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# Reaching a Broader Audience: Mário Henrique Simonsen's International Career\*

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**Contents:** 1. Introduction; 2. Simonsen's life; 3. Simonsen's career before the 1980s; 4. Leaving the Government; 5. International Career; 6. Overview of his contributions; 7. Conclusions.

**Keywords:** Mário Henrique Simonsen, Brazilian Economists, Inflationary Inertia, Debt.

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The paper discusses Mário Henrique Simonsen's incursions in the International Economic Debate, which started as soon as he left the Brazilian Government in the early 1980s. It is argued that, although he searched for a larger audience for his papers, he focused on the most relevant areas of the Brazilian economic debate of the time, that is, external debt and inflation and its several layers: indexations, inflationary inertia, incomes policy and its social cost. Also, he wanted to influence policy, searching for concrete solutions for these problems both domestically and internationally.

*O artigo discute as incursões de Mário Henrique Simonsen no debate econômico internacional, que começaram assim que ele deixou o Governo Brasileiro no começo dos anos 1980. Argumenta-se que, apesar de ele buscar uma audiência maior para seus trabalhos, ele se focou nos temas mais relevantes para o debate econômico brasileiro da época, isto é, dívida externa, inflação e suas diversas facetas: indexação, inércia inflacionária, política de rendas e seu custo social. Além disso, com seu objetivo de influenciar política, buscava por soluções concretas para esses problemas tanto na esfera doméstica quanto internacional.*

## 1. INTRODUCTION

Mário Henrique Simonsen was one of the most important Brazilian economists in the twentieth century. He had a very prolific career that spanned from the 1960s until his death in 1997. However, in the 1980s, he started to consistently write in English and this enabled him to influence a larger audience—that is when his career as an international scholar began.

The purpose of this paper is to discuss Simonsen's career focusing on the international turn it took in the 1980s. The first section discusses his life while the second one addresses his work before the 1980s; the third section describes the period when he left the Brazilian Government to dedicate his time to study and lecture; the fourth one analyzes his main contributions made in English, while the fifth section proposes an overview of these contributions. Section six brings our conclusions.

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## 2. SIMONSEN'S LIFE

Mário Henrique Simonsen was born in 1935 in Rio de Janeiro, and from a very early age he was in contact with Economics, as Eugênio Gudín was his cousin—Gudín's father was Simonsen's great grandfather's brother (Alberti, Rocha, & Sarmiento, 2002). Many sources stress his talents for mathematics and his auto didacticism.

He received a Degree in Engineering from Escola Nacional de Engenharia (ENE) in 1957 and later, in 1963, one in Economics from the University of Rio de Janeiro (Ellis, 1969) and while working as a consultant at Consultec,<sup>1</sup> he forged many relationships that would become important for his early career. He also started his career as a lecturer, teaching classes at his Engineering school, at Instituto de Matemática Pura e Aplicada (IMPA) and at the Conselho Nacional de Economia (Alberti et al., 2002).

However, his academic career is linked to the Fundação Getúlio Vargas (FGV), which he joined as a lecturer in 1961 and only left when he died in 1997. For most of his time there, he directed its graduate school (Leal, 1998) and had a special role in its journal, which is, perhaps, the main academic journal of Economics in Brazil, *Revista Brasileira de Economia (RBE)*, both contributing and editing it. In all, he had 23 papers published in it—Faro (1998) argues that Simonsen was seen as a last resort when there were not enough papers fit for publication.

As important as his academic contributions, were his political ones. Campos (1998) cites Simonsen's participation, still as a consultant at Consultec, in viability studies related to Plano de Metas, the government planning project of Juscelino Kubitschek's Government in the late 1950s. According to Leal (1998), Simonsen was involved in all government plans and strategies since PAEG (Plano de Ação Econômica do Governo - 1964–67). In 1974 he became Finance Minister, a job he left in 1979. However, after leaving, he still published in academic journals and journalistic magazines and newspapers, reaching a considerable audience. Alberti et al. (2002) note that it was common for policymakers to consult him before launching an initiative, such was his prestige.

In 1997, he died due to a cancer credited to his many years of smoking.

