

On the economics of development: A view from Latin America

EDMAR BACHA¹

The present paper is a survey of my research on development economics, presented in the context of the historical experiences of Brazil and of Latin America more generally, and the evolving intellectual landscape in the field.

My research has maintained a continuous critical dialogue with the theses of “practical orthodoxy.” Carlos F. Díaz-Alejandro and I once quipped that practical orthodoxy is self-assured, in contrast to academic orthodoxy, which tends to be flexible and agnostic.

Practical orthodoxy is what puts the system to work and typically sets the tone of center economists’ advice on policymaking in the periphery (Bacha and Díaz-Alejandro, 1982). As illustrated by the once-famous IMF [International Monetary Fund] “financial exercises,” practical orthodoxy is prone to apply ready-made textbook formulas independently of institutional context. In counterpoint, my research involves an effort to understand the institutional particularities of the issues I dealt with before applying the toolkit of economics to help improve social outcomes. As I wrote in 1986, 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 [Raúl] Prebisch, [Celso] Furtado, [Juan] Loyola, and [Aníbal] Pinto”² (Bacha 1986c, p. 7).

In addition to the introduction, the survey is organized into sections that discuss my papers in seven broad areas: commodities, industrial policies, income distribution, dollar scarcity, debt crisis, inflation, and Brazil’s growth. The sections are ordered roughly according to the date of the first paper that I wrote in a specific area. I strove not only to summarize the papers’ contents but also to describe the problems I confronted and my proposed solutions to those problems. Whenever feasible, I provided some situating in the literature both at the time of writing and in the present.

Section 1 looks at the ups and downs of commodity markets. My main concern in this area was Brazil’s century-long experience with coffee valorization and its consequences for the international coffee market and the country’s development pattern (Bacha, 1969; Bacha, 1992b). My main point was that coffee valorization was inextricably linked to Brazilian policymakers’ desire to anchor domestic prices through an overvalued exchange rate. In the long run, this policy expelled products other than coffee from Brazil’s export bill and

¹ Founding partner and director, Casa das Garças Institute of Economic Policy Studies, Rio de Janeiro, Brazil, e-mail: ebacha@iepedg.com. With the usual caveats, I am indebted for comments to André Lara Resende, Roberto Zagha, and two anonymous referees.

² Latin American economists at the origin of United Nations Economic Commission for Latin America (UN/ECLA).

generated an extreme dollar scarcity that was resolved by a policy of indiscriminate protection of an inward-looking industry. This ill-advised policy is at the origin of Brazil's extremely limited participation in global value chains.

Section 2 refers to industrialization policies and cost-benefit analysis, topics that originally attracted my attention in the 1970s. My interest was on price-distortions in developing countries, which led me to propose a mathematical expression for the shadow price of foreign exchange (Bacha and Taylor, 1971) and empirical estimates of the shadow prices of labor, capital, and foreign exchange in Brazil (Bacha, 1977). The policy's purpose was to push for a more labor-intensive and export-oriented development strategy (Bacha, 1972).

Section 3 considers my work on income distributions also in the 1970s. In that decade, a fierce debate was raging 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 instead I emphasized 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 4 examines the dollar constraint, a topic that was central to the Latin American structuralist school, and on which I wrote a series of papers starting in the 1980s. These consisted of a reinterpretation of the two-gap model, inspired by the Mundell-Fleming macro model (Bacha, 1984a); a fix-price disequilibrium balance-of-payments model to analyze the postures of the IMF and UN/ECLA on the nature of balance-of-payments deficits in industrializing countries (Arida and Bacha, 1987); and an argument based on the dollar constraint to measure the contribution of foreign capital to the recipient country's growth rate by 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 thesis on external strangulation (Bacha, 2003b) and 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. I expanded on a Balassa decomposition exercise (1983) to distinguish between external shocks and domestic variables at the origin of this crisis (Bacha, 1986b). I also spelled out the model behind the IMF "financial exercises" and offered a set of "growth exercises" to supplement the IMF medicine (Bacha, 1987b). 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 structural-adjustment policies of the IMF and the World Bank 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 "fiscal constraint" becomes the dominant impediment to growth (Bacha, 1990a).

