Furtado and the Structuralist-Monetarist Debate on Economic Stabilization in Latin America

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> At bottom, therefore, the inflation which accompanies economic development in our country is not a monetary problem (Furtado [1952] 1954, p. 143).

1. Introduction

In January 1963 eighty economists attended an international conference on “Inflation and Growth in Latin America” held in Rio, including W. Arthur Lewis, Dudley Seers, Arnold Harberger, Osvaldo Sunkel, Mario H. Simonsen, Albert Hirschman, Nicholas Kaldor, Friedrich Lutz, Roy Harrod, Roberto O. Campos and Celso Furtado. The conference volume, edited by Werner Baer and Isaac Kerstenetzky (1964), has been regarded as the climax of a decade of intense debate between “structuralists” and “monetarists” (see e.g. Arndt 1985, p. 156) about the interpretation of chronic double-digit but largely non-accelerating inflation rate in some Latin American countries (especially Argentina, Brazil and Chile; see table 1 below) and the design of proper stabilization policies. As described by one of the conference participants, “the confrontation of monetarists and structuralists occurred against the exotic backdrop of the

Copacabana Beach, amid feverish speculation, rising prices, and an apparent slowing in the economic pulse of the Latin American colossus that had combined substantial inflation with an impressive rate of growth for over a decade. The substantial issue that ultimately would separate monetarist from structuralist was the identical issue confronting the nation: should Brazil attempt to control rampant inflation by adopting stabilization policies similar to those introduced in Argentina, Chile, and Peru?" (Davis 1966, p. 506). The debate on Latin American inflation grew mainly out of the International Monetary Fund's (IMF) sponsored orthodox stabilization programs in the region, which were hardly successful (see Felix 1961; Sunkel 1963). Celso Furtado, appointed Minister of Planning of Brazil in September 1962, had just finalized the text of the Brazilian economic stabilization program for the period 1963-65 (called *Three-Year Plan for Economic and Social Development*; see Presidencia da Republica 1962), which he summed up at the Rio conference (Furtado 1964).

Table 1. Selected Latin American Countries: Average Annual Rates of Change in the Cost of Living, 1950-1965

	1950-55	1955-60	1960-65
Argentina	17	38	27
Brazil	18	28	62
Chile	47	24	29

Source: Thorp (1971, p. 184)

Before his appointment as policy maker, Furtado had published extensively on economic development (see Boianovsky 2008a and 2010) and its relation to inflation and external disequilibrium in Brazil and other Latin American countries. Furtado ([1952] 1954, pp. 147-48) was probably the first to relate persistently high inflation that prevailed in many countries of the region after the early 1930s to the new growth pattern experienced at the time, whose main feature was import-substituting industrialization. His 1954 interpretation of inflation dynamics in

Brazil brought to the fore in the Latin American literature the notion of passive money as well as the effects of inflation on intersectoral income distribution in an open economy. In contrast with Juan Noyola's and Osvaldo Sunkel's classic essays about structural inflation in Chile, the Brazilian historical experience of relatively high economic growth throughout the period led Furtado ([1960] 1967) to discuss how inflation had played a positive (if unintended) role in the industrialization of the country. The present essay examines Furtado's views about growth, inflation and stabilization in order to illuminate historical issues about the structuralist-monetarist controversy that remain unsettled in the literature, such as the genesis of the structuralist approach to inflation theory, the connection between inflation and balance of payments problems, the role of price-inelasticity of agricultural supply in both structuralist and monetarist discourses, the treatment of price expectations by both camps, the structuralist strategy of stabilization policy and the role of the fiscal deficit.[1]

It was clear to Furtado that the analytical foundation behind the IMF's interpretation of macroeconomic disequilibria in Latin America was the monetary approach to the balance of payments, which argued that inflation is accompanied by an unfavorable balance of payments due to its effect on the price of domestic in relation to foreign goods, particularly in the fixed exchange-rate regime that prevailed at the time. The development of that approach in the 1950s proceeded independently of later debates between monetarists and Keynesians (see Nobay and Johnson 1977, p. 480). Indeed, as pointed out by one of its creators, it was the Latin American experience at the time that set off discussions at the Fund that would lead to the formulation of the monetary approach to the balance of payments (Polak 1997, pp. 220-21). In his essay on "external disequilibrium in underdeveloped structures", originally written for a professorship competition in Rio in 1959 and published as chapter 5 of his 1961 book, Furtado ([1961] 1964) put forward the structuralist argument against the applicability of the monetary approach to developing countries (see King 1965; Dobb 1965; Hunt 1989, pp. 134-36). According to Furtado (1958a, [1961] 1964), external disequilibrium in those economies was not caused by domestic inflation and excess aggregate demand as assumed by the Fund's monetary approach, but by structural changes that are part of the industrialization process, which were also behind inflation itself.

Furtado's 1952 argument that the main factor behind Latin American inflation was the disparity between the rates of growth of income and the capacity to import would be repeated by

Seers (1962a) in his restatement of the structuralist approach - without referring to Furtado, though. The 1952 article was written as a critical reaction to Ragnar Nurkse's (1951, 1953a) well-known Rio lectures on economic development. As discussed in section 3, Nurkse (1953b, 1961) did not accept Furtado's criticism of the conventional approach to balance of payments disequilibria in developing countries.

Apart from his theoretical and historical insights about the relation between inflation and external disequilibrium in developing economies, Furtado's views are of interest because he formulated and tried to implement in 1962-63 the first structuralist stabilization plan in a Latin American country. Beside references to the connection between inflation and growth under balance of payments pressure, Furtado's *Three-Year Plan* is remarkable for its emphasis on the fiscal deficit as an increasingly important inflationary factor in Brazil since the mid 1950s and for its suggested "gradualist" strategy to stabilization, as opposed to the shock treatment favored by the IMF and some economists at the time. The issue of gradualism versus shock treatment (also called "cold turkey") started to be widely discussed in the Anglo-Saxon literature following the American gradualist experiment of 1969-71 (see e.g. Dornbusch and Fischer 1978, pp. 521-28). Furtado (1989, p. 158) would claim in the second volume of his autobiography that the *Three-Year Plan* was the "first exercise in what would be later called gradualist therapeutics in the treatment of inflation". As indicated by the debate at the Rio 1963 conference, the matter was closely related to the mechanism of forming price expectations, an issue that was relatively new in the macroeconomic literature and, therefore, attracted only scattered attention from Furtado and other structuralist economists.

Although the structuralist-monetarist controversy lost intensity after the mid 1960s, it remained a contentious issue in Latin American economics - together with other tenets of the broad structuralist approach to economic policy, such as import-substituting industrialization - well into the late 1970s. Contemporary interpretations of that debate may be found in Campos (1961; [1964] 1967), Felix (1961), Seers (1962a, pp. 192-95), Pinto ([1963] 1970), Simonsen (1964), Kindleberger (1965, ch. 13), Baer (1967), Thorp (1971), Kirkpatrick and Nixson (1975), and Lopes (1979). Historical accounts started to come out in the 1980s with Hirschman (1981, ch. 8) and Little (1982, ch. 5), which led to further investigation by Arndt (1985) and Fishlow ([1985] 1986, pp. 170-78), followed by Craven (1994), Love (1996a, pp. 238-41), Montecinos (1997), Toye and Toye (2004, pp. 155-58), Danby (2005) and Rodríguez (2006, chapter 4).

Besides Kindleberger (1965) and Little (1982), aspects of the debate have also been discussed in other economic development volumes by Kay (1989, pp. 47-57) and Hunt (1989, pp. 134-42). Whereas most of those authors usually refer to the formulations by Noyola (1956) and Sunkel (1957b, [1958] 1960) as representatives of the original structuralist position, and often single out Campos (1961; [1964] 1967) as illustrative of the monetarist stand, some of Furtado's contributions to the debate are occasionally mentioned (Olivera 1964, p. 321, n. 2; King 1965; Hirschman 1981, pp. 188-89; Bielschowsky 1988, pp. 172-78; Hunt 1989, pp. 134-37; Love 1996, pp. 160-62; Mallorquín 1998, pp. 40-45; Danby 2005, p. 173).

Noyola and Sunkel (born in Mexico and Chile respectively) worked in the 1950s at the economic development division of the United Nations Economic Commission for Latin America (known as CEPAL in Latin American countries), directed by Furtado from 1950 to 1957. Noyola was Furtado's closest intellectual interlocutor during that period (Mallorquín 1998, p. 88; Furtado, 1985 and 1987, chapter 9). As argued in section 3, Furtado was a likely source of influence on Noyola, instead of the other way around as claimed by Colin Danby (2005). Furtado, Noyola and Sunkel played a key role in the transformation of CEPAL's framework from an orthodox to a largely heterodox approach to inflation in the 1950s. Carolyn Craven (1994) has described that "transformation problem", with no indication, however, of what caused the turning point. As documented in that section, it resulted from internal tension between Raul Prebisch (secretary executive of CEPAL from 1950 to 1963) on one side and the young economists led by Furtado on the other. Craven's criticism - that CEPAL economists overlooked the positive effect of inflation on importers of capital goods at the expense of exporters of primary goods - betrays the absence of Furtado's writings in her account. Moreover, although the secondary literature has stressed the structuralists' opposition to "monetarist" economic policy (see section 2), it should be noted that Furtado and other structuralist economists rejected as well many aspects of the traditional Keynesian approach to inflation, as discussed in section 4.

The transition from inflation theory to stabilization policy was problematic. The dearth of practical proposals to stabilize the economy in the short-run has been regarded by many as the Achilles' heel of Latin American structuralism (Grunwald 1961, p. 117; Olivera 1964, p. 331; Little 1982, p. 81; Fishlow [1985] 1986, p. 172; Kay 1989, pp. 53-55; Rodríguez 2006, p. 123). Indeed, Hirschman (1981, p. 183), who was on the whole sympathetic to the structuralist approach to inflation, attributed the decline of the influence of structuralist economists in Latin

America after the mid 1960s to their unwillingness to "forsake their doctrinal purity" and their tendency to "condemn as 'monetarist futility' the most elementary and obviously needed anti-inflationary measures" in situations of acute inflation. The indictment is not entirely fair, as illustrated by Furtado's *Three-Year Plan* (see also Sola 1982 and 1998, chapter 8, for a treatment from the perspective of political science). The reasons behind the failure of Furtado's stabilization attempt remain a controversial issue in Brazilian political and economic historiography. What is more important, from the point of view of the present essay, is the relationship of the *Three-Year Plan* to the development of the structuralist doctrine, and how its gradualist approach became the focus of debate at the 1963 Rio conference (section 5 below).

The supposed price-inelasticity of food supply played an important role in accounts of Chilean inflation by the United Nations (1955), Noyola (1956), Sunkel ([1958] 1960) and Kaldor ([1959] 1964). The matter was sometimes mentioned in Furtado's discussion of the Brazilian case (e.g. Furtado 1958b, pp. 19-20). However - reflecting the influence of Lewis's (1954) Ricardian growth model - he focused instead on the potential perverse effects on economic growth of the increasing domestic terms of trade between agricultural and industrial goods (e.g. Presidencia da Republica 1962, chapter 4; section 4 below). Moreover, as documented in section 3, the thesis of agricultural inelastic supply had been "appropriated" by Brazilian leading monetarists (Octavio Bulhões, Roberto de Oliveira Campos, Eugenio Gudin) under the guise of the notion of "structural vulnerability" of underdeveloped countries to inflation. In particular, the connection between Furtado and Campos - who, as Brazilian Ambassador to Washington, supported Furtado's *Three-Year Plan*, and, as Minister of Planning in succession of Furtado, would later design and implement a somewhat similar (if more successful) stabilization program during 1964-67 - illustrates the complexity and nuances of the Latin American debate over stabilization in the 1950s and 1960s.

After a discussion of the main points of the structuralist-monetarist controversy in section 2, the following sections show how Furtado's views about inflation evolved in response to changing economic circumstances. Furtado ([1952] 1954, 1958a, 1958b 1959a) first focused on the foreign exchange constraint to explain why economic development is accompanied by inflationary pressures, rejecting the monetary approach to the balance of payments in the process (section 3). That was followed by an investigation of the positive role of inflation - through its impact on income distribution - in the industrialization of the Brazilian economy from the 1930s to the late 1950s (Furtado 1954, 1955a, [1959] 1963, [1960] 1967, 1964). This highlighted the changing pattern of the inflationary process, especially after public investment became a leading factor in the economic growth process, accompanied by increasing fiscal deficits (section 4). The reduction in the pace of economic growth in the early 1960s - largely caused, according to Furtado ([1964] 1965), by a change in the terms of trade against the Brazilian commodities - made it increasingly difficult for the government to keep its participation in the aggregate product. This contributed to the acceleration of inflation, which by that time had become not a byproduct of development (much less an engine of it) but rather a "sterile game of passing the buck".