Simonsen was the product of a time in which Economics was still not well established as an undergraduate degree, as it had been recognized as a separate field a few years before he went to college, and by the time he started his professional career it still suffered of low quality (Gudín, 1956; Simonsen, 1966). He was part of the process that improved this situation, which included, through FGV and other institutions, preparing and sending young economists for Masters and PhD degrees in the United States and Europe. However, he, himself, never studied abroad—perhaps, a generational gap: he taught many of those who went abroad, but considering the professionalization and internationalization process of Economics in Brazil (Loureiro & Lima, 1994), he graduated at least ten years before the wave of Brazilian economists that started pursuing studies abroad.

That also explains why he started writing in English so late in his career. As Loureiro & Lima (1994) point out, the process of integration between the Brazilian academic community to the rest of the world only happened after those Brazilian economists who went abroad to get their masters and PhDs returned to become Professors. Until then, the debate was limited within the borders of this community. From this process on, which at best, dates from the mid-1970s, early 1980s, contacts were made, and channels of discussion pursued.

Prior to this internationalization moment, he had a few papers that were available in English. We can mention i) a translation of his 1964 book *A Experiência Inflacionária no Brasil* as a special study published in the Supplementary Paper no. 21 (of August, 1967) issued by the Research and Policy Committee of the Committee for Economic Development;<sup>2</sup> ii) his comment on the Structuralism and Monetarism

<sup>1</sup> Consultec was a consulting firm founded by Lucas Lopes, Jorge de Mello Flóres, Mário da Silva Pinto e Roberto Campos, when the latter left BNDE's presidency in 1959. The company worked mainly on viability studies and projects. Both Campos and Simonsen went on to become Ministers of State a few years later.

<sup>2</sup> A Note on the study reads as follow: "Included in this volume is a study of Brazilian inflation, published originally in Rio de Janeiro by the Instituto de Pesquisas e Estudos Sociais (IPES) which CED is publishing in this country under reciprocal agreements with

controversy during a Conference in Rio de Janeiro published in Baer & Kerstenetzky (1964); iii) and a chapter in the book *The Economy of Brazil* organized by Howard Ellis as a byproduct of a mission of the United States Agency for International Development and the University of California at Berkeley from 1965 to 1967.<sup>3</sup> The first one, as we said, is a translation of a book previously published in Portuguese. The second one records his participation in a Conference in Brazil while the third one is a revised and translated version of Simonsen (1965), which hardly accounts for a preoccupation with international academia, which we argue, only happened later in his life.

### 3. SIMONSEN'S CAREER BEFORE THE 1980S

Simonsen began his career in the 1960s. In this decade, his most important pieces of work were: i) the introduction of the cash-in-advance restriction in a discussion of the possibility of a boundary equilibrium prompted by the Patinkin controversy (Boianovsky, 2002; Simonsen, 1964); ii) and what came to be known in Brazil as “Simonsen’s curve”, that is, a discussion of the impacts of inflation on real wages when nominal wages are fixed by contracts. As noted by Vera (2013), that was actually first discussed by Kaldor (1957) in a conference organized by Gudin (which, for this reason, although we cannot know for sure, it is possible that Simonsen even attended the very conference) in Rio de Janeiro which was later published in RBE.

Simonsen claimed, in fact, to have seen something similar to his analysis on a report about the Chilean economy by ECLAC, the Economic Commission for Latin America and the Caribbean (Barbosa, 1997). This lack of certainty<sup>4</sup> regarding the originality of the work has to do with his habit, not uncommon for Brazilian economists at the time, of not referencing sources very precisely.<sup>5</sup>

The first work was discussed in length by Boianovsky (2002, p. 58), who notices that Simonsen “explicitly introduced the cash-in-advance constraint as an inequality in a non-linear programming problem”. Boianovsky also points out that dynamic programming was introduced in 1957, but Simonsen chose not to use it and that, in his 1983 book *Dinâmica Macroeconômica*, he discusses dynamic programming without applying to cash-in-advance models.<sup>6</sup>

Simonsen’s contribution is well analyzed by Boianovsky (2002), but it should be noticed that this was a line of research that started and ended with this paper and it was very early in his career and that, afterwards, when cash-in-advanced models became important in the literature, Simonsen never mentioned his own contributions in any of his books.<sup>7</sup>

The second important contribution made in the 1960s was Simonsen’s curve. He may not have originally thought of it, but he was the one responsible for its development and diffusion in Brazil. Behind the curve, there was the idea of an informally indexed nominal wage affected by chronicle inflation which made real wages float—and he was playing with that idea both theoretically and empirically in 1964, a decade before Friedman (1974), Gray (1976) and Fischer (1977).