Section 6 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) appropriate conceptualization of

inflation-adjusted budget deficits when the public debt is indexed to inflation as was the case in Brazil (Bacha, 1988a), (ii) 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 in balancing the budget through a reverse Olivera-Tanzi effect (Bacha, 1994). My involvement with inflation stabilization was not only intellectual but also practical, as I participated as an economic adviser to the government in both the failed 1986 Cruzado stabilization plan (Bacha, 1987a) and the successful 1994 *Real* plan (Bacha, 2003a).

Section 7 presents my interpretation of Brazil's growth record. Lamounier and Bacha (1994) review the role of political authoritarianism and obstacles to democratic reformism in Brazil since the 1930s. A book that I co-edited with Herbert Klein examines structural aspects of Brazil's rapid industrialization coupled with an incomplete social change in the 1945-1985 period (Bacha and Klein, 1989). Another book that I co-edited with Simon Schwartzman analyzes the limitations of and alternatives to Brazil's inefficient and expensive social policies (Bacha and Schwartzman, 2011). My research on Brazil's see-saw growth record include introduction of the concept of "jurisdictional uncertainty" to explain the country's extremely high real interest rates (Arida, Bacha, and Resende, 2005) as well as a growth accounting framework that reveals the importance of the sharp rise of the relative price of investment to explain the collapse of Brazil's growth after 1980 (Bacha and Bonelli, 2016a). In an essay that focused on the high degree of inwardness of the Brazilian economy, I formulated a policy program to integrate the country to global value chains as a means of restarting its stuttering growth machine (Bacha, 2013). Section 8 presents the final conclusions.

1. Coffee valorization and commodity booms

In 1968, I completed my Ph.D. dissertation on an econometric model for the world coffee market (Bacha, 1969) at Yale University. My focus was on Brazil as the market's price-setter. A relevant contribution involved what I called "politimetrics," the study of economic-policymaking rules with the use of econometric techniques. I tested the hypothesis that Brazil set the world's coffee price midway between the value that maximized its coffee-export revenues and the value that minimized net outlays of the Brazilian government to acquire the surplus of coffee production over exports. My econometric evidence showed this indeed to be the case, with the weights of each objective dependent on size of existing coffee stocks.

In 1992, I returned to the topic of my dissertation and wrote a monograph on the historical role of coffee in the Brazilian economy (Bacha, 1992b). Coffee valorization was introduced by Brazilian policymakers in 1906, and it remained 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 was true for 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 in the 20th century.

In the end, however, the monograph's evaluation of Brazil's coffee valorization policy is extremely negative. Because of the policy, 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 result was a dramatic reduction in the ratio of total exports to GDP. This ratio 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 local import substitutes were also too expensive to be exported, in practice they 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 hostility between a rural-based elite complaining about 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 local costs of non-competing imported inputs low. Nowadays, as other commodities have gained importance in the country's export bill, Brazil is no longer dependent on coffee. But the country's shrinking industrial sector remains inward-looking, incapable of competing in foreign markets.

The commodity boom of the early 2000s was the subject of a paper I wrote with Albert Fishlow for *The Oxford Handbook on Latin American Economics* (Bacha and Fishlow, 2011). The first part of the paper presented a review of 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, although good institutions were hard to come by along the ups-and-downs of the commodity cycles. We also reviewed the experiences of Argentina, Brazil, Chile, and Venezuela with management of their natural resources. We found a complex set of policies, with Chile presenting the best lessons and Venezuela the worst, Brazil feeling its way with its newly found oil riches, and Argentina unable to overcome economic volatility. The unsurprising conclusion was that for a country to benefit from a commodity boom, sensible policies were a necessary co-ingredient. Brazil's subsequent mismanagement of its oil wealth, which led to the worst corruption scandal in the country's history, soon confirmed how much good policies mattered.

2. Social cost-benefit analysis and industrialization policies

In 1968–69, I was a member of an MIT-Harvard team helping the Chilean government planning office to formulate economic development policies. In those days, shadow pricing had become quite popular in the economic planning community as a means of introducing social cost-benefit methods into the analysis of government-sponsored investment projects. Dynamic general equilibrium models were then too cumbersome and unreliable for the computation of shadow prices. A search was on for simpler, more sensible alternatives that could be implemented with the data and computing power available at the time.

It was in this context that I wrote a paper with Lance Taylor that evaluated existing methods to estimate the shadow price of foreign exchange.³ In the paper, we proposed a simple formula to compute 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 formula became a useful tool not only for social cost-benefit analysis, but also to evaluate the impact of tax distortions on exchange-rate levels, and to estimate the exchange rate that policymakers should aim at in the context of a liberalization of trade flows. The paper was published as the lead article in the May 1971 issue of the *Quarterly Journal of Economics* (Bacha and Taylor, 1971).