His previous expectations that the phase of "uncontrollable inflationary pressures" was coming to an end proved to be wrong. Under those circumstances, Furtado was called to prepare a stabilization plan (Presidencia da Republica 1962), aiming at a gradual reduction of the inflation rate while resuming the economic growth path (section 5). Furtado's ill-fated *Three-Year Plan* represented the culmination of his contributions to the structuralist approach to inflation and stabilization, although its emphasis in downsizing fiscal deficit was sometimes perceived as contradictory with structuralism. Because structuralism was an evolving doctrine that required theoretical modifications across countries and time periods (see Craven 1994, p. 17; Furtado's letter to Prebisch quoted in section 3), it should not be a surprise that Furtado became more ecumenical as he descended into politics.

2. A Bird's Eye View of the Structuralist-Monetarist Debate

<u>Origins and content of the terms "monetarist" and "structuralist"</u>

The English adjectives "monetarist" and structuralist" were introduced by Campos (1961a, p. 69) in his influential contribution to the Hirschman (1961a) volume that gave international visibility to the debate. Campos ([1964] 1967, p. 106) would also coin the nouns "monetarism" and "structuralism". The Latin American structuralist-monetarist debate of the late 1950s and early 1960s, therefore, took place sometime before the monetarist controversy that would dominate macroeconomics in the United States and Europe a few years later (see Laidler 2004, section 3).

Indeed, it was only after Karl Brunner (1968) used the word “monetarism” - apparently independently of Campos - and Kaldor ([1970] 1978) launched his attack on Milton Friedman, that the term penetrated the Anglo-Saxon literature, although the meaning was to some extent distinct. Before that, the expression was generally used in association with the Latin American debate, as witnessed by Martin Bronfenbrenner and Franklyn Holzman’s (1963, p. 611) discussion of the position of the “so-called ‘monetarists’, the Latin American opposition to *estructuralismo*”, with references to essays in the Hirschman (1961a) volume (see also Kindleberger 1965, chapter 13; and Aaron 1966 for a similar use of the term “monetarism”).

Kaldor - who had taken part in the Latin American debate - deployed it as a term of abuse in the 1970s, which was also often the case in Latin American economics in the 1950s. As pointed out by Ricardo Bielschowsky (1988, pp. 85, 140), Latin American structuralists at the time called “monetarists” the economists who supposedly disregarded the “structural” features of the productive systems of the region, and therefore believed that there is no necessary connection between economic development and inflation and that the perverse effects of stabilization on the rate of economic growth are at most temporary (cf. Campos 1961a, pp. 69-70). Furtado, for instance, while commenting in correspondence with the Mexican economist Victor Urquidi in August 1953 lectures given by Lionel Robbins in Rio at the time, described Robbins as a “sophisticated but intransigent monetarist”. The term was also used in a letter of 1958 from Furtado to Campos. The Portuguese equivalent “monetarista” was deployed by Chilean structuralist Aníbal Pinto (1959, p. 13) to describe critically a study of inflation in Chile by Martin Bailey. So, the expression was around before Campos (1961a) provided the first systematic comparison between structuralists and monetarists.

The debate was generally seen as a dispute between the largely imported monetarist doctrines and the essentially indigenous structuralist approach (Seers 1962a, p. 193; Hirschman 1963, p. 213). The domestic character of Latin American structuralism should not be stressed too much, though. Arndt (1985) has traced its broad origins to the emergence of the doctrine of market failures in England during the 1930s and 1940s, and has pointed out the influence of Michal Kalecki’s ([1954] 1976) and Kaldor’s ([1959] 1964) essays on the role of agricultural supply inelasticity in inflation in developing countries, first presented when they gave lectures in Mexico City and Santiago in 1953 and 1956, respectively.[2] Other European visitors to the headquarters of CEPAL in Santiago included Oxford economists Thomas Balogh ([1961] 1964) and Dudley Seers (1962a, b), who worked at that institution from 1957 to 1961. Seers led a team formed by Pinto, Sunkel and Julio Olivera that produced a six-volume study on “Inflation and Growth” prepared by CEPAL as background material for the Rio conference, which, except for the general introduction published as Seers 1962b, exists only in typescript form (CEPAL 1961). Blankenburg, Palma and Tregena (2008) have argued that the relevant influence came from the French structuralist school, especially François Perroux, who taught Furtado during his doctorate at the Sorbonne in the late 1940s. As for Latin American monetarists, they not just imported traditional ideas about inflation, but tried to adapt them to the local economies, as illustrated by the notion of “vulnerability” to inflation advanced by Bulhões and developed by Gudin and Campos in Brazil.

Basic causes and propagation mechanisms

Latin American structuralists focused on the relation between economic development and inflation, which they interpreted as the outcome of unbalanced growth accompanied by changes in the composition of demand in economies with inelastic supply functions and relative downward rigidity of (mainly industrial) money prices. “Propagation mechanisms” in the system - that is, the ability of economic agents, including the government through fiscal deficits, to keep or increase their shares in output - also known as “social conflict inflation”, “wage-price spiral” or “income struggle”, turn relative price changes into inflation (Sunkel [1958] 1960, p. 111).[3] Instead of the structure of demand and supply, monetarists underlined their respective levels, with emphasis on excess aggregate demand caused by a sustained expansion of the money supply associated with fiscal deficits. Despite the priority of demand factors, Latin American monetarists did not exclude cost-push inflation provoked by upward movements of supply schedules resulting from an increase in factor prices (see e.g. Gudin 1962).

The interpretation of inflation as the outcome of social conflict is not a good criterion to tell structuralists from monetarists, though. IMF economists Edward Bernstein and I. G. Patel (1952, p. 370) wrote that continuous inflation depends on the “resistance of one sector in the economy to a reduction in its share and the insistence of another sector on an increase in its share of the national output... There will then be an unresolved struggle for the distribution of the national output”. That article was also published in Portuguese (Bernstein 1952), after lectures given by Bernstein in Rio in May and June 1951. Gudin (1954, p. 212) made a similar remark, probably based on Bernstein 1952. In the same vein, Furtado (1954, p. 181; [1959] 1963, p. 253) claimed that "inflation is fundamentally a struggle among groups for the redistribution of real income, and the rise in the price level is merely the external expression of that struggle". Where structuralists differed from the traditional social conflict approach to inflation was in their emphasis on economic factors (such as changes in terms of trade or inelastic agricultural supply) that could work as starting factors (see Thorp 1971, p. 191; Hirschman 1981, p. 184; Craven 1994, p. 14), which they called "basic" or "structural" inflationary pressures. According to structuralist economists (Noyola 1956, p. 605; Sunkel [1958] 1960, p. 110), the propagation mechanisms are the most visible feature of the inflationary process and, therefore, are often mistaken as causes of inflation. Hence, as pointed out by Thorp (1971, pp. 193-94) and Little (1982, p. 81), the structuralist-monetarist debate was essentially about causation, that is, which variables should be treated as endogenous and which exogenous and by that subject to policy intervention.

Furtado would apply for the first time Noyola's and Sunkel's "basic causes/propagation mechanisms" terminology in an essay written upon leaving Brazil following the 1964 military coup d'état. He claimed that the structuralist approach to inflation provided what we nowadays call microfoundations of the macro system (see also Fishlow [1985] 1986, p. 171) and that structural reforms were necessary to allow compatibility between rationality at the "micro and macro levels".

> Current attempts to control inflation by focusing only on the propagation mechanisms (inspired by the monetarist theory) constitute a classic example of sterile efforts towards modifying the behavior of economic agents without previous alteration in the structural parameters which condition their behavior. As the criteria of rationality implicit in the monetarist policies are established at a macro level, since it is impossible to adequately foresee or control their repercussions at the micro level it may happen that economic agents be required, by these policies, to follow an irrational behavior from the point of view of their legitimate economic objectives (Furtado 1965, p. 175, n. 3).

There was some disagreement within the structuralist camp about the analytical role of fiscal deficits in inflation analysis. According to Sunkel's ([1958] 1960, p. 110) broad political meaning of structural factors, “structural deficiencies in the tax system” should be regarded as one of the sources of basic inflationary pressures, which raised the criticism of the Argentine economist Julio Olivera (1964, pp. 331-32) that “one thing is structural inflation and another is structural proneness to inflation” (see also Thorp 1971, pp. 188-90, for a defense of Sunkel’s approach). Olivera (1960, 1964, 1967) distinguished sharply the (“non-monetary theory”) of structural inflation, provoked by “real” changes in the relative prices of rapidly growing sectors, from (“monetary”) inflation caused by shifts in aggregate demand or supply. Sunkel (1957b, p. 361; 1963, p. 623), on the other hand, stated that his purpose was not to replace the cost-push and demand-pull explanations by a new inflation theory, but to use those and other categories in order to highlight the interdependence between inflation and economic development. In particular, in Sunkel’s (1963, p. 624) view it was “not enough to observe that money supply increases because of demands from the public sector”, but “to examine the reasons why the government systematically incurs deficits”, which are part of the “basic inflationary pressures” (see also Pinto [1963] 1970, p. 151).

The veil of money

The debate, therefore, differed from the demand-pull vs. cost-push discussion that was going on in the US and in the UK at the time, since the structuralist approach included both demand and cost elements. Moreover, changes in money supply were perceived by structuralists as essentially endogenous to the inflationary process. Their starting-point was that, as far as the analysis of inflation in underdeveloped countries is concerned, “money itself is a veil”, as put by Juan Noyola 1956 (p. 646) in the discussion that followed the presentation of his paper and reaffirmed in Olivera’s (1964, p. 322) call to “lift up the ‘monetary veil’... to search beneath the monetary surface, into the underlying region of physical flows, real prices, and sectional disequilibria”. This did not imply disregarding the role of money, for, as put by Sunkel (1963, p. 622), structuralists “had not get rid of the monetary veil to replace it by a screen”.[4]

It did imply treating credit and money supply as passive factors in the inflationary process, that is, as part of the propagation mechanism (Furtado 1954, p. 183; [1959] 1963, p. 255; Noyola 1956, p. 610). The point came out in Furtado’s review of Gudin (1952). Furtado (1955b, pp. 120-21) challenged Gudin’s interpretation that Knut Wicksell ([1906] 1935) was a supporter of the quantity theory of money, a perennial issue in the history of monetary theory. Furtado argued that Wicksell's notion of elastic money supply (and, in particular, of pure credit economy) together with the concept of aggregate monetary demand for goods were incompatible with the quantity theory. As interpreted by Furtado, the latter was related to Say's Law and restricted to situations in which price level variations are caused by the direct effect of autonomous changes in money supply. Yet another view of endogenous money may be found in Campos's (1961a, p. 74; 1961b, p. 86) suggestion that the recurring expansion of money supply by Latin American monetary authorities did not reflect "laxity in monetary management", but the implicit or explicit faith in the use of inflation to promote economic development - that is, money was passive because central banks decided so.

Moreover, both sides agreed that the phenomenon to be explained was the relatively high and persistent - but not runway or accelerating - inflation rate (Sunkel [1958] 1960, p. 108). Together with Friedman, Gudin participated in a meeting of the Mount Pélerin Society that took place in September 1958 in New Jersey, where he presented a paper titled "On Inflation". According to Gudin (1958), "Prof. Friedman's point that it is almost impossible to keep an inflationary process within bounds ... is *not* confirmed by Brazilian experience, where inflation has been and still is running at an average annual rate of 20% for almost ten years. The principle that 'a small inflation is like a small pregnancy' has not proved true in the Brazilian case". However, as indicated in table 1, things started to change in the early 1960s, when the increase of the rate of inflation in Brazil, accompanied by the fall in the pace of economic growth, led Furtado and others to take into account the role of wage contracts, price expectations and the inflation tax collected by the government.