Following the military coup of 1964 in Brazil, a Financial Reform took place that introduced indexed bonds to guarantee that lenders would get a positive reward. Concurrently, a Wage Policy—in which

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its foreign counterparts” (Behrman & Alemann, 1967, p. III)

<sup>3</sup>The goal of such mission was to assist the Institute of Applied Economic Research “in the gathering and analysis of economic facts for the use of the Ministry of Planning and Economic Coordination and in formulating the Ten Year Economic Plan” Ellis (1969, p. xxiv).

<sup>4</sup>For even the ECLAC report is not a precise reference, as it is not cited—it was mentioned afterwards to a colleague.

<sup>5</sup>Strangely, the English version of the book in which he first introduced this idea and its graphic version does not contain the graph itself, which is deemed by the literature, alongside with its explanation, as the important part of the contribution, although it explains the situation in words.

<sup>6</sup>He did, however, have access to Bellman’s Dynamic Programming in the late 1950s—he owned a copy which he dated (1958) and signed and it is now owned by Renato Frageli, a former student and current Professor at FGV.

<sup>7</sup>Most of his conclusions published on his papers ended up one way or another on one of his books.



Simonsen was involved (Campos, 1998)—would insure that wages would be adjusted once a year considering productivity gains and inflation expectations (both defined by the Brazilian government). In a little more than a decade, a system of formal and informal indexation soon took over the Brazilian economy and Simonsen, as one of the earliest scholars to take notice and eventually as a Minister in the government, became one of the countries' leading experts in that system. So, it was clear, that in the late 1970s and early 1980s, when the rest of the world was starting to pay attention to the problems concerning indexation, he might have something to say on the subject. His trajectory on inflation studies was not limited to indexation, however. In the 1970s, his focus turned to the effects of past inflation over the current inflation rate, something eventually called inertial inflation.

Again, Simonsen was not the first one to deal with this issue—one can name the studies on price-wage-spirals or the works of ECLAC economists Juan Noyola (1956/2009), Oswaldo Sunkel (1958) or even Celso Furtado (2002). However, in Brazil, it was Simonsen's "modelo de realimentação" or feedback model (Simonsen, 1970) that made the idea known to a generation of economists. The model was based on a simple equation,

$$r_t = a_t + br_{t-1} + g_t, \quad (1)$$

in which he divided the current inflation rate into three parts: an autonomous component ( $a_t$ ), which reflected exogenous shocks, a demand component ( $g_t$ ), that reflect government policy, and the feedback component  $br_{t-1}$  ( $0 < b < 1$ ), where the effects of past inflation were felt. The simplicity of his model contributed for its success among Brazilian economists.

Soon, Simonsen would become one of leading economists in Brazil and in 1974, Finance Minister. It happened right after the oil shock of 1973 and soon he had to deal with problems much more complex than anyone could have anticipated a few months earlier: an economy that had been growing fast and that suddenly had to hit the brakes; fuel prices that increased dramatically and an inflation that would soon follow with an indexation that was just starting to show its evil side; a balance of payments disequilibrium that had to be managed; and all that was happening under a Government that was in need of good economic performance to legitimize itself.

#### 4. LEAVING THE GOVERNMENT

Simonsen left the Brazilian Government in August 1979 and retreated at FGV. He had been away from daily activities for more than five years and needed to update himself on what had happened while he was gone. For more than a year, he studied the new developments in the field of macroeconomics, became acquainted with the new rational expectations macroeconomics and the controversy it generated. From that effort, he wrote the book *Dinâmica Macroeconômica*, published in 1983 (Simonsen, 1983a), still used nowadays in some graduate courses in Brazil.