In Chile, I became very impressed with the reluctance of Venezuela to open up its economy to its partners in the Andean Group. The reasoning was that this would cause deindustrialization in the country. As a result, 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 in this second-best context, an ideal ordering of trade policy alternatives was 1) tariff preferences in industrial countries’ markets; and 2) either a customs union or industrial-exports subsidies. Industrial deepening (as preferred by Venezuelan policymakers) was a poor third choice.

At the end of 1969, I moved to Rio de Janeiro and worked for a couple of years at the Institute for Applied Economic Research (IPEA), where I produced a book-length study on the shadow prices for capital, labor, and foreign exchange in Brazil (Bacha et al., 1971; Bacha, 1977). The idea, which never came to fruition, 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 Brazilian National Development Bank (BNDES). The shadow price of unskilled labor was one half of its market price in the country’s poorer Northeast, and two thirds 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.

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 policymakers to emphasize a capital-intensive import substitution

³ The paper points out that economic theorists suggested three distinct approaches to estimating the shadow exchange rate: (i) the foreign exchange shadow price should reflect the value in terms of welfare to the economy of an additional dollar; (ii) it should reflect the opportunity cost of a dollar in other uses; and (iii) it should be the “equilibrium” exchange rate. The latter is the approach we recommend for use in investment project analysis (see Bacha and Taylor, 1971, p. 198).

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 included in Gerard Meyers's (1996) *Leading Issues in Development Economics*, I surveyed the literature on the relationship between agriculture and industry along the development process (Bacha, 1980a). The paper integrated strands of the literature, providing a framework for understanding the evolution of economic thinking on agricultural-industrial relations in this context. I pointed out that, in earlier analyses, agriculture played a subordinate role to industry. Its function was to provide 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 toward industrialization. More recently, I pointed out that this strategy was correctly criticized with the argument that agriculture itself was a source of modernization and technical progress. "Getting the prices right" then became the new mantra, in the sense of rapidly adopting price policies that did not discriminate against the agricultural sector. The paper, however, advises against abrupt changes in this direction and favors gradualist approaches that are respectful of the structural rigidities characteristic of developing economies.

3. Income distribution

In 1972, Albert Fishlow published an essay on Brazil's income distribution (Fishlow, 1972). The technocrats of Brazil's military regime (1964–1985) were furious with this paper because it attributed the worsening of income distribution in the country during the 1960s to the repression of labor unions and the wage squeeze practiced by the military from 1964.⁴ Their response 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, 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 remuneration for managers (defined as workers occupying positions higher up in the firms' hierarchy ladder) was more closely associated to profit rate than to rate of return on education. I then used several private wage surveys to try to disentangle the remuneration of managers from that for high-skilled line laborers, which provided 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 labor economics. Recently, more elaborate views on the operation of the labor market came into vogue to analyze the worsening of the income distribution in industrial countries. For example, Muller, Ouimet, and Simintzi (2017) show that UK firms that exhibit high relative wage differentials between the 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

⁴ Independently, Hoffmann and Duarte (1972) made a similar point.

higher profits to the efforts of more talented managers. Fortunately, from my point of view, the authors made clear 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 compression in the 1960s was a crucial factor in the income concentration in the country. We were naturally contradicting the alternative hypothesis that this concentration had to do with 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 behind the inflation rate by government design. The population deciles with incomes significantly below the minimum wage (mostly rural laborers) had not suffered as much. But again, in those days, the competitive labor market hypothesis prevailed and the human capital theory was already all powerful. In the end, the professional view was that Lance Taylor and I were adopting a "political" stance, as opposed to the "scientific" stance 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 determining income distribution. This shift is clear in papers discussing the importance of minimum wage for evolution of earnings distribution in the U.S. (Autor, Manning, and Smith, 2016; Dube, 2017). For Brazil, a recent paper (Engbom and Moser, 2017) argues that up to 70% of the improvement in 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 persuade the profession about the role of government policies in 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 endeavor was the first and most famous of my economic fables: *The King of Belindia* (Bacha, 1974b). In the story, 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. 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. In contrast, both the poor-based and democratic-based ones yielded extremely 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 fable, published in 1974 in one of Brazil's opposition newsweekly, was an immediate 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 constancy of the real wage in earlier phases of development was popular in Brazil, there had never been an empirical attempt to test this hypothesis in the country. Drawing from multiple sources, I compiled wage series for Brazil's urban and rural sectors since the 1940s. Based on this newly constructed data set, I wrote a paper showing that the urban-to-rural wage ratio had historically been highly sensitive to the price ratio between urban and rural products (Bacha, 1982a). That is, contrary to the Lewis hypothesis, in the past there had been a marked segmentation between urban and rural labor markets. This segmentation was valid for the 1940s and 1950s. In the 1960s, the trends in the urban-to-rural wage differential were dominated by political and institutional factors, namely, 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 less sensitive to the food-to-manufacturing price ratio. Historically, one observed a trend toward shrinkage of the urban-to-rural wage differential, without any real wage gains by the unskilled urban labor force over the period. In the end, the paper vindicated Lewis's hypothesis but also stressed the crucial role played by labor-market government policies.