<u>Attempted formalization and the costs of stabilization</u>

It is worth noting that, with the partial exception of Olivera (1964, 1967) and Seers (1962a), the structuralist-monetarist controversy was not fought over formal models. Eliana Cardoso (1981) would later put forward what she claimed to be a formal structuralist model of inflation in which excess aggregate demand (caused *inter alia* by fiscal deficits) brings about a higher price level through its effect on agricultural prices and therefore on money-wages and industrial prices, which is close to Kalecki's ([1954] 1976 original insights. It differs from conventional macroeconomic models (monetarist or Keynesian) because of the role of reduced elasticity of food supply in the transmission mechanism. This is not the same as Olivera's (1961, 1964) strict meaning of "structural" as changes in relative prices between sectors in the context of unbalanced growth, which can be found in Furtado (1958b). Olivera did not deny that excess aggregate demand played a role in Latin American inflation, but insisted that it should be kept analytically separated from purely structural elements. As recalled by Furtado (1985, p. 184; 1987, p. 205), the bottom line of his and Noyola's perspective was that inflation in Latin American countries was caused by "structural factors generators of instability, and inadequacy of fiscal policies. It was not a matter of fighting inflation at any cost, but achieving development with the lowest possible inflation rate". Simonsen's (1970) attempt to formally sort out alternative stabilization strategies would clarify the different roles of the autonomous, inertial and demand components in the inflationary process and, by that, bring the debate to a relative consensus (see section 5 below).

Indeed, the timing of economic policy and the stabilization costs associated to it was a crucial issue for Furtado and other structuralist economists. One of the main assertions of Latin American structuralism was that any attempt to bring inflation down, for a given economic structure, was bound to bring about a permanent reduction in the rate of economic growth. The structuralist position was, therefore, based on the implicit assumption of a non-vertical long-run Phillips curve, with the proviso that the relevant tradeoff was between inflation and growth, instead of unemployment. The monetarists, on the other hand, believed on a long-run vertical curve and sometimes even on a negative relation between inflation and economic development (see Aaron 1966 for a critical comment on statistical estimations of the inflation-growth curve by IMF economists at the time). From that perspective, the debate was not about the specification of the aggregate demand side - since both camps agreed that the velocity of circulation of money conventionally defined was generally stable - but on how to interpret the dynamics and composition of aggregate supply, and the double relation between economic development and inflation (see Campos 1961a, pp. 69-70; Aaron 1966; Lopes 1979; Bazdresch 1983, pp. 577-78): inflation as the consequence of unbalanced growth, and the effects of inflation itself on the economic growth process. Furtado contributed to the discussion of both mechanisms.

3. From growth to inflation

Prebisch and the structuralist view of inflation

Although the structural approach to inflation is often associated with CEPAL, it should be noted that it was never really part of the "official" doctrine of that institution, since it conflicted with Raul Prebisch's more conventional interpretation of inflation in terms of demand-pull and cost-push elements (Rodríguez 2006, p. 116, n. 1).[5] Indeed, as recalled by Furtado (1985, p. 182; 1987, p. 203), "the dispute between monetarists versus structuralists was born inside [CEPAL] itself", when Prebisch opposed in 1954-55 the new insight that Furtado and Noyola were trying to develop. Reacting to CEPAL's (1954) first document on Latin American inflation (written largely along the lines of Prebisch 1952 paper), Furtado conveyed to Prebisch in a letter of 13 March 1954 his disagreement with the stabilization approach implicit in the notion of cost inflation. Neither did Furtado agreed with the generalization based on the Chilean inflationary experience - "on that subject, we may almost state that what is right for Chile is not so for Latin America as a whole". Prebisch (letter of March 26 1954) asked for clarification, which Furtado replied a couple of weeks later.

> In abstract, inflation is a manifestation of disequilibrium, which shows itself in different forms in each concrete case. It is dangerous to observe a specific case and generalize... Neither do I agree with the method of identifying, in a certain stage of Chilean inflation, the most aggressive group in the fight for income redistribution and blame it for inflation. In the expression "cost inflation" it is implicit the idea that the amount of costs cause the disequilibrium. Well, we all know that entrepreneurs only accept an increase in their [wage] costs if they expect demand to expand. Otherwise, they would diminish employment, instead of producing at loss... The Chilean inflation is a very complex and specific problem. The connections between exports and income formation in that country are quite distinct from those prevailing in other Latin American countries. In my opinion we should carry out concrete studies about inflationary disequilibria in each country...

> The phrase "cost inflation" is starting to spread as a slogan of the conservative classes (letter from Furtado to Prebisch, 10 April 1954).

Furtado's autobiography suggests that the rise of the structuralist interpretation took place around the time of Prebisch's unsuccessful participation in the failed Argentine stabilization program of 1955-56 (see Dosman 2008, ch. 14; Diaz Alejandro 1965, pp. 134-45), when his influence at the institution weakened and the young economists seized the opportunity to push their own views about inflation (see also Dosman op. cit. p. 315; Toye and Toye 2004, p. 340, n. 107). In a revealing letter, Noyola wrote to Furtado that

> I've prepared a few notes about the study on inflation and development in Chile, according to what we had discussed, and advanced the main lines of the theoretical interpretation. From a methodological point of view, I have shown that one can analyze inflation without mentioning "means of circulation", "means of payment" and other pure twaddle which still "circulate" at CEPAL. Prebisch's reaction was very unfavorable. He thought he could avoid publication ... He accepted - at last! - that in order to analyze inflation it is not necessary to use monetary figures, asked me again my interpretation of Chilean inflation condensed in 5 pages, did the same to Jorge Ahumada and Osvaldo Sunkel... So, in less than 3 weeks, I've almost finished the production of the great theory of inflation (letter from Noyola to Furtado, 4 May 1955).

The Furtado-Noyola connection

In August of that same year, Noyola (1955a) finished drafting a long typescript on "Inflation and Development in Chile", which included a careful investigation of the role of the declining copper export sector in the inflationary process. The Chilean experience did not match the standard "classical" model of growth in underdeveloped countries put forward by CEPAL and Lewis (1954), where real wages are determined by average productivity in the (agrarian) subsistence sector, with ensuing transfer of workers to sectors of higher productivity. As explained by Noyola (1955a, pp. 3-10), the shift of labor from a highly productive sector to others of lower productivity but similar wages had brought about a sustained cost pressure in the economy (see also Noyola 1956, p. 608; Sunkel [1958] 1960, pp. 116-17).[6]

Noyola's (1956, p. 604) statement that inflation is a distinct and specific problem in each Latin American country probably reflected his interaction with Furtado. What made Noyola's impulse-propagation framework particularly attractive was its application to the various structural, historical and institutional characteristics of the countries in the region, as illustrated by Noyola's (1956) contrast between Chile's and Mexico's inflation records. It is no surprise that Furtado's 1952 statement that inflation is not a monetary problem (quoted at the outset of this paper) would be repeated in Noyola's (1956, p. 604) claim that "inflation is not a monetary phenomenon, but the result of disequilibria of a real sort, which show themselves in the form of increases in the general price level".[7] Furtado attended Noyola's 1956 lecture in Mexico City and took part in the discussion that followed it, with a summing up of the interpretation he had advanced elsewhere of the inflation-growth nexus in the Brazilian economy since the late 1940s (see Noyola 1956, pp. 636-37; Furtado 1954, pp. 174-87; [1959] 1963, chapter 35).

Danby (2005, p. 173) has noticed important similarities between the respective analyses of inflation in Furtado's 1959 book and in Noyola's 1956 essay, suggesting that Furtado's treatment was a "useful illustration" of Noyola's approach. However, Danby's inference overlooks that chapter 35 in Furtado ([1959] 1963) is a reproduction of pages 174-87 of the 1954 volume, which had been reviewed by Noyola (1955b). Hence, the influence, if any, was the other way around, as indicated by Noyola's (1955b, p. 193) positive reference to the role of real disequilibria and passive money in Furtado's framework. More likely, as Danby (ibid) recognizes, their ideas about inflation were developed together in the 1950s at CEPAL. Before joining CEPAL in 1951, Noyola had worked at the research department of the IMF from 1946 to 1948. His experience at the Fund is reflected in Noyola (1949a), where he essentially endorsed the conventional interpretation of inflation in terms of excess aggregate demand, and supported "domestic fiscal and monetary measures" of the kind designed by the IMF, which he described as "very efficient to fight inflation" (Noyola 1949, p. 98).[8] Hence, we may refer as well to a "transformation problem" in Noyola's thought about inflation, and surmise that his interaction with Furtado after 1951 may have played a role in it.

Furtado vs. Nurkse on inflation and the balance of payments

Furtado's ([1952] 1954) remark on inflation was part of his critical reaction to lectures delivered by Ragnar Nurkse in Rio in 1951, published in Portuguese in that same year and in English a couple of years later (see Nurkse 1953a). The Brazilian economist argued that investment criteria in developing countries should emphasize import substitution industrialization, since those countries faced balance of payments pressure caused by the fact that the demand for capital goods - which were largely imported - tended to increase more rapidly than income when the rate of economic growth went up. Since the importing capacity (that is, the exports quantum multiplied by the terms of trade) did not in average keep up with the growth of imports, as shown by Latin American economic history since 1930, the tendency to external disequilibrium became a feature of those economies.

According to Furtado ([1952] 1954, p. 143), "some economists, who are experts in turning economic problems into questions of semantics, argue that the imbalance in question results from an inflationary situation". The argument followed from the accounting identification of the excess of imports over exports with excess of investment over saving, accompanied by excess aggregate demand and inflation. Furtado (ibid) criticized this reasoning for disregarding one basic aspect of the problem, "that supply cannot increase and change its composition automatically with the expansion of and in sympathy with the change in the composition of demand". The external constraint, represented by the imbalance between the expansion of exports (for given terms of trade) and the pace of increase in imports, implied that the process of growth brought about disequilibria in the form of "excessive internal production" – in relation to the structure of demand for tradeable and non-tradeable goods - and "unfavorable balance of payments" (Furtado, ibid). The correction of those disequilibria is a "slow and almost always painful process", which makes a "policy of stabilization difficult" and tends to make "inflation inseparable from the process of development". The implications for economic policy in developing countries in general and Brazil in particular were clear enough:

> At bottom, therefore, the inflation which accompanies economic development in our country is not a monetary problem. The basic cause of the imbalance is the disparity between the growth of income and the capacity to import. It is therefore indispensable, if this imbalance is to be rectified, to modify the structure of production so as to increase exports or to find substitutes for imports (Furtado [1952] 1954, pp. 143-44).

Nurkse (1953b, pp. 73-74) disagreed with Furtado's suggestion to redirect – through government planning - domestic and foreign investment to exporting and import-substituting industries. According to Nurkse, it would not avoid inflationary tendencies and balance of payments difficulties, unless disequilibrium between aggregate supply and demand was eliminated. Recognizing that inflation has multiple causes did not warrant the statement that inflation is not a monetary problem, since, whatever the structure of investment, inflation will come about if the saving flow is not enough to finance investment demand (ibid). More generally, Nurkse (1951, 1953b) subscribed to Alfred Kahn's (1951) argument that the basic criterion in determining the direction of investment should be its marginal social productivity. Furtado ([1952] 1954, pp. 139-43), on the other hand, rejected Kahn's analysis, on the grounds that it overlooked the role of the value of the marginal propensity to import of distinct income groups and sectors in assessing the repercussion of additional investment on the balance of payments.

The second round of the Nurkse-Furtado debate would take place a few years later in Rio again, at the 1957 International Economic Association conference on *Economic Development for Latin America* (Ellis and Wallich 1961, pp. 273-74). In the recorded discussion that followed the presentation of Nurkse's paper, Furtado disputed the view that additional savings would warrant economic growth without balance of payment disequilibrium. Any shift from consumption to investment even if covered by savings, meant, in Furtado's interpretation, an increase in imports because the import component of investment was higher than that of consumption. In particular, more aggregate investment cannot *per se* alleviate the balance of payments problem, since more investment may be spent in the "wrong" (non-tradeable) sector. Nurkse retorted that Furtado's perspective implied a "commodity approach" to the balance of payments.

Criticism of the IMF's monetary approach

In his conference paper Nurkse (1961, p. 262) mentioned positively Lionel Robbins's discussion of David Hume's monetary approach to the balance of payments, included in the Festschrift for the Brazilian economist Eugenio Gudin. Robbins (1957, p. 270) had referred to Hume's "unsurpassed intuitive insight" that it is the existence of different areas of independent sources of supply of means of payment which is "the essential condition for the emergence of disequilibria in balance of payments". The revival of Hume's notion that balance of payments disequilibria can only result from distinct paces of expansion of money supply in different countries would soon reach the core of open macroeconomics. Gudin himself - one of the most prominent monetarists among Brazilian economists - would approve of Nurkse's anti-CEPAL argument that balance of payments disequilibrium is necessarily the consequence of inflation caused by excess domestic money supply, not the inevitable corollary of disproportional economic growth (Gudin 1962, p. 355).

