

## ECONOMISTS AND ECONOMIC POLICY: ARGENTINA SINCE 1958

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Economic policy is too important NOT to be left to professional economists. This is so clear in Argentina nowadays, that no presidential candidate for the 1999 election, has picked up as his minister of economics, someone who do not have intensive training in "modern" economic analysis.

This has been so since mid 1980's, and it has been increasingly so since the beginning of the 1960's.

This paper describes the history of the relationship between professional economists and economic policy in Argentina: as analyzers and forecasters, designers and implementers (one natural extension would answer the following question: where these professional economists got the inspiration from: their professors, the "schools" of the time?).

"Massive" modern professional training in economics is roughly four decades old in Argentina, as a result of the fact that "since 1957-59 US universities like Harvard, Chicago, Yale, Columbia, MIT, Texas, etc., began receiving argentine students of economics in their graduate programs" (Dagnino Pastore and Fernandez López, 1988)<sup>1</sup>, and public and newly founded private universities separated studies in economics from accountancy<sup>2</sup>.

I'm not saying that before the end of the 1950's there was no talent in charge of economic policy. Juan J. Romero and Carlos Pellegrini on debt restructuring during the 1890's, Federico

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A conversation with Alfredo J. Canavese, before writing this paper, was very helpful... and enjoyable. Domingo F. Cavallo and Adolfo C. Díz also provided valuable information. Aldo A. Arnaudo, Javier Cardozo, Adolfo C. Díz, Víctor J. Elías, Daniel Heymann, Jorge M. Katz, Juan J. Llach, Martín Lagos, Luisa Montuschi, Julio J. Nogués, Armando P. Ribas, made valuable comments on the preliminary draft. Am I the only responsible of the remaining errors?

<sup>1</sup> This paper brilliantly synthetize the history of the professional economist in government in Argentina.

<sup>2</sup> Before 1958 it was necessary to graduate as Public Accountant, to be able to study economics and become a Doctor in Economic Science (heretofater "old" DES).

Pinedo and Raúl Prebisch on handling the impact of the Great Depression during the 1930's, Prebisch on the reconstructing of the argentine economy after the overthrow of Juan Domingo Perón in 1955 (Prebisch, 1955 and 1956)<sup>3</sup>, are excellent examples of the use of "sound economics" for solving problems, without exposure to formal "modern" economic analysis<sup>4</sup>. But I want to restrict the scope of this paper to professional economists's interaction with economic policy.

This story will probably surprise nobody. In Argentina professional economists interaction with economic policy started through modeling issues and performing short run economic analysis, followed by designing tools and working in economic teams in non crucial roles, and eventually taking themselves the responsibility of design and implementation of economic policy.

## 1. MODELING ISSUES AND SHORT RUN ECONOMIC ANALYSIS

Professional economists initial interest in current economic policy implied modeling issues and performing short run economic analysis. Both tasks took place outside economic teams, in the department of economics at the universities, in research centers financed by the private sector, etc.

### 1.1 Issues

The following survey presents pioneer professional modeling inspired by current economic events.

1) Non monetary theory of inflation. The huge price increase of the first semester of 1959 (80%, at wholesale prices), despite restrictive monetary policy (money grew 22% during the same period), inspired Olivera (1960) to model a "non monetary theory of inflation", which lead to a series of papers on passive money and structural inflation -i.e.: the increase of the overall price level as a consequence of a change in relative prices, in the presence of downward inflexibility of absolute prices- (Olivera 1964, 1967a, 1968 and 1972).

2) Recessionary devaluation. Contrary to then conventional wisdom, i.e.: devaluations that improve the trade balance also increase GDP, the 1959 and 1962 argentine devaluations were followed by recessions. Diaz Alejandro (1965), Sidrauski (1968) and Belozercovsky (1970) explained the recession that followed the mentioned devaluations, on income redistribution, restrictive monetary policy and foreign currency denominated debt considerations, respectively.

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<sup>3</sup> Do not confuse this Prebisch with ECLA's Prebisch (for instance, Prebisch 1950 and 1959), and UNCTAD's Prebisch of the sixties (ECLA is Economic Commission for Latin America, and UNCTAD is United Nations Commission on Trade and Development).