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

My work with inequality included a concern with distribution of gains from trade. Several authors at the time argued that the gains from trade between the center and the periphery of the world economy were asymmetrical. But a synthetic analysis of these theories was not available. In Bacha (1978), I attempted to provide such a unified framework. This paper consisted of a full-specialization two-country trade model that discussed the trade pattern between the center and the periphery. The paper puts together trade themes developed by Arghiri Emmanuel (1969), Harry Johnson (1955), Arthur Lewis (1954), Raul Prebisch (1950), and Hans Singer (1950). The center specializes in a good with a high income-demand elasticity, and the periphery in a good with a low price-demand elasticity (these are the assumptions in both Harry Johnson's impoverishing growth model and Prebisch-Singer's thesis on the center's appropriation of the periphery's productivity gains).

According to the Lewis labor surplus condition, the real wage in the periphery was fixed at the subsistence level. 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 growth in the periphery leaves the wage-rate there invariant while reducing employment in the periphery's modern sector. By contrast, in the center (where full employment occurs), technical progress results in higher wages. In this

asymmetrical trading world, there is no shade of cross-country income convergence. The paper was published as the lead article in the December 1978 issue of the *Journal of Development Economics*.

4. Dollar constraint

Growth limited by the availability of foreign exchange was a central topic in Latin America's structuralist thought. In development literature, it gained popularity 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 terminology from the Mundell-Fleming textbook macro model for a small open economy (Bacha, 1984a). I interpreted the savings-gap as the condition for internal equilibrium (or full-capacity utilization) and the foreign-exchange gap 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 lower GDP growth rate 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 to analyze balance of payments regimes in an emerging-market economy (Arida and Bacha, 1987). In the 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 fluctuates between a classical-deficit and a structural-deficit situation, where these policy regimes are identified, respectively, with the IMF doctrine and 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 rather 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 again arose 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 Postgraduate Programs in Economics (ANPEC). The text—which I dubbed "post-ECLA"—looked at the evolution of non-traditional economic thinking on inflation and external crisis in Latin America since the 1949 Prebisch manifesto (Bacha, 2003b).

On inflation (which I will discuss in Section 6), 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 money⁵ 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 fragilities in 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 equally import substitution and export promotion. 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 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 the negative external transfer may occur. In a context of domestically dollarized debts, the domestic currency devaluation 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 foreign investors’ expectations about public debt sustainability, might be more appropriate. The sensitivity of the nature of equilibrium to foreign investors’ expectations is linked to the fact that domestic currency is unconvertible. Because of this inconvertibility, it does not serve as a reserve of value that could be used as collateral for real investment. So the country continued to depend on the mood of foreign investors, in an updated version of the original external-strangulation model.

Another paper during this period was an essay on persuasion written for a roundtable discussion with Joseph Stiglitz and Dany Rodrik at BNDES in September 2002 (Bacha, 2002). The paper, provocatively entitled *From the Washington consensus to the Cambridge dissensus*, starts with the argument that, for their critique of the Washington consensus to fructify, Rodrik and Stiglitz needed to offer an alternative paradigm. This paradigm, I submitted, had to start from the concept of the dollar constraint, centering 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 capital inflows (as it increases the investment risk) and tends to generate periodic foreign-exchange crises.