From 1979 until just before he died, he continued working at FGV. The Graduate School at FGV, which he directed from 1979 to 1993 (Leal, 1998) would organize international conferences, bringing renowned scholars (including future Nobel Laureates) in order to try to ease the contact of its faculty and students with the Economic Literature Frontier. According to interviews with Fernando de Holanda Barbosa and Rubens Cysne, Simonsen had a strong mathematical background and probably due to seniority, he was usually the one to comment and debate the papers of people like Thomas Sargent<sup>8</sup> for example. It was unusual at the time for someone at the South side of the equator to have that kind of mathematical rigor, which surprised many of his visitors.

One of his frequent visitors was Rüdiger Dornbusch. Dornbusch was married to Eliana Cardoso, a Brazilian economist with a PhD from MIT, and was specialized in international economics, which made

<sup>8</sup>Veja, one of the most important magazines in Brazil, mentioned an interesting story it ran at the time of his death: it described how Simonsen approached Sargent about his book and all the equations, with a disapproving tone, and showing his own way of exposing that math, saying that it was not that Sargent's way was wrong, it was just that his way (Simonsen's) was much more "elegant".

his interest in Brazil seem natural. Soon, an important partnership between Simonsen and Dornbusch would develop, centered on the effects on inflation and indexation on Latin American economies.

## 5. INTERNATIONAL CAREER

### 5.1. Indexation

In December 1981, a conference sponsored by FGV on Inflation, Debt and Indexation, with a focus on the last subject, took place in Rio de Janeiro. By then, Simonsen had already written extensively on inflation and indexation and was becoming interested on debt studies, since the LDC (Least Developed Countries) crisis was about to erupt some eight months from then—but all this material was in Portuguese.

Many famous scholars attended the conference, such as Olivier Blanchard, Jo Ann Gray, Edmund Phelps, Thomas Sargent, Joseph Stiglitz, Stanley Fisher and Robert Barro. A book with the papers presented at the event was later edited by Simonsen and Dornbusch (Dornbusch & Simonsen, 1983). This conference was important for Simonsen's career as it introduced him to the International Economics academic world. Before that, Simonsen had mostly published in Portuguese. His international recognition until then derived from the fact that he had been Brazil's Finance Minister in the late 1970s but that was hardly an academic credential. From this moment on, Simonsen began publishing consistently in English and to make inroads into the areas the conference covered: inflation, debt and indexation. The volume edited by Simonsen and Rüdiger Dornbusch is divided into five parts. The first one is named "Wages, Prices and Inflation Stabilization" and brings contributions by Olivier Blanchard, Jo Anna Gray, Edmund Phelps and Thomas Sargent on contract theory considering price asynchronization, price inertia, incomplete information, moral hazard issues and a review of stabilization experiences in Great Britain under Thatcher and France under Poincaré.

The second part is composed of three articles that discuss indexation experiences in Europe (by Michael Emerson) and in Brazil: one by Roberto Macedo and one by Simonsen by the name "Indexation: Current Theory and the Brazilian Experience" (Simonsen, 1983b). Simonsen's article will be discussed in detail ahead. The third part explores the relation between indexation and assets markets and brings articles by Joseph Stiglitz, Stanley Fischer, Nissan Liviatan and David Levhari. The last section is called Panel discussion, in which Robert Barro, Domingo Cavallo and F.H. Hahn participated.

In a review of the book, McNelis (1985, p. 274) regards Simonsen's paper as "certainly the most interesting paper in this book" as it brought a perspective that was new to the International debate at the time. He intended to confront the results of the Gray-Fisher model and some stylized facts associated with indexation: it was seen as a way to reduce welfare costs associated with chronic inflation while at the same time it was an inflation-perpetuating mechanism. He saw a Keynesian touch in the Gray-Fisher model as wage indexation prevents employment and output from being affected by demand shocks, but at the cost of increased price instability. However, as he put it, "the Gray-Fischer results, important as they may be, hardly support the policy-makers' contention that indexation is an inflation-perpetuation mechanism and that even in the absence of shocks widespread escalator clauses produce sticky inflation rates. The stickiness argument of course does not preclude the eventual effectiveness of a tight monetary policy. Rather, it suggests that indexation makes inflation harder to fight because of worsened price-output trade-offs" (Simonsen, 1983b, p. 100).