Furtado was one of the contributors to the Gudin Festschrift, and, therefore, was probably acquainted with Robbins's paper. However, Furtado's ([1961] 1964, chapter 5) detailed criticism of the applicability of the monetary approach to balance of payments problems of developing countries was not a reaction to Nurkse or Robbins, but to the IMF's framework as exposed in an influential article by Edward Bernstein (1956), director of the Research Department of the Fund and frequent traveler to Brazil and other South American countries (see Polack 1997, pp. 215-16). As pointed out by Furtado ([1961] 1964, p. 158), in the Fund's approach excess imports are necessarily financed by means of payment which did not originate in current remuneration to production factors - "the means of payment could originate only from a reduction in net assets or from the issuance of new currency by the monetary authority."

> Thus if using [the monetary] approach we consider the problem of external equilibrium as a persistent phenomenon, we are bound to reach the conclusion that the cause lies in a process of chronic inflation, or of disequilibrium of costs and prices resulting from previous inflation repressed but remaining latent ... [This] formulation has given rise to practical limitations of definite significance. It leads to identifying external disequilibrium with inflation, for all purposes of economic policy. And as inflation is a problem calling for measures to produce short-term effects, the mere suspicion that disequilibrium might have deeper roots becomes relegated to a secondary plane (Furtado [1961] 1964, pp. 159-60).

Instead, Furtado argued that chronic disequilibrium in the balance of payments was the consequence of "structural disequilibrium" inherent in the process of growth in dual economies, which occurs through the transfer of labor from the backward to the modern sector with higher productivity and capital intensity. Furtado (1958a, pp. 405-08) showed with the help of a detailed numerical exercise that - under the assumption that the transformation of savings into real investment in developing countries depends on imports of capital goods - the acceleration of economic growth entails a structural tendency towards an increase in the import coefficient. Hence, "any policy of development necessarily acquires the external characteristics of an inflationary policy", and "in order to defend stability, measures detrimental to development are often proposed" ([1961] 1964, p. 166). The measures criticized by Furtado consisted basically of monetary tightening and/or exchange devaluation. Against all appearance, inflation in developing economies is often the result not of excess investment but "rather of unsuitable guidance to investment - that is, insufficient import substitution" (p. 167). Although in that particular passage reference was made to import substitution only, Furtado generally mentioned investment in the exports sector as well in his discussion of the matter.

Furtado's notion of foreign exchange bottleneck was contrary to the predictions of the monetary approach to the balance of payments. The latter implied that, under a fixed exchange rate regime - as in the Bretton Woods era - maintenance of balance of payments equilibrium and an inflation rate equal to the world rate required a passive monetary policy, so that the supply of domestic credit is determined by the demand for it (see Kirkpatrick and Nixson 1975, pp. 149-54). That was not the same meaning of passive money supply as in the structuralist framework. Differently from the monetary approach, increases in the volume of imports are not induced by domestic price increases but they take place, so to speak, "in lieu of price increases" (Adler 1956, p. 32; see also Hirschman 1958, p. 166), since larger imports mean an increase in aggregate supply. Followers of the monetary approach claimed that monetary authorities in inflationary Latin American countries were trying simultaneously to keep interest rates low and the exchange rate fixed.

According to Furtado ([1961] 1964, chapter 5), the IMF had overlooked the main features of the growth process in developing countries. Instead, economists of that institution had engaged themselves in inconclusive discussions about the meaning of "fundamental disequilibrium" of the balance of payments and the respective roles of deflation and devaluation in correcting it.[9] A persistent balance of payments disequilibrium caused by changes in relative prices and modifications in demand and supply not accompanied by domestic inflation was called "fundamental disequilibrium" by J. J. Polak and other IMF economists in the 1940s and 1950s. Differently from external disequilibrium caused by excess aggregate demand and inflation – which, in the IMF's view, should be corrected through monetary tightening accompanied by nominal devaluation of the exchange – fundamental disequilibrium was interpreted as evidence that the exchange rate should be devalued in real terms. However, apart from the difficulties of carrying out a real devaluation of the exchange rate (because of its effects on domestic money wages and the price level; see Diaz Alejandro 1965), it may affect negatively the growth process, as it tends to increase the relative price of capital goods (Furtado [1961] 1964, p. 167). The alternatives, as seen by Furtado in the 1950s, were abandonment of development policy or adoption of exchange rate control, which was the choice of the Brazilian government at the time.[10] Beside those options, it remained as an "illusion" the notion that external equilibrium could be obtained if only the "inflationary evil" were extinguished. Unless structural maladjustments can be foreseen and avoided, "the cost of avoiding inflation and external disequilibrium is high: economic stagnation or, at least, a restricted rate of growth" (Furtado [1961] 1964, p. 168).

The basic factor behind chronic inflation in underdeveloped countries such as Brazil - going through a phase of rapid spontaneous growth under conditions of permanent reduction of its import coefficient of consumption goods, in contrast with its previous growth pattern decided by export expansion - was that the pace of diversification of aggregate demand was much quicker than that of corresponding changes in the composition of aggregate supply, especially when the import capacity did not grow in tandem (Furtado 1958b, p. 69).[11] Such a "particularly inelastic supply function" was ascribed by Furtado (1958a, p. 409) to shortage of entrepreneurs, lack of external economies, and indivisibility of the production function. He usually emphasized the first factor, associated with the risk involved in investing in import substituting industries, where entrepreneurs lack experience. "The larger the amount of new investment to be made in fields in which entrepreneurial experience is still lacking ... the more imprecise the price system is as a guiding device for investments" (Furtado [1961] 1964, p. 168) and, therefore, the larger relative price changes must be in order to bring about quantitative adjustments.

Brazilian monetarists on "structural vulnerability"

That same notion - that economic development was bound to be accompanied by inflation because of the contrast between rapid diversification of demand and relatively inelastic supply schedule - could be found in Campos's essay on inflation and balanced growth, presented to the IEA 1957 Rio conference (Campos 1961b). Campos pointed out that Nurke's (1953a) notion of "balanced growth" was difficult to implement, and that disproportionalities were an essential dynamic element of the development process. He advanced a distinction between "self-correcting disproportionalities" (which provoke subsequent adjustment through relative price changes) and "induced disequilibria" caused by economic policy (which result in bottlenecks leading to cumulative inflation and interruption of growth). That distinction would influence Hirschman (1958, p. vi; chapter 9, pp. 161-63), who attended the 1957 conference on development. In his critical assessment of structuralism Campos (1961a, pp. 70, 74) would later claim that bottlenecks in Latin American economies were often originally induced by inflation and faulty government intervention in the market mechanism instead of being autonomous or structural.[12]

Campos's (1961b, p. 101) notion of "structural vulnerability" of underdeveloped countries to inflation may be traced back to Octavio Gouvea de Bulhões, regarded as one of the founders of Brazilian style monetarism. Bulhões (1950, p. 35) - head of the economic department of the Brazilian Ministry of Finance and co-author of the so-called Abbink Report written in 1949 as part of a Brazilian-American economic cooperation agreement (see Skidmore 1967, pp. 72-73) - asked whether the cause of Latin American chronic inflation was a persistent and widespread monetary mismanagement and "lack of understanding on the part of government leaders", as believed among circles in the US and in international organizations (cf. Campos 1961b, p. 82, for the same question). Bulhões's (and Campos's) answer was negative. The main element behind Latin American inflation was the low elasticity of supply, caused by the inflexibility of industrial production associated with lack of capital equipment. Whereas in the US excess purchasing power in the agricultural sector (the sector of "inflexible production" in both developed and underdeveloped countries) was generally absorbed by increased industrial production at more or less steady marginal costs and prices, without inflationary effects, the opposite was true in Latin America. Hence, the same degree of excess aggregate demand brought about a higher inflation rate in Latin America than in the US, which made the inflation problem "much more difficult to solve" in those countries (Bulhões 1950, p. 37).

Bulhões's hypothesis about the relation between inflation and inelastic supply was endorsed by Gudin (1956, pp. 217-18) in his textbook on monetary economics and in his contribution to the 1959 IEA conference on inflation (Gudin 1962, pp. 253-54). This led Gudin to deny any theoretical originality in the structuralist approach. It should be noted (see Campos 1994, p. 169) that, although Brazilian monetarists acknowledged that structural inflexibilities made Latin American economies more "vulnerable" to inflation, they denied that such factors played a causal role in the process. Instead, monetary expansion was generally appointed as the central causal factor behind both inflation and balance of payments disequilibria. According to Gudin (1962, pp. 343-44), the main element behind the new inflationary regime in Latin America after the 1930s was the replacement of oligarchic type of governments by democratic ones elected on the basis of *quid pro quo* arrangements with other parties, with ensuing unbalanced budgets. The policy of import-substituting industrialization was another factor, because it diverted an "excessive share of resources from agriculture and exports". Hence, inelasticity of agricultural supply was incorporated into the discourse of some Brazilian monetarists as an element of their criticism of industrialization policy advocated by CEPAL and the structuralists.

Furtado's (1965, p. 168) structuralist argument, on the other hand, was that the "period of time required for aggregate supply to adapt to the modification of the pattern of demand" was a primary force responsible for the creation of inflationary pressures, particularly when the capacity to import is inflexible in the short run. Supplementing the market system through planning could, in his view, solve both problems - external disequilibrium and inflation. Furtado's framework fits well with Ian Little's (1982, pp. 31-21; 78) suggestion that the "structuralist sees the word as inflexible", since rigidity makes the price mechanism inefficient (see also Balogh [1961] 1965). This was related to the notion of market failure that had played an important role in the European debates about planning since the Second World War (Arndt 1985), but the application of the idea of supply inelasticity to inflation as well was something new.

4. From inflation to growth

<u>Agriculture and inflation</u>

Noyola's (1956) lecture discussed how the economic development process may bring about disequilibria and a rising price level. In the recorded discussion that followed Noyola's presentation, Furtado called attention to the inverse phenomenon, that is, the positive effect of inflation on growth, as illustrated by the performance of the Brazilian economy since the rise of the international prices of coffee in 1949 (see Noyola 1956, pp. 636-37, and further below in this section). Hence, whereas Noyola and Sunkel focused on the case of a slow growing economy (Chile), Furtado put forward an interpretation of the inflation-growth nexus in an economy going through a relatively intense process of industrialization. The difference could be also seen in the way agriculture was incorporated into their respective accounts of the inflationary process.

In contrast with Noyola (1956) and Sunkel ([1958] 1960), the role of the agricultural sector as a source of supply inelasticity and basic inflationary pressure was occasionally discussed by Furtado, but not as part of his "central message". This probably resulted from the fact that, whereas Furtado usually had in mind the Brazilian experience, those authors focused their attention on the case of Chile, where agriculture lagged strongly behind other sectors. The empirical evidence for Brazil was not so clear.[13] Moreover, as discussed above, inelastic agricultural supply was absorbed into the discourse of Brazilian monetarists, who on occasion cited with approval CEPAL's studies about inelastic agricultural supply in Chile (Gudin 1962, p. 353). The role of agriculture in Noyola's and Sunkel's frameworks reflected the influence of Kalecki ([1954] 1976) and, especially, of the United Nations (1955) *World Economic Report 1953-54*, which included a study about inflation in Chile - started under the coordination of Kalecki, when he still worked at the UN - with emphasis on the effects of inelastic agricultural supply in the Chilean inflationary process (Noyola 1955a, p. 13, n. 1).[14]

Since Furtado's basic ideas about inflation and growth had already been shaped in his 1952 article, Kalecki's analysis of agriculture and inflation in developing economies did not influence his original formulation.[15] Data on relative prices between agriculture and industry in Brazil, displayed in Furtado's *Three-Year Plan*, indicated that the terms of trade in the period 1947-1960 were increasingly favorable to agriculture (Presidencia da Republica 1962, p. 95). Moreover, the relative share of agriculture in aggregate output declined throughout that period. Such a decline was not interpreted as reflection of a "crisis in agriculture". Because of the low income-inelasticity of demand for primary goods, it was expected that the share of industry would increase in the development process. That was consistent with the American record, as shown by data reproduced from Theodore Schultz's (1945) classic discussion of the role of agriculture in American economic growth, which indicated that terms of trade moved favorably to the primary sector during periods of sharp industrial expansion in the US (Presidencia da Republica 1962, p. 98).[16] Increasing agricultural relative prices - especially when intensified by the deficient Brazilian agricultural structure - were seen not so much as a source of inflation pressure as a potential drag on economic growth because of income transfer from industrial profits to farming rents in Ricardian fashion (ibid, p. 112).