If the dollar constraint was indeed the main obstacle to sustained growth in emerging markets, the solution might lie in the sphere of finance. One option to escape the dilemma would be to deepen and advance 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 Hirschman

⁵ During the high inflation period in Brazil, bank deposits were remunerated according to inflation and backed by interest-yielding floating-rate short-term government debt. These deposits constituted the bulk of the means of payment. If commercial banks lacked liquidity because of unexpected deposit withdrawals, they had automatic access to a Central Bank discount window without penalty. This is the logic of passive and remunerated money that made the local-currency financial system flow in conditions of high inflation.

(1958)—was equally important. At issue was a reduction in external financial vulnerability, which could be achieved by either increased access to local long-term capital markets or an enhanced exportability of the economy.

The paper concludes that overcoming the dollar constraint did not necessarily imply the substitution of domestic savings for foreign savings. The amplification, through exportability, of Brazil's international collateral, would allow the country safely to hold a higher volume of external debt per unit of output. That is, it could access external savings and accelerate the GDP growth rate through exploration of local investment opportunities.

One occurrence that I did not envisage was the commodity super-cycle that materialized in the following years. This bonanza 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 2008–2009 financial crisis, for the first time in history these countries could implement countercyclical monetary and fiscal policies. These policies allowed Latin American economies to delink themselves from the Great Recession that hit in industrial countries. Costs were measured in terms of extraordinary increases in budget deficits and public debts. The traditional dollar constraint metamorphosed into an acute fiscal crisis. But this was only the final chapter of a story that started with Latin America's debt crisis in the early 1980s and the subsequent IMF-led adjustment policies in the region. My intellectual participation in this story is the subject of the next section.

5. Latin America's debt crisis and IMF policies

With the eruption of the debt crisis in the early 1980s, Latin American countries had to choose between facing the consequences of an international default or swallowing 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 intent” with the IMF, 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 subject 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 an 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 paper was 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 South America's Southern Cone countries (Argentina, Chile, and Uruguay) in the 1970s. The paper's main point is illustrated by 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 external shocks. This framework 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. I also pointed out, however, that faced with adverse external circumstances, the Brazilian government opted for external financing rather than domestic adjustment.

The exercises implicitly assumed that whatever the source of 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 that 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 in International Finance* (Bacha and Díaz-Alejandro, 1982). The tone of the essay reflects an economic and financial outlook for Latin America that is pessimistic in terms of repeating the favorable performance of the 1970s, but optimistic in terms of catastrophic scenarios. If matters became much worse than we anticipated for major Latin American borrowers (as the case turned out to be), the paper suggested that schemes for refunding their debts (as proposed by Fishlow, 1978) would become attractive.

For a conference at the Banco de la República in Colombia, I wrote a paper making a distinction between the “intensity” and “style” of Latin American countries' interactions 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

sparingly. 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 sparingly and under strict controls) managed to avoid the Latin America debt collapse of 1982–1983.

There followed a critical analysis of the interventions of the World Bank and IMF in Latin America in the 1980s (Bacha and Feinberg, 1988). In a nutshell, we criticized these institutions' excessive focus on immediate balance-of-payments adjustment and inflation control at the expense of structural measures to further economic growth in the region. In a paper 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. Separately, in a paper written for the Group of 24 and later reproduced in a book to honor the memory of Sidney Dell (Bacha, 1995), I drew lessons from the debt crisis for adoption of international policy measures that might contribute to the sustainability of capital flows to developing countries.

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, 1990). 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. 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 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 fiscal.

For an international conference in Honolulu on 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 series of structural problems:

- High levels of public-sector external debt contracted at floating interest rates;

- Economic inwardness; that is, low level of industrial exports coupled with high dependence on a handful of primary commodities;
- Lack of flexibility in 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. The paper was a critique of non-inclusive authoritarian economic policymaking in the region, associated with a high degree of external indebtedness. Now, thirty years later, Latin America has recovered from the “lost decade” of the 1980s and currently democracy rules most everywhere. But the region has been unable to overcome the middle-income trap, as at least a dozen industrializing countries outside the region managed to do in the post-WWII period. Lessons from these cases were pointed out in *The Growth Report*, a World Bank-sponsored endeavor (2009) chaired by Michael Spence, in which I participated. The success stories were mostly from Asia and—I quote from 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 allocate resources;
- They had committed, credible, and capable governments.

6. 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 context for the evolution of my thinking on Brazil’s inflationary process. Back then, before the second oil shock and the Volker’s interest-rate shock, Brazil’s yearly inflation was extremely high yet relatively stable (at the upper two-digit level). The main topics of discussion were the role of backward-looking wage indexation and orthodox stabilization policies.