Simonsen proposed then an extended version of the Gray-Fisher model and reached opposite results. Those results were also a bit different from Friedman's (1974) who predicted that indexation could ease the side effects of stabilization policies, due to the role of expectations and the absence of a price-output trade-off even in the short run. Simonsen obtained that through lagged indexation and he showed that, even with rational expectations, it was possible to obtain a Phillips relation equivalent to the one that would be generated by adaptive expectations. He also claimed that this result supported the policy-makers' view on the effects of wage indexation. He then went on described Brazil's experience with wage, tax and bond indexation.



Simonsen mentions in a footnote that Dornbusch commented on a preliminary version of the article—together with the volume edition, this is his first print collaboration with the German economist, and it was fundamental to his international career, as most of the work that had any impact outside Brazil had some connection to what he did with Dornbusch. This particular article is an example as it was often cited in discussions on wage indexation throughout the 1980s, usually regarding Latin America, but not always just so.

## 5.2. Incomes Policies

From this relation with Dornbusch came a second incursion into the international literature—one that dealt with the role of incomes policies in anti-inflationary plans in Latin America in the late 1980s.

Simonsen had been a defender of incomes policies, such as wage and price controls, ever since he proposed his feedback model in the 1970s. In that model, those policies would reduce the feedback component ( $br_{t-1}$ ) in equation (1) and, therefore, reduce the perpetuating mechanism inflation presented. However, he was cautious as to how extensive those policies could be applied in the economy without causing serious distortions.

In the 1980s his argument was modified—Simonsen had already made this point in some articles he had written in Portuguese, and that is what he did in an NBER working paper written with Dornbusch by the name “Inflation Stabilization with Incomes Policy Support: A Review of the Experience in Argentina, Brazil and Israel”, published in 1987 but with drafts already circulating in 1986, as it was prepared for a meeting of the Group of Thirty<sup>9</sup> of October 2–3, 1986. Some of the same ideas were defended in a paper presented at conference and published in volume under the name *Inflation Stabilization: The Experience of Israel Argentina, Brazil, Bolivia and Mexico* (Bruno, 1988) in a paper called “Price Stabilization and Incomes Policies: Theory and the Brazilian Case Study”.

Instead of defending incomes policies based on the feedback model, they still regarded its effects on expectations, but in a different way: considering that an inflationary process would lead to a distributive conflict in which agents would try to defend their share of real income, an stabilization plan presented a problem since nobody would be willing to stop raise prices first, that is, without assuring that others would do the same. That way, the adoption of incomes policies would work as a way to make expectations uniform and to reduce the cost of fighting inflation, by solving this game theory conflict.

Describing markets as a  $(n + 1)$ -person non-cooperative game (with  $n$  private players and the government) and considering that a Nash equilibrium means *ex post* wisdom (and not *ex ante* rationality), that is, players choose their actions before knowing what others will choose. Therefore, he postulates that caution leads to *max-min* strategies, or, maximizing your payoff in the worst possible scenario.

However, as Simonsen (1988b, p. 260) argues:

Rational expectation macroeconomics implicitly assumes that intelligent participants of non-cooperative game immediately locate a Nash equilibrium . . . . This assumption is often justified by bringing on stage an auctioneer who prevents any transaction so long as any participant can improve his payoff by unilaterally changing his strategy. That the outcome is a Nash equilibrium is nothing but a tautology. Yet there is no place for the auctioneer, either in game theory or in the real world.

He went on saying that

<sup>9</sup>According to its website, “the Group of Thirty, established in 1978, is a private, nonprofit, international body composed of very senior representatives of the private and public sectors and academia. It aims to deepen understanding of international economic and financial issues, to explore the international repercussions of decisions taken in the public and private sectors, and to examine the choices available to market practitioners and policymakers.” Current members include Domingo Cavallo, Stanley Fischer, Arminio Fraga Neto, Kenneth Rogoff, Lawrence Summers Paul Volcker and Ernesto Zedillo for example. Also according to the website, Simonsen was not a past member, but Roberto Campos was.