The limits of the Keynesian framework

Furtado's interpretation of the relation between agriculture and development reflected the influence of Lewis's (1954) article, which had made a big impact on him (Boianovsky 2010, section 5). Lewis's model of surplus labor had made clear the limitations of both neoclassical and Keynesian theories when applied to underdeveloped countries. As pointed out by Furtado (1955a, pp. 57-58), Brazilian inflation could not be understood by a simple application of the Keynesian analytical framework. The aggregate supply function in the Brazilian economy differed from the typical one in developed countries in two main aspects: the supply of capital goods was essentially connected to the importing capacity, and labor supply was highly elastic (because of structural unemployment with zero marginal productivity `a la Lewis) even with full utilization of the capital stock.

The notion that the binding factor in income determination in underdeveloped economies is the capital stock - sometimes in the broad sense of physical and human capital - instead of labor supply was also behind the criticism by Rao (1952] 1958), Adler (1956) and Sunkel (1957a, pp. 269-75) of the validity of the Keynesian multiplier concept in underdeveloped countries with typically low average price elasticities of supply, including the agricultural sector. A similar point had been made by Kalecki ([1954] 1976), albeit as an extension of the multiplier concept, not as a critique of it. Furtado, Lewis, Kalecki and others shared the assumption that money-wages in developing economies are largely decided by the price level of consumer goods - instead of the traditional Phillips curve mechanism - since real wages are given by average productivity conditions in the backward sector, that is, the food production sector.

As interpreted by Furtado (ibid), the Keynesian model implied that any increase of money income after the point of full-employment of labor would affect the price level only. Full capacity was not a restriction to long-run economic expansion in that model, since, provided there is unemployed labor, the level of output may increase through higher employment level in the capital goods sector, with ensuing increase of the production of capital goods and of employment in the consumption sector. Such an argument does not apply to underdeveloped economies, which depend on technology created abroad. Hence, expansion of the capital goods sector in those economies is conditioned on an increase of importing capacity or a permanent change in the imports structure. In developed economies, credit expansion and higher investment demand will bring about a shift from the consumption goods to the capital goods sector, as part of the forced saving process that accompanies inflation after the point of full employment is reached.

Again, that argument is not valid for Latin American economies, for two reasons. First, the only important domestic capital goods sector in underdeveloped economies is construction activity, which, apart from labor, does not absorb inputs from other sectors. Under the assumption of perfectly elastic labor supply, therefore, increase in domestic capital formation does not entail contraction in the output of consumer goods. Instead, inflation will bring about a redistribution of the fixed amount of consumer goods away from the rest of the community to the workers newly employed (see also Lewis 1954, pp. 161-62, for exactly the same argument). Furtado (1955a, p. 58) concluded that if Brazilian inflation were of the Keynesian type, it would never have lasted for so long, coexisting with a relatively high rate of growth. He would repeat at the 1963 Rio conference the criticism that “the conventional idea about inflation as a mechanism guided toward obtaining forced saving and tending to lose its effectiveness within a relatively short time period, ought to be set aside in the case of the Brazilian historic experience” (Furtado 1964, pp. 497-98). The additional - and more important - reason why the Brazilian experience with inflation and intersectoral income shifts did not fit the traditional “Keynesian” framework was the essential role of trade in the growth process of the country.

Forced saving in the open economy

Whereas the conventional treatment of forced saving was framed in terms of the distribution of income between profits and wages, Furtado (1954, pp. 174-87; [1959] 1963, chapter 35; [1960] 1967; 1964) discussed how in an open economy with a fixed exchange rate and import controls, inflation favored one group of entrepreneurs (importers of capital goods) at the expense of another (exporters of primary goods). The new element in Furtado's analysis has been recognized by Hirschman (1981, p. 188-90). But not by Craven (1994, pp. 4-5), who has criticized CEPAL economists for overlooking the fact that, since the relevant tradeoff in Latin American economies was between domestic and export production (instead of between consumption and investment), the "inflation tax" was levied mainly on exporters, not on workers or savers - which was precisely Furtado's point.

Shortly after the Second World War, the swift increase in the international price of coffee and other primary goods led to a substantial improvement in Brazilian terms of trade. Furtado (1954, pp. 177-87; [1959] 1963, chapter 35) explained how such an improvement brought about an inflationary process, and how inflation acted as a mechanism for the redistribution of income against the export sector and in favor of the industrial sector. The sudden rise in the price of export commodities (coffee) was not per se an inflationary factor, since there was a concomitant rise in the purchasing power abroad. However, because of the system of import controls introduced in the late 1940s, such an increase in purchasing power could not be used to expand aggregate supply in the short-run. Higher export incomes were spent in domestic consumption demand, which pushed up prices. "Hence surplus monetary demand is created. The improvement in terms of trade, even though promoting an increase in real income ... introduces a disequilibrium of a monetary nature into the system" (1954, p. 182; [1959] 1963, p. 254). The improvement in the terms of trade of the Brazilian economy after the Second World War had provided the exporting sector with the possibility to increase its participation in real income. However, such a possibility did not become effective, since the income accruing to the exporting sector faced a structure of supply rendered inelastic by the policy of import control. Moreover, the increase in income exerted pressure on the relatively inelastic supply of consumption goods, which affected favorably profit expectations in that sector and led to an increase in the demand for credit. Using a term that would play a key role in Noyola (1956) and Sunkel ([1958] 1960), Furtado (1954, p. 183; [1959] 1963, p. 255) stated that the rapidity with which inflation *propagates* ("spreads" in the English translation) depends on the way the banking system operates. At this point he introduced the notion of passive money supply into the structuralist approach to inflation. One might expect that monetary authorities could prevent the banking system - which had become more liquid with the increase of monetary income in the exporting sector - from expanding credit. However,

> The banks almost always [the qualifier “almost” is missing in the 1954 version] act in a completely passive manner. When the increase in monetary income is dammed up in the internal sector, exerting pressure on the price of manufactured goods, food and services, the banking system provides the necessary means of payment. It would of course be wrong to suppose that the banking system itself is a prime mover in inflation, which, as we have already seen, does not originate as a monetary phenomenon... Because a rise in price levels calls for expansion of the means of payment, at this stage of the process the monetary authorities can play an autonomous role. This role will, however, not be easy to carry out inasmuch as it will mean, in the ultimate analysis, protecting one group against the action of the others (Furtado 1954, pp. 183-84; [1959] 1963, pp. 255-56).

Hence, Furtado’s structuralist notion of passive money, which Noyola would follow up, was embedded into a broad institutional-political framework (see also Danby 2005, p. 173). It reflected not only his Wicksellian background, as discussed above, but also his perception of the political role of the banking system.

Furtado’s interpretation of the inflation mechanism in Brazil in the early 1950s was close to Henri Aujac’s ([1950] 1954) approach to inflation as the outcome of conflict over the distribution of income between social groups. This is hardly surprising, for Furtado and Aujac had shared the common influence of François Perroux in the late 1940s in Paris, where Furtado did his graduate studies.

> Inflation is a process whereby the economy tries to absorb a surplus of monetary demand. Such absorption takes place through a rise in the price level, and its main consequence is redistribution in real income... The very word “inflation” is inductive to error, because it stresses the monetary aspect of the process - that is, the expansion of monetary income. This expansion is, however, only the means whereby the system seeks to redistribute real income so as to reach a new position of equilibrium (Furtado 1954, pp. 179-81; [1959] 1963, pp. 251-53).

It is worth noting that agricultural production for the domestic market (non-tradeables) did play a role in Furtado's account of Brazilian inflation in the early 1950s, although quite distinct from the assumption of rigid agricultural supply usually ascribed to the structuralist Latin American tradition. As suggested by Furtado (1954, pp. 185-86; [1959] 1963, 256-57), the rise in export prices brought about an increase in tradeable output partly at the expense of the domestic sector, due to competition for production factors. Thus, a higher total agricultural output coexisted with higher relative prices for non-traded agricultural goods, which contributed to intensify the inflationary process - a similar phenomenon happened in the Argentine economy at the time (see Olivera's study about inflation in Argentina in CEPAL 1961, vol. IV).

The changing pattern of the inflation-industrialization nexus

The inflationary process was the mechanism by which the industrial sector appropriated a substantial part of the increase in economic productivity caused by the improvement in the terms of trade.[17] The notion that the industrialization of Brazil was to some extent an unintended consequence of inflation was generalized by Furtado ([1960] 1967; [1964] 1965, chapter 8) to the whole period from the early 1930s up to the late 1950s. He distinguished three phases in Brazilian economic growth since the Great Depression, which he associated to three inflationary waves. The first one corresponded to the start of the industrialization process in the 1930s, when the government policy originally devised to defend the interests of coffee exporters - through the purchase and destruction of excess production - inadvertently contributed to keep aggregate demand from falling, raised the price level and, therefore, increased the profitability of domestic industry. The second inflationary wave, between the late 1940s and mid 1950s, was the joint effect of the improvement in the terms of trade and the exchange rate policy - which had been designed to force down industrial prices through foreign competition, but in the end had opposite effects, as discussed above. Finally, the third wave took place when import-substituting industrialization apparently reached its last phase in the second half of the 1950s: the domestic production of hitherto imported capital goods and the increase in overhead investment undertaken largely by the public sector.

As pointed out by Olivera (1964, p. 321, n. 2), Furtado's ([1960] 1967) study of Brazilian inflation, through his emphasis on sectoral imbalances, "can be considered structuralist *lato sensu*." However, one can also find in Furtado (see especially 1958b, chapter 9, based on lectures delivered in Rio in August 1957) an interpretation of Brazilian inflation that can be regarded as structuralist *stricto sensu*. Furtado (1958b, p. 68) claimed that Brazilian inflation was a phenomenon with "deep roots, which cannot be explained by concepts generally used to diagnose a typical inflationary disequilibrium of a developed country." It was not enough, according to Furtado, to recognize the existence of excess aggregate demand, for, "observed at that level of generality and on the basis of its external symptoms, Brazilian inflation becomes a common over-investment disequilibrium caused by fiscal disequilibrium and excessive credit growth". The orthodox therapy is the downsizing of public expenditures and credit supply, but its price is the "underutilization of productive capacity, and reduction or even interruption of economic growth" (ibid). Furtado argued that data indicated that aggregate investment demand did not exceed the supply of savings. The time series showed that labor productivity had increased faster than real wages in the Brazilian economy since the Second World War. Assuming that the rate of savings is largely determined by the relation between the rate of real wages and the average productivity of labor, Furtado inferred that the rate of investment of the Brazilian economy was not too high.

> In my opinion, the basic cause of the chronic tendency to the inflationary disequilibrium of the Brazilian economy is the fact that, during the process of economic growth, aggregate demand diversifies much quicker than aggregate supply. There is more mobility on the demand side than on the supply side. This is a phenomenon specific to underdeveloped economies, which grow rapidly under conditions of spontaneous development, with a permanent reduction of their imports coefficient. Underdeveloped economies are characterized by the relative rigidity of their productive structure… Under these circumstances (of difficulty to adapt supply to demand dynamically), inflationary disequilibrium results less from an excess of aggregate demand over aggregate supply than from the existence of demand segments which are not met by supply and supply segments which are not met by demand… The only way to eliminate the tendency to disequilibrium is by increasing the flexibility of supply and its adaptation to demand… The elimination of structural inflation, like the Brazilian one, requires careful programming of economic

> development, if one wants to avoid reducing the pace of development itself (Furtado 1958b, pp. 69-71).

Furtado, however, would change his mind about the role of fiscal deficits in Brazilian inflation, as data became available in the late 1950s indicating the increase of government demand. As explained by Furtado (1964, p. 498) at the 1963 Rio conference, the type of inflation which started in the mid 1950s and continued until the early 1960s differed from the previous one. "Its primary cause lies in a deep disequilibrium of the public sector, which was called forth to take up concrete responsibilities in the process of capital formation, without regard to the fact that the fiscal apparatus had not undergone the necessary adaptation". The change in the Brazilian inflationary regime was discussed by Furtado for the first time in an interview given in October 1958 to a Brazilian newspaper - a few months after his return from an academic year in Cambridge - and reproduced in *El Trimestre Economico* (Furtado 1959c). He brought up on that occasion the notion that the government had increased its share in income through the issue of paper currency and the subsequent "inflation tax" on cash balances, regarded as a highly regressive form of taxation (see also Furtado [1959] 1963, p. 187; 1962, p. 43). The key role played by public investment in economic growth and in the inflation process in Brazil after the mid 1950s was also highlighted by CEPAL (1961, vol. IV). In his survey, Baer (1967, p. 10) would describe as structuralist the argument that the high rate of urbanization and industrialization increased the demand for public investment, which was often financed through the expansion of money supply.