In 1980, I published a paper in *Revista Brasileira de Economia* (Bacha, 1980b), which I later 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. 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 more elaborate model for the interactions of inflation, growth and wage policy (Lopes and Bacha, 1983). The paper—published as the lead article in the August–October 1983 issue of the *Journal of Development Economics*—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 monetary growth rate—implied both a temporary and a permanent decrease in output growth if the wage formula, as in Brazil, provided for lagged-price indexation.

After the second 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 was finally stepping down and a democratic regime was scheduled to take office in 1985. In 1984, I was teaching at Columbia University while a debate raged in Brazil on how to cope with a seemingly out-of-control inflation process. Gone were the days when the debate was about gradualism vs. 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 (Resende, 1984).

What I did at the time was to manifest my skepticism with a new fable, *The end of inflation in the Kingdom of Lisarb* (a place where everything worked backward, 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 crowned king of Lisarb, persuades himself that, as a social issue, inflation could not be resolved with mathematics or ingenious formulations only. 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 hyperinflation.

In the meantime, the country went through the 1986 Cruzado plan, an unsuccessful price-and-wage freeze in 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*,⁶ 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)

⁶ This expression interjects Brazil’s foremost soccer rivalry—Fla(mengo) vs. Flu(minense)—in the Portuguese word for inflation.

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, 1985b). 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 one was the political difficulty of converting wages into a new currency by their mean values in the previous six months. Accusations 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 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, 1987a). Moreover, the government decided to postpone a softening of the price freeze until after the November 1986 general elections. The decision paid up handsomely politically but was disastrous from an economic point of view. By the time 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 gave the Master Lecture at the December 1987 yearly meeting of 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 de-indexation of the economy. Future stabilization programs, I concluded, would need to incorporate the lessons of each of three contending schools to be able to make inflation stabilization compatible with democracy and economic growth.

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 generation of the inflation tax but also and perhaps more importantly because it eroded in real terms expenditures included in the budget. It did this without affecting tax collection in real terms, because, in contrast to 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 mechanism would explain the paradox of an extremely high inflation rate accompanied by

an extremely low primary public-sector deficit. The 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 extremely rigid, implementing this mechanism would require a Constitutional amendment.

The paper provided relevant ingredients for 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 unification of the indexation system, known as the unit of real value; and finally, transformation of this unit into the *Real*, Brazil's new currency, on 1 July 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 debt repudiation; partially flexible monetary and foreign-exchange policies; and absence of an 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 1995–96 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 on 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 addressed.

7. Interpretations of Brazil's growth experience

One obstacle 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 incomplete transition was the subject 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 volume deals with the macro-social changes that occurred in population growth, the previously dominant rural sector, and the major growth of urban centers. It surveys the consequences of these changes in terms of evolution of the occupation structure, patterns of social mobility, and distribution of income. Finally, it examines the history of social welfare, education, and healthcare. 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, due to the nature of government policies, Brazil deserved indeed to be called a Belindia, which is a regionally and class-defined society comparable to Belgium, but coexisting with poorer, more rural, and more northern parts of the country comparable in most respects to India.

Dealing with the social maladies of Brazil is the subject 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, in terms of population welfare, the results of these policies are nowhere to be found. Moreover, although the coverage of these policies has significantly improved—all children are now enrolled in school, for example—the quality of the coverage is quite poor. We identified that Brazil's population will undergo an extremely rapid aging process in the first half of the 21st century. Consequently, the required social policies will not only be 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. Features of this new social agenda are fairness (with the poor having privilege of access to social protection), realism (with an explicit recognition of overall government budget constraints), 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 a historical essay that stressed Brazil's democratic roots but recognized the difficulties the country had experienced in the past with democratic reformism (Lamounier and Bacha, 1994). High growth periods occurred under authoritarian regimes: the Vargas' regime (1930–45) and the military dictatorship (1964–1985). The inheritance left by these regimes was, however, an inward-looking, inflation-prone, and socially extremely unequal economy. The paper notes the difficulties of carrying out 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 historical records, we argued that the most plausible scenario for the 1990s was a convergence between democracy and economic reforms, leading to inflation control, social inclusion, and a more liberal economy. At least temporarily, this relative optimism was vindicated by the successful implementation of the 1994 *Real* plan and subsequent election of Fernando Henrique Cardoso as Brazil's president (1995–2002).

