency to establish itself as a reserve of value in a jurisdictional context in which financial contracts tend not to be honored. The generalized use of Brazil's own money (instead of the dollar) in a context of jurisdictional uncertainty was the reason, we argued, why a local long-term financial market did not prosper and short-term interest rates were so high. We stressed that we were not defending dollarization, for this tended to provoke other maladies as clearly shown by the case of Argentina. Instead, we were making a case for a direct attack on the institutional and legal structures that supported the country's jurisdictional uncertainty.

The paper generated intense debate in Brazil. With Fernando Gonçalves and Marcio Holland, I attempted to test its hypotheses in a panel-based econometric exercise. But we failed to establish a direct link between the real interest rate and variables purporting to measure jurisdictional uncertainty, even after allowing for dollarization (Bacha, Holland, and Gonçalves 2009a; Bacha, Holland, and Gonçalves 2009b).

The original paper, however, remained as an important contribution for the debate on high interest rates in Brazil. It was at the origin of three-book series on Brazil's capital markets that IEPE/Casa das Garças produced between 2005 and 2007 (Bacha and Oliveira-Filho 2005; Bacha and Oliveira-Filho 2006; Pinheiro and Oliveira-Filho 2007). In these books, economists associated with the Casa das Garças think-tank plus practitioners in Brazil's financial markets analyzed the relationships between local capital markets' expansion and Brazil's economic growth; the role of public debt in the (under)development of Brazil's capital markets; and the interaction of government-owned banks (particularly BNDES) and the expansion or lack thereof of Brazil's capital markets. I coedited two of the three books and contributed short-papers or introductory notes expanding on the topics originally developed in the Arida-Bacha-Resende paper. The three-book series became standard references in academic courses in Brazilian universities and were influential in economic policy-making in the country.

A few years later, I returned to these topics in a paper written for a book that I edited with Monica de Bolle to honor the memory of Dionisio Dias Carneiro. In this paper (Bacha 2011), I adopted a policy-oriented approach on how to reduce the real interest rate and suggested a sequential program with five sets of measures, of which the first was certainly the most important:

(i) establish a ceiling on the expansion of public sector expenditures and link the public sector banks' credit to the Central Bank's monetary policy stance;
(ii) pledge part of the international reserves as a guarantee of the domestic public debt;
(iii) include price stability among the permanent economic objectives in the Constitution, and define a long-term inflation target;
(iv) create a new regime for the indexation of administered prices based on the long-term inflation target; and
(v) liberalize financial investments abroad.

This paper was written while the Central Bank under President Dilma Rousseff (2011-2015) was in the process of reducing the basic interest rate despite a rising inflation rate that had already reached the top of the target range. I quipped that if this “strategy” did not work, as it didn’t, my more fundamentalist propositions could be given a try (Bacha 2012, 22). In fact, after Ms. Rousseff was impeached, the interim Temer government (2016-2018) introduced legislation freezing inflation-adjusted federal government spending for 20 years and making the subsidized interest rate charged by the National Development Bank (BNDES) to depend on the yield of the 5-year Brazilian Treasury bill. With the help of a large output gap and a sizable food crop, at the time of writing in late 2017 inflation is down to 3% p.y., and the real interest rate is equally down to 3% p.y., but the country’s economy is still a long way from full recovery.

High real interest rates were not the only reason why Brazil’s GDP growth rate remained below par. Regis Bonelli and I tackled other relevant issues from a national accounting perspective, in a paper with several installments starting in 2005. The most recent version was published in a 2016 Festschrift volume in honor of Roberto Frenkel (Bacha and Bonelli 2016a). The paper is an empirical investigation of the reasons for the collapse of GDP growth rates starting in 1981. Initially we show this to be associated with a simultaneous collapse in capital accumulation, or the net fixed investment rate. The paper develops a formula that splits the net fixed investment rate into four components (besides the capital depreciation rate): the savings rate, the ratio between the implicit deflator of investment and the implicit deflator of GDP, the degree of capital utilization, and the output to capital in use ratio.

Based on this decomposition, a first conclusion emerges from an analysis of the national accounts: contrary to widely-held views, only a very small part of the collapse of capital accumulation can be imputed to a reduction in the savings rate—as this remained practically constant in the pre- and post-1980 periods. The culprit of the collapse is a sharp rise in the relative price of investment. Of similar importance is a rise in the capital (in use)-to-output ratio. This second phenomenon may be explained by the increased complexity of the Brazilian economy since 1980. As for the increase in the relative price of investment an empirical analysis shows that it had its roots in an inefficient capital-goods import substitution and also in a slow pace of productivity growth in the domestic construction industry.

A GDP growth rate sufficiently rapid to catch-up with the developed economies continues to elude Brazil. In a new essay in persuasion (Bacha 2013b), I argued that an unrecognized part of the problem lied in the diminutive participation of Brazil in world trade. As a consequence, Brazilian firms particularly in industry and services lacked the scale, the technology, the inputs, and the competition needed to speed up growth. I pleaded for the introduction of a three-pronged policy program—namely, a reduction of the so-called Brazil’s cost; the substitution of foreign-exchange protection for tariff protection; and international trade deals—as a basis for the incorporation of the country's economy into the global value chains.

A critique to this proposal is that opening-up had not been sufficient to make Mexico prosper. Regis Bonelli and I took up this issue in a paper comparing the growth experiences of Brazil and Mexico (Bacha and Bonelli 2016b). Both macroeconomic and structural variables are taken into account. We showed that the traded-goods sector did much better in Mexico than in Brazil. However, this dynamism did not propagate to the non-traded-sector, the productivity of which grew much more slowly than in Brazil. We concluded that, besides foreign trade integration, domestic social and regional integration was a necessary ingredient for growth to resume in large economies such as Brazil and Mexico.

9. Conclusions

The conclusion of this survey of my intellectual production on the economics of Brazil and Latin America is that the glass is half-full, half-empty.

Half-full because Brazil and Latin America in general face today problems of a higher order than those at the start of my career as an economist. By and large the social and political cleavages in society are nowadays being dealt with by democratic means, not by military interventions. The region's social indicators have seen huge improvements, and Latin American economies have modernized beyond what one would have thought possible 50 years ago. Finally, the economics profession in the region has grown much larger and more sophisticated—when I started there were only a few economists with Ph.D. degrees in Latin America. This gives hope for improved economic policy making in a democratic context.

Hyperinflation, failed stabilization experiments, sharp dollar constraints, acute external debt crises, and policy fights with the Fund and the Bank—problems that dominated economic thinking in my generation--seem to have been left in the past. It pleases me to have been able to participate as an intellectual and a policy-maker in the resolution of some of these problems.

The glass is half-empty because through import substitution industrialization the region succeeded in overcoming the poverty trap and reached middle-income status. But then, it was unable to make the next step, which was the development of an internationally competitive industrial-and-services sector. Agriculture and mining modernized and diversified themselves, but industry and services remained by and large inward-looking, and premature deindustrialization took over. The region seems stuck in a middle-income trap with per-capita income levels averaging less than one-third of those of the US.

Despite recent advances, Latin America remains as a region with the highest levels of income inequality in the world. If, as one hopes, it opens up to international trade and incorporates more advanced technologies to catch-up with the developed economies, the social problem of those left behind will tend to become even more pressing than in the past. Moroever, as elsewhere, population is rapidly aging in Latin America. This means that the fiscal crises that already torments the region will pose a heightened threat to its future economic stability. Much remains to be done to fill up the glass. These are the challenges facing Latin America in the 21st Century.

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