<sup>4</sup> Although it could also be claimed that Pinedo and Prebisch were indeed exposed to the then "modern" economic analysis, at least in the sense that in their writings they quoted from journals like the American Economic Review and the Quarterly Journal of Economics.

3) Olivera-Tanzi effect. Olivera (1967) modeled the increase in public sector deficit that results from inflation, when public expenditure is related to the current price level, but public revenues are related to the previous price level, as a result in lags in tax collections. Tanzi (1977) showed the same result, that nowadays is known as the "Olivera-Tanzi effect".

Canavese and Heymann (1989, 1992) introduced the Olivera-Tanzi effect in simple models of inflation with dual steady state solutions, showing that a singularity point may appear if the fiscal deficit depends on the rate of inflation because of lags in tax collections. The finding has relevant empirical implications, for instance the need for "antiinertial" measures, as well as definite fiscal adjustment, for the success of antiinflationary programs like Austral (Argentina, mid 1985) and Cruzado (Brazil, early 1986).

4) "Tablita cambiaria". The use of a preannounced rate of devaluation as an antiinflationary tool, based on the monetary approach to the balance of payments, is one of those ideas generated in the academic community that were applied almost immediately after invention<sup>5</sup>. The proposal, the contemporary analysis, and the ex-post explanations of what had happened, generated a huge literature<sup>6</sup>. Sacerdote (1978) proposed it 6 days before it was launched, Rodriguez (1979) modeled it, Brodersohn and Duran (1979, 1980) and Pou and Rodriguez (1979) discussed how to measure correctly international inflation during the Second Oil Shock, and Rodriguez and Sjaastad (1979) showed the impact of tablita on the equilibrium exchange rate, to measure correctly "atraso cambiario" (overvaluation of the local currency).

In Argentina tablita cambiaria ended in multiple maxidevaluations, recession and... more inflation. The problems generated by the inconsistency among fiscal, monetary and exchange rate policies, were extensively discussed. Particularly important is Ribas (1980) attack on "monetarism", pointing out that the real issue was then (and is now) the relative size of public expenditure, as proportion of GDP, and not if public expenditure can be temporarily financed increasing real interest rates, and generating a temporary capital inflow that appreciates the real exchange rate.

5) Employment effects and political economy of the opening of the economy. Nogues (1981, 1982, 1988) showed that in Argentina there was no trade off between reducing trade barriers and demand for labor, since the labor component of exports was larger than the labor component of import substituting manufacturing production. This finding was important to neutralize one of the fears of the opening of the economy, namely, its adverse impact on the labor markets. Rodriguez (1981) modeled the direct relation between opening of the economy and real wages, as a result of the mentioned increase in the demand for labor.

6) Incredible reforms. The same economic policy, particularly the same economic reform, can produce very different effects on an economy, depending on the credibility of the population about the permanence of the reform. This fact inspired Calvo (1986, 1987, 1988) to model incredible reforms. For instance, if a Labor Flexibility Act is introduced, and entrepreneurs think that the new legislation is going to stay "for many years" (nothing stays forever), they will hire new

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<sup>5</sup> As happens frequently, the basic idea was very old (goes back to Hume), but the systematic analysis was developed during the 1970's (Frenkel y Johnson, 1976). Tablita was used mainly in Chile, Argentina and Uruguay.

<sup>6</sup> It was the first discussion among professional economists, about a current issue of economic policy, developed in newspapers and weekly magazines. In 1968 de Pablo started the application of modern economic analysis to current issues, in articles published in newspapers (see Dagnino Pastore and Fernández López, 1988, and de Pablo, 1995<sup>a</sup>).

workers since it will be cheaper than before to fire them during the next recession; while if they think that the reform will be quickly repudiated, because of the political impossibility to maintain it, they will fire some of its employees as soon as possible, namely the opposite result.

7) Quasifiscal deficit. Fiscal deficit is equal to public expenditure minus public revenues. If public expenditure and public revenues include "everything", then fiscal deficit measures the total impact of the public sector on the economy.

But if public expenditure is restricted to the non financial sector of the economy, i.e.: excludes expenditures financed directly by the Central Bank, quasifiscal deficit should be added to conventionally measured fiscal deficit to get a correct appreciation of the impact of the public sector in the economy. Who should be credited for pointing out the importance of quasifiscal deficit?