The sharp increase of fiscal deficits and of the inflation rate - which contributed to the budgetary deficit because prices of public utilities were slow to adjust, as pointed out by Furtado (1962, p. 43) - in the early 1960s were caused, in Furtado's interpretation, by a change in exchange-rate policy and the deterioration in the terms of trade, two phenomena that were closely connected in his view. The multiple exchange-rates system, which implied heavy taxation of exports of primary commodities, was abandoned in 1961 by a liberalizing exchange reform. The reform was in part prompted by pressure from the IMF, but it also reflected an effort to counteract the effects of falling commodities prices on the income of the exports sector. According to Furtado ([1964] 1965, pp. 107 and 112), the elimination of the difference between exchange rates, which had been an important source of tax revenue for the state, contributed significantly to the increasing budget deficit (see also Presidencia da Republica 1962, p. 33).[18] Moreover, the deterioration of the terms of trade since the mid 1950s and the ensuing reduction in import capacity affected negatively the rate of economic growth, which diminished the ability of the government to collect inflation tax and turned inflation into a sterile game of passing the buck.

> During the period when the redistribution mechanism of inflation was supported by increases in real income, owing to better terms of trade and expansion of physical productivity caused by rapid accumulation in the industrial sector, the government could increase its participation in the social product above that permitted by straightforward expenditure of its revenue. When the inflation process became sterile, the government was obliged to face growing difficulties in maintaining its participation in the product, with the marginal effectiveness of emissions of paper currency growing smaller day-by-day (Furtado [1964] 1965, p. 113).

By the time Furtado wrote his *Diagnosis of the Brazilian Crisis*, it was clear enough that his previous expectation - that the phase of “uncontrollable inflation pressures” was approaching its end as the economy progressed to an equilibrium between the capacity to import and the demand for imports (Furtado ([1960] 1967, pp. 111 and 117) - had not been confirmed. Furtado’s notion that structural inflation is essentially a transitory phenomenon - in the sense that it results from rapid structural change associated with late industrialization - was shared by Olivera (1964, p. 330), Hirschman (1958, pp. 162-63) and others. Instead, inflation accelerated in the early 1960s, which indicated that the import-substituting industrialization process was not over, and made stabilization policy urgent.

5. Stabilization: gradualism vs. shock treatment

<u>How to stabilize?</u>

Furtado ([1961] 1964, p. 160) was aware that inflation is a problem calling for measures to produce “short-term” effects. He acknowledged that short-term measures to correct “excess monetary demand" may be necessary in order to eliminate the "secondary causes" of inflation (often generated by inflation itself). However, since such measures do not reach the core causes of "fundamental disequilibrium", they are bound to reduce the rate of growth and prevent the creation of conditions favorable to "true stability" (Furtado 1959a, p. 58). While a purely orthodox "monetarist" stabilization program was unacceptable, there was no clear structuralist alternative either, as Furtado admitted in a lecture about the reform of the economics curriculum in Brazil.

> Nothing would be so helpful to raise the level of our economic policy as the creation, among us, of a scientific environment in the economic field... We would be in better shape to get to know the connections between development, structural changes and inflationary tensions that have prevailed in our country in the last three decades. In the very least, we would be better prepared to defend ourselves from dogmatism coming from abroad. A politician with good intuition and ability to grasp our reality knows that it would be extremely dangerous and maybe unfeasible to adopt among us a stabilization policy of the sort advised by the International Monetary Fund, which is well illustrated by Argentina and Chile. *However, we are in no conditions to put forward an alternative that meets the real needs of our development* (Furtado 1962, pp. 101-02; italics added).[19]

IMF sponsored stabilization programs were based on three central tenets: (i) achievement of stability through a reduction in the rate of increase of money supply (by means of credit restriction to the private sector and control of fiscal deficit); (ii) stability would enhance the free operation of the price mechanism and by that increase long-run growth; (iii) supply inelasticities often result from inflation itself and misguided policies; and (iv) unification of exchange rates, devaluation and liberalization of imports were some of the measures intended to make the price mechanism work (Thorp 1971, p. 193; Little 1982, pp. 80-81). Furtado (1962, p. 69) noticed that the main feature of the 1959 Argentine stabilization plan was devaluation and contraction of domestic income in order to recover the old strength of the exports sector (see also Diaz Alejandro 1965), which he regarded as inapplicable to Brazil.

Furtado (1962, pp. 82-83) criticized the generality of the assumption made by the "competent theoreticians of the International Monetary Fund" that a certain degree of stability is the most important requisite for the proper working of an economic system. He accepted in principle that that postulate applied to developed economies, where growth is accompanied by a small inflation rate. If inflation rises above that moderate level, it may affect negatively economic growth. The proper therapeutics then is a contraction in aggregate demand. However, by attempting to generalize those rules, IMF economists made a mistake with "serious consequences" for underdeveloped countries, according to Furtado. The point was that "stability" means different things in developed and underdeveloped structures. In the former it means full-employment growth, associated with a high level of investment. Hence, economic stability is a sufficient condition to assure long-run growth in developed economies. However, since in underdeveloped countries with structural unemployment stability cannot be defined in terms of full-employment of the labor force, it is formulated strictly as a price level issue. But, "if we take into account fluctuations of foreign demand and the poor allocation of investments, keeping the price level stable without other measures may cost permanent unemployment of part of the productive capacity. This way, stability could entail a social cost higher than inflation itself" (Furtado 1962, p. 83).

Furtado's *Three-Year Plan*

A couple of months after the publication of his 1962 book, Furtado was appointed Brazil's first Minister of Planning, in charge of drafting a stabilization program (for blow-by-blow accounts of the political and economic events surrounding the preparation, attempted implementation and demise of the *Three-Year Plan* see Skidmore 1967, pp. 234-52; Daland 1967, chapter 5; Sola 1982 and 1998, chapter 7). Furtado's diagnosis of Brazilian inflation pointed to two primary causes of disequilibrium (Presidencia da Republica 1962, chapter 1). The first factor was the decline in the capacity to import - after the terms of trade had turned against Brazil since the mid 1950s - and the required continuous "structural change" in domestic supply. The second main factor was fiscal deficit financed by expansion of money supply, which was also ascribed to structural factors - such as rapid urbanization and growth of heavy industries - that had put pressure on government spending.

The increase in the participation of the public sector in aggregate expenditure was considered consistent with the historical record of countries which had undergone swift industrialization in the past - with the difference that those countries had adjusted their tax system accordingly, in contrast with Brazil and other Latin American countries. Given the structural nature of external disequilibrium, its gradual correction should not be based on the adoption of an “equilibrium” exchange rate through sudden devaluation, with its potentially strong inflationary effects (ibid, p. 60). Instead, import-substituting and export industries should be encouraged, among other things, by maintaining a “realistic exchange rate” that should be progressively adjusted to the inflation rate.

The *Three-Year Plan* was announced on December 31 1962. On that same day Furtado wrote an anonymous article for the Brazilian newspaper *Ultima Hora* claiming that the planning strategy would be able to stabilize the economy without perverse effects on its rate of growth. According to Furtado ([1962] 2011, p. 30), the “fundamental vice” of the two main international economic institutions - the IMF and the World Bank - was the separation of long-run from short-run economic issues, which had led to the notion that it was necessary to “stop” the economy in order to “fix it”. Whereas the IMF’s task was stabilization through downsizing economic activity, the World Bank would come to the rescue in support of long-term economic performance. Furtado (ibid) argued that the new *Plan* was based on an entirely distinct conception.

The most controversial feature of the stabilization plan was its emphasis on the gradual elimination of the fiscal deficit as a main instrument to achieve the intended reduction of the inflation rate from its current (1962) level of 50% to 25% in 1963, until reaching 10% in 1965. In his summary presentation of the stabilization plan at the 1963 Rio conference, Furtado did not even mention the contraction in importing capacity as an inflationary factor.

> One of the fundamental purposes of the *Three-Year Plan* was that of planning a public expenditure which might be sufficient to avoid large unemployment created by the government itself and at the same time so small as to avoid inflationary pressures caused by the public sector itself. *This is the essence of the program: to reduce progressively inflationary pressures*. We estimate that given the present institutional framework, it would be far from easy to reduce inflationary pressures to more than one half [of its current level] in the first year. This will allow us to have a fiscal reform and then be able to reduce the inflationary pressure in the second year and up to the third year. This is a highly complex problem; it is unfortunate that it would take up too much time and this prevents me from telling you more about it (Furtado 1964, p. 499; italics added).

Hence, the timing of stabilization was Furtado's own answer to his previous bewilderment about the apparent lack of alternatives to the orthodox monetarist strategy associated with the International Monetary Fund. It was Furtado's attempted response to the "challenge of showing, against the IMF's monetarist orthodoxy, that it was possible to bring the economy to relative stability without incurring the recessive purge" (ibid). The stabilization program adopted in Brazil in 1964-67 during Roberto Campos's term as Minister of Planning would also feature gradualism (see Kafka 1967, probably the first discussion of the gradualist approach in the English literature). The issue of gradualism versus shock treatment (also called "cold turkey") would attract increasing attention of other Brazilian economists, culminating with the publication of Simonsen's (1970) volume.[20]

<u>The Rio conference, lags and Simonsen's contribution</u>

The topic was on the agenda of the inflation conference held in Rio in 1963, as seen not just by Furtado's remark but also by the contribution by IMF's economist G. S. Dorrance, who brought in the matter of price expectations. According to Dorrance (1964, pp. 66-68), the main problem with a gradualist approach to stabilization was its weak effect on price expectations of agents, which implied a stronger perverse effect on economic activity as compared to shock therapy. Likewise, F. Lutz (1964, p. 485) suggested that "a change in the public's expectations about the future movement of prices is a prerequisite of stabilization. And this can only be brought about by administering a shock to the economy". Harrod (1964, p. 500) agreed that a shock treatment with strong psychological effects was the best strategy to stabilize the Brazilian economy. The emphasis on the supposed effect on price expectations of the announcement of monetary and fiscal policies distinguished the 1963 Rio conference from the American debate of the 1970s on gradualism versus shock, which was based on the premise that the government does not command total policy credibility (see Dornbusch and Fischer 1978, pp. 500-504).

The Czech born Brazilian economist Alexandre Kafka (1963, p. 21), who would later approve of the gradualist exercise of Campos's 1964-67 *Program of Action*, was critical of the gradualism of the *Three-Year Plan* and argued for a shock therapy because of its supposed expectational effects. In an article in the Brazilian press in March 1963 (reproduced in Gudin

1965, p. 77), Gudin reacted against Furtado's concern with maintaining the recent historical rate of economic growth (7%) while stabilizing the economy at the same time. According to Gudin's monetarist perspective, any stabilization policy would be accompanied by a necessary but essentially temporary fall in economic activity.

Interestingly enough, a powerful defense of gradualism at the Rio conference came from Chicago economist Arnold Harberger (1964, pp. 329-30), who argued that, because of lags between monetary expansions and the price rises, the price level is likely to continue moving up for some time after money supply stops increasing, with real effects in the transition.[21] Simonsen's (1970) argument in favor of gradualism was also based on lags, but of a different sort. Although Simonsen did not identify himself with Latin American structuralism, his inflation model may be seen as an (unintended) formalization of the structuralist approach (Lopes 1979; Boianovsky 2008b). The model is remarkable for formally introducing into Latin American literature the concept of "inertial inflation".

As stressed by Simonsen (1970), the dependence of the current rate of inflation on its past values means that cold turkey strategies of disinflation are costly. The inertial element - called the "feedback component" - together with the "autonomous component" (supply shocks that change relative prices) and the "demand regulation component" (excess aggregate demand) decide the rate of inflation according to a linear formula. Simonsen's model differed from the accelerationist Phillips curve by explaining inflation acceleration as a result not of revised expectations but of a reduction in the price and wage adjustment interval, captured by changes in the feedback coefficient - a phenomenon noticed by Furtado ([1964] 1965) in his interpretation of inflation acceleration in the early 1960s. Moreover, the model implied that even if inflation expectations fell to zero, the feedback inertial mechanism would keep working due to wage staggering in the indexation process. On the assumption of zero excess aggregate demand and a less than unity feedback coefficient, the lower limit to the current rate of inflation was given by the autonomous component divided by 1 minus the feedback coefficient. In particular, any attempt to reduce the inflation rate below its limit value would bring about a permanent reduction of the rate of growth. The limit value may be seen as the expression of purely structural inflation, to distinguish it from price rises determined plainly by excess aggregate demand.