The *Real* plan succeeded in doing away with inflation, but as already mentioned, it failed to restart a rapid growth process. Part of the reason was the extremely 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 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 faced 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) but 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 tested 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, 2009). The original paper, however, remained as an important contribution to the debate on high interest rates in Brazil.

A few years later, I returned to the topic of how to deal with Brazil's high real interest rates. I suggested (in Bacha, 2011) a sequential program with a set of five measures, of which the first was certainly the most important:

- Establish a ceiling on expansion of public-sector expenditures and link public-sector banks' credit to the Central Bank's monetary policy stance;
- Pledge part of the international reserves as a guarantee of the domestic public debt;
- Include price stability among the permanent economic objectives in the Constitution and define a long-term inflation target;
- Create a new regime for indexation of administered prices based on the long-term inflation target; and
- Liberalize financial investments abroad.⁷

During the time I wrote this paper, the Central Bank, under President Dilma Rousseff (2011–2015), was in the process of reducing basic interest rates even though rising inflation had already reached the top of the target range. I quipped that if this “strategy” did not work (as it did not), my more fundamentalist propositions could be given a try (Bacha, 2012, p. 22). After Ms. Rousseff was impeached, the interim Temer government (2016–2018) introduced legislation freezing inflation-adjusted federal-government spending and setting the subsidized interest rate charged by the 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 early 2018, inflation is down to 3% p.y., real interest rate is equally down to 3% p.y., and Brazil is expecting about 3% growth in 2018. The outlook is better than before but still a long way from resumption of sustained growth.

High real interest rates are not the only reason why Brazil's GDP growth rate remains below par. Regis Bonelli and I tackled other relevant macroeconomic issues in a multi-

⁷ The rationale for this proposal is that, in absence of hard-to-implement coercive measures, domestic interest rates must be higher to make the prohibition to invest abroad be effective.

installment paper starting in 2005 and concluding in 2016 (Bacha and Bonelli, 2016a). The paper develops a national income framework to investigate the reasons for the collapse of GDP growth rates starting in 1981. We show it 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, degree of capital utilization, and capital-to-output ratio.

Based on this decomposition, a first conclusion emerges from an analysis of the national accounts: contrary to widely held views, only a 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 was a sharp rise in the relative price of investment. Of similar importance was a rise in the capital-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 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 Bacha (2013), I argued that an unrecognized part of the problem lay in the diminutive participation of Brazil in world trade, the historical roots of which I analyzed in Bacha (1992b). Consequently, Brazilian firms (particularly in industry and services) lacked the scale, technology, inputs, and competition needed to speed up growth. I pleaded for the introduction of a three-pronged policy program—namely, a reduction in “Brazil cost,” substitution of foreign-exchange protection for tariff protection, and international trade deals—as a basis for incorporation of the country’s economy into global value chains.

A critique of 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 considered. 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-goods sector, which grew much more slowly than in Brazil. We concluded that, besides foreign-trade integration, domestic, social and regional integration were necessary ingredients for growth to resume in large economies such as Brazil and Mexico.

8. Conclusions

The conclusion I reach after review of my intellectual production over the last fifty years on the economics of Brazil and of Latin America more generally is that the glass is half-full, half-empty.

Half-full because today Latin America faces problems of a higher order than those at the start of my career as an economist. With few exceptions, the social and political cleavages in society are nowadays being dealt with by democratic means, not by military juntas or

strongmen. 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 profession of economics 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 expansion gives hope for improved economic policymaking in a democratic context.

Hyperinflation, failed stabilization experiments, sharp dollar constraints, acute external debt crises, and policy fights with the IMF and the World Bank—problems that dominated economic thinking in my generation—are now observed less frequently and only in a few countries. It pleases me to have been able to participate as an intellectual and a policymaker in lessening the occurrence of some of these problems.

Yet the glass is also half-empty. Through urban-based industrialization the region succeeded in overcoming the poverty trap and reached middle-income status. But it was then unable to make the next step, which was development of an internationally competitive industrial-and-services sector. Agriculture and mining became modernized and diversified, 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 in the USA.

Despite recent advances, Latin America remains one of the regions 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 developed economies, the social problem of those left behind will tend to become even more pressing than in the past. Moreover, as elsewhere, Latin America's population is rapidly aging. This increase in the dependency ratio means that the fiscal crisis already tormenting the region will pose a heightened threat to its future economic stability. Much remains to be done to fill up the glass. Such are the challenges facing Latin American economies in the 21st century.

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