*max-mim* strategies that do not yield a Nash equilibrium are not likely to be indefinitely repeated. ... Prudent players in a repeated game may gradually narrow the conceivable range of other participants' strategies, triggering a “*tatônement* approach” to a Nash equilibrium. Little can be said, however, about convergence speeds, which may be painfully slow ... Governments should play the role of the Walrasian auctioneer, speeding up the location of the Nash equilibrium, namely, using the visible hand to achieve what rational expectations models assume to be the immediate performance of the invisible hand. As such, the central function of incomes policies is not to constrain individual decision making but to tell each actor how other will play. (Simonsen, 1988b, p. 261)

Simonsen and Dornbusch also took the opportunity to evaluate both the Austral and the Cruzado Plan that had been implemented in 1985 in Argentina and 1986 in Brazil respectively. As their article was published in the end of 1986, they could not yet realize the full consequences of those plans, but they stressed that incomes policies alone would not solve the inflation problem.

They believed that plans that did not employ incomes policies led to unnecessary long stabilization crisis. Plans without fiscal austerity were doomed as scarcity created by price controls had to be tamed by demand controls. So, we can say that they overestimated the reach of Austral's and Cruzado's fiscal austerity compared to those needed to tame the inflationary process they were fighting. According to Simonsen (1988b, p. 262), “the big mistake of the government was to confound necessary with sufficient conditions and to diagnose inflation as a purely inertial problem. Demand inflation took its revenge.”

### 5.3. Debt

In April 1984, Simonsen presented at a World Bank Symposium a paper by the name of “The Developing Country Debt Problem” (Simonsen, 1985). According to preface of the volume published after the symposium, the World Bank aimed to assemble those active in research in debt as it became a major issue for developing countries. The symposium was organized by J. Michael Finger and Gordon W. Smith. Also present in the volume are contributions by Jeffrey Sachs and Richard Cooper, Paul Krugman, Rudiger Dornbusch and Leopoldo Solís and Ernesto Zedillo among others.

Simonsen was one of the first scholars to pay attention to the LDC crisis and did so with a different perspective. On the one hand, he was a former Finance Minister of a Developing Country, in part responsible for some of those policies that led to the situation. On the other hand, he was a director of Citicorp, one of the key lenders to Brazil, a job he held from 1980 until 1995.<sup>10</sup> This means he had extensive practical knowledge from both sides of the issue.

His article focused on describing how the crisis arose and its main characteristics. Competitive recycling, that is, the recycling of OPEC oil surpluses to developing countries that lacked savings, would work as long as the rate of growth of debtor countries exceeded international interest rates. He formalized that rule and it became known in the literature as Simonsen's identities (Krueger, 1987), or in Portuguese, as the prudential debt rule:

$$\dot{z} = (i - x)z + g, \quad (2)$$

in which,  $z$  is the debt/exports ratio and  $\dot{z}$  its derivative regarding time,  $g$  is the resources gap/exports ratio,  $i$  is the average interest rate for the debt, and  $x$  is the growth rate of exports.

The problem was that, by 1979, there was a reversal concerning this rule, as can be seen on Tabela 1. Simonsen (1985) credited this reversal to the United States fiscal and monetary policies.

Simonsen (1985) also argued that some of the actions of the International Monetary Fund (IMF) prevented total collapse of the financial system in the early 1980s. He noticed that when it came to sovereign countries, it was hard to distinguish an illiquid agent from and insolvent one—“since there is

<sup>10</sup>According to his obituary in the New York Times, February 13th, 1997.





**Table 1.** Average Growth rate of Exports (non-oil LDCs)  $\times$  Average Interest Rate for the Debt (LIBOR + spread – 1974–1982).

Years	Average growth rate of exports	Average growth rate of imports
1974–1980	21	10.7
1981–1982	1	16.3

Source: Mário Henrique Simonsen. *The developing country debt status*. Rio de Janeiro: Fundação Getulio Vargas and World Bank. (Simonsen, 1988a)

virtually no collateral to sovereign risk, subtle instruments are required to approach moral hazard issued: as far as external debts are concerned, there is no clear line between ability to pay and willingness to pay” Simonsen (1985, p. 113).