The notion of inertial inflation can be found in incipient form in Furtado's (1954, p. 179; [1959] 1963, p. 252) concept of "neutral inflation", defined as inflation without any apparent real effects. Neutral inflation occurs if economic agents develop defense mechanisms to prevent the income redistribution required by the introduction of some disequilibrium in the system. As observed by Furtado, it would seem that it would not be difficult to stop a neutral inflation, "since none of the groups would have anything to lose as a result of stabilization." However, if one takes continuous time instead of discrete periods, the "difficulty in stopping the price rise in a neutral inflation process" becomes clear.

> In any day or month some group will be winning the race for income distribution... Even if it were possible to set an average standard for income distribution over a period of one year, and the intention were to stabilize prices in line with such a standard - that is to say, by enforcing a series of price and wage readjustments - it would be difficult to satisfy every group. The average standard of income distribution during a one-year period would have to be quite different, dependent on whether the period were counted beginning in January or in June, and no one could tell in which month the rise in prices actually started (Furtado 1954, pp. 180-81; [1959] 1963, pp. 252-53).

This explains why Furtado – in contrast with Noyola (1956, p. 616) - did not generally support income policy in the form of price and wage control as stabilization instrument.[22]

Kaldor (1964, p. 500) supported Furtado's view that the fiscal deficit was the main factor behind Brazilian inflation, which, they agreed, should be tackled gradually, since reforming the tax system was a politically delicate time-consuming process. Kaldor's interpretation of Brazilian inflation differed sharply from his previous study of inflation in Chile, which pointed to structural imbalances caused by inelastic agricultural supply as the sole factor (see Kaldor [1959] 1964). Apart from fiscal reform, another reason for avoiding curbing inflation "in the shortest possible time" was the structural relation between inflation and growth. "If inflation is repressed by mere monetary measures, that is, unaccompanied by other measures aimed at assuring those changes (such as substitution of imports), it may be taken for granted that the rate of growth of the economy will irretrievably decline" (Presidencia da Republica 1962, p. 14).

With hindsight, that may be interpreted as a criticism of any attempt to bring inflation to zero without changing the feedback and autonomous coefficients in Simonsen's later model. It is consistent with Furtado's goal to reduce the rate of inflation to 10% (which may be deemed the strictly "structural" rate) through fiscal policy. Monetary policy should follow the passive role of providing for the "needs of trade", that is, the planned expansion of money supply in the first year (1963) of the stabilization would correspond to the sum of the rates of growth of the price level (25%) and output (7%) aimed at by the government (Presidencia da Republica 1962, p. 47). That was also Grunwald's (1961, p. 120) suggested approach to monetary policy, in his outline of a structuralist stabilization program.

Why 10%? Furtado (1959c, p. 140) had argued that there was an "inevitable margin of inflation" in a developing economy, which should be kept to a "minimum". Inflation above a certain level leads to distortions in the allocation of resources, especially through the accumulation of inventories and unproductive assets, which tends to depress the marginal product-capital ratio and the rate of growth (Furtado 1958b, pp. 19 and 68; Presidencia da Republica 1962, pp.15 and 27; see also Sunkel [1958] 1960, pp. 120-21).[23] Hence, contrary to the prevailing interpretation (see e.g. Baer 1967, p. 40), the notion of perverse allocative effects of inflation did not distinguish monetarists from structuralists. The disagreement with the monetarists in general and the IMF in particular, as far as the goals of economic policy were concerned, was related to the different meanings of "economic stability" in developed and underdeveloped countries, as discussed above.

The demise of the stabilization program

The *Three-Year Plan* was short lived and did not succeed in bringing down the rate of inflation. The reasons for the breakdown of the plan are complex and remain an unsettled issue in Brazilian economic history. Furtado resigned to his position as Minister of Planning in June 1963, among complaints (by Furtado himself and other policy makers) of difficulties to implement the stabilization plan, rising inflation and downfall in economic activity (see Daland 1967, pp. 166-170). Furtado's failed stabilization attempt would soon be discussed by CEPAL in an anonymous detailed study of economic policy in Brazil, attributed latter to the Brazilian economist Carlos Lessa. According to the CEPAL document, a main reason for the failure was the discrepancy between the rate of inflation projected by the stabilization plan and the price expectations of the private sector, which led to a sharp fall in the real supply of credit (CEPAL

1964, p. 205; see Morley 1971 for detailed discussion and empirical evidence about the effects of credit squeeze on output). Shortly after the announcement of the stabilization program, some economists with links with the industrial sector (see e.g. Magalhães 1962, p. 24) noticed that the price expectations of businessmen had not changed. Firms continued to increase their prices at the same pace as in the previous year, which soon enough would lead to a "stabilization crisis".

The man responsible for the implementation of economic policy in general and the *Three-Year Plan* in particular was the Minister of Finance Santiago Dantas. Furtado and Dantas were aware of the key role of expectations, but it was not clear how to influence price anticipations. The matter was not conspicuous in the structuralist literature. Sunkel (1958] 1960, p. 129) had suggested briefly that price expectations would take care of themselves in adaptive fashion, for "the feeling that prices will inevitably go up will disappear gradually if the stabilization program produces results". Assuming the public does not believe any announcements by the government, policy makers may resort to price and wage controls as a means of forcing down inflation for a transition period, which could provide time to change price expectations. Erik Lindahl and Carl Iversen (1950, pp. 12-13), members of an United Nations economic mission to Chile, advised that price controls should be enforced in order to "convince the public of the seriousness of the government's intentions" about stabilization (see also Boianovsky and Trautwein 2006, pp. 895-96). Arthur Lewis (1964, p. 25) made a similar suggestion to tame price expectations. Although price and wage controls were not part of the *Three-Year Plan*, there were attempts by Dantas to persuade some industrial sectors (such as textile industries) to commit themselves to keep prices steady for a period of time.[24] Once the plan was announced, Furtado's job was to meet with businessmen and labor unions in order to explain its methodology and objectives. A few years later, Furtado would regret in an interview to Robert Daland (1967, p. 167) that his inability to persuade economic agents of the general objectives of the 1962-63 stabilization plan had contributed to its demise.

According to Furtado's (1989, chapter 6) recollections, the lack of support from the American government - which had no sympathy for President João Goulart's left-wing government - played a decisive role in the eventual collapse and abandonment of the stabilization program. Apart from inflation, another crucial concern of the *Three-Year Plan* was the fragile situation of the Brazilian balance of payments, which involved attempts to refinance the external debt and get foreign aid. Although Dantas succeeded in gaining a loan agreement with the

American government in March 1963, it was largely contingent upon the successful implementation of anti-inflation measures (Skidmore 1967, pp. 239-40). Campos, who at the time was Brazilian Ambassador in Washington and took active part in the negotiations, supported enthusiastically the stabilization plan, which he considered an orthodox program despite Furtado's "anti-monetarist rhetoric" (Campos 1994, chapter XI). Lincoln Gordon, American Ambassador to Brazil and a Harvard trained economist, approved of Furtado's plan at the time (Gordon 2001, p. 62; Parker 1979, p. 43).[25] He has rejected the charge that the US government brought economic pressures to bear to weaken Goulart (Gordon 2001, pp. 60-64; see Parker 1979 for another view). In May of that year an IMF mission arrived in Rio to assess the success of the government's fight on inflation. Both the American and European creditors were waiting for the IMF's evaluation before embarking on the refinancing of Brazil's huge short-term external debt, on which the expansion of the capacity to import depended. Around that time, a 70% salary increase was granted to the military and civil service, which far exceeded the projection included in the *Three-Year Plan*. That could be regarded as the final blow on the stabilization program (Furtado 1989, p. 165), soon followed by a negative report by the IMF.[26]

6. Final remarks

In his assessment of the structuralist-monetarist controversy in Latin America, Campos ([1964] 1967, p. 109) wrote that in the short run, when entrusted with policy-making responsibilities, all structuralists become monetarists, while, in the long run, all monetarists are structuralists, since they do not oppose economic reforms that increase that elasticity of supply functions in respect to price changes. "Thus we might jocosely define a monetarist as a structuralist in a hurry and a structuralist as a monetarist without policy-making responsibility". This oft-cited remark was inspired by the *Three-Year Plan* and originated in a letter he wrote to Furtado in 1963, as mentioned in his autobiography (Campos 1994, p. 512; see also [1964] 1967, p. 108). Campos's description of Furtado's stabilization plan as "monetarist" was based on the acknowledged role of fiscal deficit in the *Three-Year Plan*. In the same vein, in his recollections of the 1963 Rio meeting, Harberger (1997, p. 307) suggested that the consensus that emerged from the conference was that if substantial chronic fiscal deficit financed by monetary expansion was considered a structural phenomenon, then “we are all (or nearly all) willing to be called structuralists”. The “consensus” view had been expressed at the conference by Simonsen (1964, p. 110), who referred also to the structuralists’ emphasis on the endogeneity of those deficits based on their “political and sociological” roots, which he considered a pretty “obvious” point.

However, Furtado’s emphasis on the fiscal deficit came from his interpretation that the process of economic growth and capital accumulation in Brazil after the mid 1950s was largely determined by public investment. Accordingly, the *Three-Year Plan* aimed at a reduction of government current expenditures (particularly transferences and subsidies), while keeping its level of capital expenditures and, by that, the aggregate rate of economic growth. Therefore, Furtado’s interpretation of inflation in the *Plan* was consistent with his overall structuralist approach to inflation and growth. Moreover, it represented a change from his previous (1958b) claim that Brazilian inflation should be understood strictly as the result of changes in relative prices provoked by the inflexibility in the composition of aggregate supply.

As pointed out by Little (1982, pp. 82-83), one way to interpret the debate, “albeit one that is unduly kind to structuralism”, would be that structuralists advocated gradualism instead of the monetarists’ shock treatment. Indexation (especially of the exchange rate) could prevent inflation from distorting relative prices, as Furtado had suggested in the *Three-Year Plan* and it would be implemented in Brazil after 1964 by Campos, Bulhões and Simonsen - with the difference that post-1964 stabilization was largely based on incomes policy that contributed to reduce real wages through an indexation formula that underestimated the inflation rate. The essential idea of gradualism was that elimination of bottlenecks in the productive structure could proceed, while a declining but still high inflation rate was accepted to continue for some time - which, as observed by Little, defied the IMF’s approach, based on the Bretton Woods fixed exchange rate philosophy.

Our investigation of Furtado’s participation in the structuralist-monetarist controversy has shed some light on the origins of the structuralist approach to inflation, on the role of the foreign exchange constraint, on the complex connections between inflation and growth in a developing open economy, and on the difficult path from inflation theory to stabilization policy. As a policy-maker, Furtado was not guilty of the “puritanism” Hirschman ascribed to the Latin American structuralists of the early 1960s. As a theoretician, he showed the relevance of the structural interpretation of inflation to understanding the disequilibrium growth process of the region once it embarked on import-substituting industrialization after the Great Depression.

Notes

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1. Furtado (1987, p. 209, n. 7) listed his 1958a and [1960] 1967 articles, together with chapter 5 of his [1961] 1964 book, as his main contributions to the structuralist approach to balance of payments and inflation. Those articles and chapter are a further elaboration of material included in Furtado ([1952] 1954, pp. 143-44; 1954, pp. 174-87; and [1959] 1963, chapter 35). Other relevant sources are: Furtado (1955a,b; 1958b, chapter 9; 1962, a number of short essays); parts of the *Three-Year Plan* (Presidencia da Republica, 1962) and its summing up in Furtado (1964); Furtado ([1964] 1965, chapter 8; 1965) on the stagflation of the early/mid 1960s; chapter 12 of his ([1969] 1970) book about Latin America; and his autobiographical pieces (1985 and 1987, chapter 12; 1989, chapter 6).

2. Another significant contribution to structuralism made by a non- Latin American economist was Hirschman's (1958, chapter 9) use of his notion of unbalanced growth to produce independently an interpretation of inflation and balance of payments disequilibria in developing countries that was akin to Furtado's and other structuralists'. Furtado (1959b, p. 65), in his review of that book, hailed Hirschman's contribution by writing that the fact that researchers from "important universities such as Yale start to recognize that our inflation has structural causes, that it is not just consequence of 'bad behavior', represents for us a great help, for there are still many influential economists among us who are only able to grasp the reality of the world where we live if they have in front of them a text in English language published by a prestigious university". Furtado, however, criticized the lack of references in Hirschman (1958) to similar interpretations by CEPAL economists, and speculated whether it reflected the "purpose to ignore the contributions of that institution" to the study of underdevelopment in Latin America. A couple of years later, Hirschman (1961b, p. 21; 1963, p. 213. n.1) would refer to CEPAL's interpretation of Latin American inflation and point out the similarities to his own framework.

3. The structuralist distinction between "basic [or structural] inflationary pressures" and "propagation mechanisms", introduced by Juan Noyola (1956) and further elaborated by Sunkel ([1958] 1960), is reminiscent of Ragnar Frisch's (1933) hypothesis about how irregular impulses are turned into regular economic fluctuations through propagation factors. Latin American economists did not refer to Frisch in that connection, but they did mention Frisch's later contributions to the theory of economic planning. Anyway, the role of the "propagation" element in Noyola's and Sunkel's frameworks was to show how "structural" or "basic" pressures are able to produce a persistent inflationary process, not cyclical changes.

4. It is somewhat ironical that structuralists invoked the notion of the monetary veil, which had been originally introduced as part of the quantity theory tradition in monetary economics - clearly enough, structuralists used that metaphor in a completely distint meaning from its usual sense of money neutrality (see Boianovsky 1993).

5. Prebisch (1984, p. 182) recollected that "I frequently dealt with inflation in my writings... My treatment of this matter was rather conventional, however, with some occasional incursions into structural factors and external vulnerability". In an unpublished paper presented at the Third Meeting of Central Bank Technicians held in Havana, Prebisch (1952) announced that CEPAL would soon embark on studies about inflation and stabilization. Prebisch distinguished between investment inflation and cost inflation provoked by increases in salaries, wages and social benefits higher than productivity growth. Whereas the former could affect positively the rate of economic growth through forced saving mechanisms, the transformation of inflationary processes into cost inflation was deemed by Prebisch (1952, p. 42) the "biggest danger" of inflation in Latin America. See also Prebisch's (1961, p. 1) long essay in inflation and stabilization, which opens with the statement that it reflects his own personal opinion, not necessarily the views of his collaborators, as there was "no monolithic thought in CEPAL".

6. This was close to the view later developed in the 1970s by some European economists that inflation is related to the fact that money-wages increase at the same rate in every sector despite intersectoral differences in productivity growth. Canavese's (1982) comparision between this so-called "European structuralism" and the older Latin American structuralist tradition overlooks Noyola's early analysis of the role of productivity differentials in Chile.

7. The remarks by Furtado and Noyola were made before Friedman ([1963] 1968, p. 39) put forward his well-known proposition that "inflation is always and everywhere a monetary phenomenon". Interestingly enough, Friedman's postulate was part of two lectures delivered in India about the (lack of) connection between economic development and inflation. Whether Friedman was reacting to Latin American structuralism is a moot point; but that possibility cannot be disregarded, since Harberger, Bailey and other Chicago economists were writing about Chilean inflation and criticizing structuralism at the time.

8. Interestingly enough, Noyola (1949a, p. 98) suggested that the stabilization policy recommended by the IMF "would seem radically ultra red ['de un radicalismo ultrarrojo' in the Spanish original] to many Latin American, particularly Mexican, bankers and businessmen". Noyola, therefore, did not initially associate the IMF's economic framework with the right

political spectrum. On the different political affiliations of the quantity theory of money throughout the history of thought see Laidler 2004.

9. Noyola (1949b, chapter II) had argued in his thesis that the IMF's "fundamental disequilibrium" of the balance of payments should encompass the concept of "development disequilibrium" ("desequilibrio de fomento"), which has similarities with Furtado's structural disequilibrium (see Bazdresch 1983, pp. 569-75). Noyola did not extend his criticism on that occasion to the IMF's interpretation of inflation dynamics in developing countries. Noyola, Sunkel and Furtado would join forces to produce, under the direction of the latter, a controversial report on external disequilibrium in Mexico (CEPAL 1957). They asserted, based on theoretical and empirical analyses, that balance of payments disequilibrium and sudden periodic devaluations of the Mexican currency had occurred for structural reasons, not because of overvaluation of the exchange rate. As recalled by Victor Urquidi (head of CEPAL office in Mexico) and Furtado (1985, pp. 188-90; 1987, pp. 209-11), Prebisch, under pressure from the Mexican government, decided against publication of the final report at a meeting with Furtado and Urquidi. According to Urquidi's (2000, pp. 93-94) dramatic description, "Furtado and Prebisch were like two giants vying against each other ... And Prebisch won. Prebisch won because Furtado, at the end, broke down and burst into tears. He could not go on any more. He felt that Prebisch was overpowering him, in a personal way. So, conversation stopped and we walked out" (see also Dosman's 2008, pp. 331-32, detailed narrative of the conflict between Furtado and Prebisch over the Mexico report). A few months later, Furtado decided to leave CEPAL.

10. See Huddle (1967) for a critical assessment of Furtado's views on exchange control and development.

11. Inflation bias was also a feature of Latin American economies during the gold standard era in the 19th and early 20th centuries, before the start of import-substituting industrialization, but rates were then generally lower and the inflation mechanism was distinct. As explained by Furtado (1950; [1959] 1963, chapter 28; [1969] 1971, chapters 9 and 12), cyclical crises originated in the industrialized economies entailed a fall in prices of primary commodities and created balance of payments pressures which could not be eased by mobilizing gold and exchange reserves. Instead of operating according to the rules of the gold standard, Latin American countries tended to devaluate their currencies. Moreover, since government revenues depended on the export trade, the supply of inconvertible money expanded to cover fiscal deficits. The ensuing increase in the domestic price level was accompanied by shifts in income distribution, which Furtado described as "socialization of losses", that is, a mechanism for defending the exports sectors from cyclical crises. The first comprehensive investigation of the world monetary experience with inconvertible paper money was carried out by the Chilean economist Guillermo Subercaseaux in his 1912 volume *El Papel Moneda* (French tr. 1920), mentioned by Wicksell ([1906, 1915, 1928) 1935, pp. 127-28, 166-68). Subercaseaux argued that the adoption of a paper money standard was generally a measure forced by fiscal strain.

12. Campos's shift of focus between the 1957 IEA conference and the 1961 Hirschman volume (which put together papers presented in sessions held in Santiago during the winter and spring of 1959-60) may be in part ascribed to criticism presented at the 1957 conference - by Gottfried

Haberler, Jorge Marshall and Henry Wallich - that he had overlooked the role of demand factors (monetary and fiscal policies) in inflation (see Ellis and Wallich 1961, p. 107).

13. According to the 1961 CEPAL study about inflation in Brazil - probably written by Aníbal Pinto, head of the CEPAL office in Rio inaugurated around that time - in contrast with some other Latin American countries, "in Brazil [domestic food production] has not, on the whole, being an important source of inflationary pressure during the post-war period. While food production has not increased at a rapid rate as have some other sectors ... it has nevertheless expanded at a substantial pace" (CEPAL 1961, vol. IV, pp. 75-76). Data for the period 1944-1960 indicated a rate of increase of nearly 5%. Gudin (1962, p. 354), on the other hand, argued that, assuming an income-elasticity for food of 0.5, the increase in food supply in Brazil in the post-war period was not enough to match the increase in population and income per-capita.

14. It was not agriculture, but external disequilibrium and the interaction between the copper sector and the rest of the economy that held pride of place in Noyola's interpretation of Chilean inflation. In particular, Noyola (1955a, pp. 45-47) reacted against the United Nations (1955, pp. 81-82) study's claim that the increase in foreign prices - not exchange rate devaluations - was an active factor in the rise in the Chilean domestic price level. Noyola carried out a statistical exercise to support his argument that devaluations were not a passive factor and to reject the notion (implicit in the UN study) that balance of payments disequilibria are determined by internal price increases instead of real factors such as economic growth. According to the latter approach, devaluations are an autonomous inflationary factor, not a merely passive one.

15. However, Kalecki was probably important for posterior developments of Furtado's ideas on the matter, such as his discussion of inflation pressure through the impact of higher food prices on money-wages and by that on industrial prices (Furtado 1958b, pp. 18-19).

16. Furtado met Schultz at the University of Chicago during his visit to the US in 1951. As recalled in Furtado (1985, pp. 93-94), Schultz's 1945 book was widely read at CEPAL.

17. A similar point was made about the Australian economy in that same period (Rowan 1954).

18. Furtado (1972, p. 32; 2000 interview to the UN oral history project, pp. 8-9) would often reaffirm his view about the crucial influence of the 1961 exchange reform in accelerating Brazilian inflation in the period 1961-64. The point, however, is disputed in the literature (see e.g. Wells 1977, pp. 202-04). The dependency of fiscal revenue on foreign trade was part and parcel of the interpretation of Chilean inflation by Noyola and Sunkel. In an anonymous article about the acceleration of inflation in Chile between 1953 and 1955 (written by Sunkel, as informed to the present author in correspondence of 30 December 2009), pride of place was given to the effects of the fall of the international price of copper on the fiscal situation (CEPAL 1956).

19. Similarly, Prebisch (1984, p. 182) recalled that in the 1950s and 1960s "I was far from being sympathetic to the views and prescriptions of the International Monetary Fund, but notwithstanding my previous experience at the [Argentine] Central Bank in noninflationary times, I was not able to recommend policies different from those I criticized".

20. The "gradual" character of the structuralist approach to stabilization was mentioned critically by Campos (1961a, p. 70; [1964] 1967, p. 114), in the sense that inflation could only be curbed through structural "long-run" reforms, such as changes in the land tenure system (see also Foxley 1981, pp. 192-94). Although structural reforms were part of Furtado's *Three-Year Plan*, his meaning of "gradual" or "progressive" stabilization was not a long-run process, but a relatively brief one through a succession of stages. Indeed, the main analytical problem that the *Plan* attempted to solve was the integration of short and long-term measures in one and the same system (CEPAL 1964, p. 203).

21. The key role of lags in stabilization policy had been studied by A.W. Phillips (1954) from the perspective of what would later become known as optimal control theory. However, there is no indication of connections between Phillips's early essay and the structuralist-monetarist debate.

22. In the 1980s and 1990s, after indexation mechanisms had become widespread, the notion that Brazilian inflation was predominantly "inertial" gained assent among Brazilian economists, which culminated with the successful 1994 stabilization through monetary reform (see Andrade and Silva 1996). Furtado did not participate in the formulation of that stabilization program, but would later claim in an interview that the notion of inertial inflation goes back to his original idea of neutral inflation (Biderman, Cozac and Rego 1996, p. 82).

23. The perverse effect of inflation on the marginal capital-output ratio is ascribed in the *Three-Year Plan* to the "increasing investments in inventories" (p. 15) caused by inflationary price expectations, which "tend to reduce the efficiency of investments and therefore the rate of growth" (p. 27). Furtado (1958b, p. 68) had written before that the inflationary environment brings about a reduction in the demand for liquid assets and an increase in the speculative demand for real assets. He described that as a "psychological distortion" in the behavior of businessmen and economic agents in general, which contributes to turn inflation into a chronic phenomenon.

24. Price control was part of the institucionalist literature on stabilization and corporations (see e.g Galbraith 1952). As pointed out by Brofenbrenner and Holzman (1963, p. 612), the institucionalist notion of downward price-inflexibility may be found in Charles Schultze's (1959) model of sectoral-inflation model, which shares some aspects of the structuralist approach.

25. Gordon had participated in the Hirschman (1961a) volume, where he disagreed with Hirschman's remark that differences in social values and economic conditions between North and Latin America warranted distinct economic theories. "Economic analysis is not a matter of taste. Distinctive Latin American art forms, literature and philosophy are to be welcomed, but there should no more be a 'Latin American economics' than a Latin American physics or mathematics" (Gordon 1961, p. 68). In the same vein, Campos (1961a, p. 71) described the structuralist approach to inflation as an "exercise in 'unnecessary' originality".

26. According to Campos (1994, pp. 513-14), the main difficulties in the refinancing of the external debt came not from the US government, but from the IMF itself, whose "green light" was deemed necessary. The IMF insisted in curbing inflation within no more than one year,

temporary freezing of wages and liberalization of the exchange rate. Interestingly enough, Bernstein and Patel (1952, p. 389; also Bernstein 1952, p. 146) had suggested that a period of "six months to a year should be adequate for slowing down the rate of inflation and bringing it to a halt", which they described as a "gradual" process that would avoid a stabilization crisis.

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