However, he was also very critical of IMF’s position regarding the solvency of debtors, wrong calculations (in Brazil’s case, the controversy regarding nominal and real accounting) and the type of adjustment required, which was mostly done by imports reduction instead of raising exports, which would in turn improve debt indexes. Simonsen also had a positive view of the creditors’ cartel, as he believed it represented a Pareto improvement, as it allowed for a continuous flow of needed capital to indebted countries, avoiding what would be, in many cases total default of their debts. Without the cartel, he argues, the individual private banks would not have incentives or guaranties to continue lending to such risky agents.

#### 5.4. Inflationary Inertia and the Santa Fe Institute Conference

A workshop on “Evolutionary Paths of the Global Economy” sponsored by the Santa Fe Institute took place in September 8–18, 1987 at that Institute’s campus, aiming to “explore the potential usefulness of a broadly transdisciplinary research program on the dynamics of the global economic system, by bringing together a group of economists and a group of natural scientist who have developed techniques for studying nonlinear dynamical systems and adaptive paths in evolutionary systems.” Participants were selected by Kenneth J. Arrow with Philip W. Anderson and David Pines, the Co-Chair of the Santa Fe Institute Science Board serving as Moderator. They also edited the volume of the compiled lectures and papers presented at the conference named *The Economy as an Evolving Complex System* (Anderson, Arrow, & Pines, 1988). The workshop counted with financial support by Citicorp.<sup>11</sup>

According to the introduction to the workshop published in the book, John Reed, then the Citicorp Board Chairman suggested an examination of “the potential application of recent developments in the natural sciences and computer technology to the understanding of world capital flow and debt” to the Santa Fe Institute. This project developed into that workshop and Simonsen was called to present an analysis of the then “present debt crisis” (Anderson et al., 1988, p. 4), which corroborates the idea that he was seen as leading expert on the subject, and that his 1985 paper can be considered seminal.

The paper by Simonsen published on the book, however, deals mostly with his work on inflationary inertia in a rational expectations scenario. The paper is called “Rational Expectations, Game Theory and Inflationary Inertia” and advances an idea already present in some of Simonsen’s works in Portuguese. His argument is similar to the one he posits on Simonsen (1988b) on his defense of incomes policies but here he is trying to show simply that, even under rational expectations, inflationary inertia might arise. In his words,

<sup>11</sup> According to the Santa Fe Institute’s website, the Institute itself was established with funding and strong ties to Citicorp (at the same that Simonsen was a director of Citicorp).

... in the late sixties and early seventies, inflationary inertia was explained by combining the natural unemployment rate hypothesis with Cagan's adaptive expectation formula. Although empirically convincing, the explanation was soon eclipsed by the rational expectations revolution that dismissed backwards-looking inflationary expectations as an "ad hoc" assumption. Painless inflation cure appeared as a strong possibility, provided a credible monetary rule was announced, and provided some gradualism was accepted to bridge the temporary inertia caused by staggered wage and price setting. Empirical evidence never supported this optimism, but it appeared as the outcome of sound economic theory. Once wage- and price-setting decisions are viewed as a play of a  $B_2$  game,<sup>12</sup> the rational expectations optimism goes to pieces. Even if the Government commits itself to a credible program of nominal output stabilization, price-setters have no serious reason to stop price increases until they are assured that price-setters will behave as Nash strategists. "Expectations" now appear as an imprecise concept that attempts to summarize how rational economic agents face strategic interdependence problems. ... The old-fashioned adaptive-expectations hypothesis deserves some rehabilitation, since it describes a trial-and-error approach to a Nash equilibrium in a  $B_{21}$  game.<sup>13</sup> (Simonsen, 1988d, p. 207–8)

In this paper, he also presents his defense of incomes policies. Some of the ideas presented on this paper were already hinted or discussed elsewhere, however, it is more elegantly prepared here.

### 5.5. The Welfare Cost of Inflation

The last paper published by Simonsen was co-authored with Rubens Cysne and published posthumously in the *Journal of Money, Credit and Banking* in 2001, named "Welfare Costs of Inflation and Interest-Bearing Money". According to Cysne (2001),<sup>14</sup> this line of work was based on the work of Lucas,<sup>15</sup> mainly regarding the overestimation of welfare costs of inflation for low interest rates when assuming a money demand with constant interest-elasticity and the use of a monetary aggregate that included both currency bills and interest-bearing demand deposits without properly distinguishing between them.

That would be the contribution of Simonsen & Cysne (2001). They differentiate the two kinds of money—currency bills and interest-bearing demand deposits, other than bonds—and extend Lucas' analysis of welfare costs of inflation, developing a lower and an upper bound to the welfare cost of inflation. They assume the banking spread (the difference between the yield on bonds and on demand deposits) to be constant and find that the welfare loss is an increasing function of the yield on bonds and that the demand for interest-bearing deposits depends on the signal of the sum of the elasticity of substitution between both kinds of money and the elasticity of demand for currency bills with respect to yield on bonds. As Cysne (2001) points out, it establishes a "bi-dimensional welfare cost of inflation" as both types of money have their demands depend on their cost of opportunity.

## 6. OVERVIEW OF HIS CONTRIBUTIONS

A few general comments can be made about Simonsen's contributions that were described here.

First of all, most of the contributions made here were of importance to their respective fields. Simonsen managed to engage top economists in each line of research, and especially from a case study

<sup>12</sup>Simonsen (1988d) defines a  $B$  game as one in which a Nash equilibrium is not reachable by a max-min strategy, that is, "to reach a Nash equilibrium, prudence must be left aside". Simonsen (1988d, p. 210)  $B_2$  are games in which the number of participants is large or information is incomplete, which makes reaching a Nash equilibrium unlikely.

<sup>13</sup> $B_{22}$  games are the games in which after repeated playing, the limit does not converge to a Nash equilibrium.

<sup>14</sup>Cysne (2001) describes how this research came to light. According to him, a draft was done in 1994 and a preliminary version was published as a working paper in 1999 at FGV. Simonsen died in 1997.

<sup>15</sup>Based on a working paper of 1993, published as Lucas (2000), according to Cysne (2001).



point of view, that is, Latin America, or more specifically, Brazil—but without disregarding theoretical rigor—he made his point and he was heard in those niches.

Most of the papers mentioned here have been cited 50 to 100 times since they were published as Tabela 2 shows. They are cited by renowned economists.<sup>16</sup>

**Table 2.** Number of citations of selected papers by Simonsen.

Paper	Citations	Examples
Indexation: Simonsen (1983b)	110	Blanchard (1987)
Dornbusch & Simonsen (1987)	65	Helpman & Leiderman (1989)
Incomes Policies: Simonsen (1988c)	38	Rodrik (1998) and Romer & Romer (1997)
Debt: Simonsen (1988a)	114	Krueger (1987)
Inflationary Inertia: Simonsen (1988d)	31	Nagel (1995)
Simonsen & Cysne (2001)	42	Henricksen & Kydland (2010)

Second, it is worth noticing that those contributions were made on issues that were inherently Brazilian. What he had to say were things about issues in a Latin American economy. That is true on all topics, even when he adheres to mathematics or tries to engage on conversations started by mainstream economists (Lucas, as reported by Cysne (2001): the fact that they extended the model to include interest-bearing deposits is very curious). On the one hand, one notices an interest in a larger public—otherwise he would not have started to write in English, but on the other, not a compromise on topic—and he surely had the skills to adventure in new areas.

That is a very interesting point if you combine with the first one—he managed to reach a large (and important) audience, but talking about his issues.

Third, that last point probably relates to a desire to influence policy. Simonsen left the Government in the late 1970, but never stopped serving as an informal consultant to Finance Minister in times of need (Leitão, 2011). His place in the board of directors of Citicorp when Brazil was negotiating the terms of its debt also points in that direction. International academic reputation could help in this purpose both domestically and abroad.

Lastly, there is his relationship with Dornbusch. They collaborated on many papers that gained attention worldwide, but also, he was the one responsible for many of the invitations to international conferences Simonsen attended, so he is part responsible for this greater reach of Simonsen’s ideas.

## 7. CONCLUSIONS

The goal of this paper was to put into context the last two decades of Simonsen’s career, mainly from an international point of view. He was one of the most important Brazilian economists from the twentieth-century and one of the first to gain international recognition. He did it sticking to a Latin-American agenda, discussing the problems that were relevant to economies that dealt with high inflation and debt, but with methods that were familiar to international audiences in a way that he could engage them in the debate and still influence policy both domestically and internationally.

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<sup>16</sup>As of December 2015.

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