8) "Institutional" considerations. "The central message of this book is that for Argentina to grow again important changes are needed in the economic relations with the rest of the world, in the rules of the game of our domestic economic organization, and in the intensity and nature of social policies" (Cavallo, 1984). This proposal to restore sustained growth went well beyond Harrod-Domar, or neoclassical, recommendations, paying attention also to the elimination of price distortions, facing problems of government's credibility and reputation, etc.; in other words, emphasizing the implications of a change in the economic regime. Llach (1987) emphasized the importance of honoring all type of "contracts" for the reconstruction of the economy.

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Less related to immediate economic policy, but nonetheless very important for helping to introduce economic reasoning into decision making, are worth mentioning:

1) The Ph. D. dissertations written by Guadagni (1965) on Pricing of electricity services, Díz (1966) on Money demand and supply and the dynamics of inflation and Reca (1967) on Price response in the agricultural sector;

2) the pioneer works of Miguel Balboa and Alberto Fracchia on national accounts;

3) the works of "single issue" economists like Katz (1967, 1968 and with Kosakoff, 1989) on Patterns of industrialization and the Microeconomics of technological change, Elías (1967, 1992) on Growth accounting, Guissarri (1989) on Informal economy, Porto (1990) on Fiscal federalism, Dieguez (1991, and with Llach and Petrecollo, 1990) on Social expenditure, and Givogri (1993) on the Productivity of capital. Also the pioneer work of Cavallo (1988), in collaboration with Yair Mundlak, on counterfactual economic history in Argentina, estimating the loss of growth that resulted from distorting relative prices; and

4) the studies and conferences on the opening of the economy, deregulation, public expenditure, privatization of public sector firms, etc., organized by Fundación de Investigaciones

Económicas Latinoamericanas (FIEL) and Asociación de Bancos Argentinos (ADEBA) during the 1980's. ADEBA's annual award also encouraged professional economists to work on these areas.

## 1.2 Short run economic analysis

In addition to papers and books on specific issues, at the beginning of the 1960's professional economists began analyzing the performance of the Argentine economy from the short run perspective.

Instituto de Desarrollo Económico y Social (IDES), on a quarterly basis since the end of 1964; FIEL, on a monthly basis since 1965; and Fundación Mediterránea (FM) on a monthly basis since 1978, issued reports on the short run performance of the economy (FIEL and FM still do it).

There were also individual efforts, referred to specific economic programs and to the post II World War disappointing performance of the Argentine economy (in both cases, authors are ordered according to the date of their first published work).

On specific economic programs, like the Krieger Vasena, Gelbard, and Martínez de Hoz economic policies, the pioneer works of de Pablo (1972, 1974, 1979, 1979a, 1980, 1980a, 1980b, 1986, 1987, 1989, 1994, 1995), Arnaudo (1975, 1977a), Canitrot (1978, 1980, 1981), Ferrer (1979) Fernández (1982), and Di Tella (1983) ought to be mentioned; on the poor performance of the Argentine economy the early contributions are those of Ferrer (1963, 1979a), Braun and Joy (1968), Brodersohn (1969, 1974), Mallon y Sourrouille (1973), Arnaudo (1977, 1986) and Di Tella (1982). Di Tella and Zymelman, with the collaboration of Petrecolla (1967), analyzed the performance of the economy from 1876 to 1952. Particularly at the beginning, these analyses were verbal -in the sense of non-mathematic, non-econometric- and generally critical (authorities were accused of following "monetarist" policies, ignoring Keynesian or "structuralists" proposals)<sup>7</sup>. Except in the case of de Pablo, analysis showed little empathy with the decision-making process that the authorities were facing, in particular with institutional and political restrictions. The analysis of the performance of the economy concentrated on the stop and go nature of economic policy.

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Applied econometrics meant fitting individual macroeconomic functions like the consumption, investment and import functions, and estimating simple econometric models, but the dream of forecasting based on "an econometric model of the Argentine economy" proved unfeasible. Input-output tables were available a decade after the census on which they were

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<sup>7</sup> Minister Pinedo in 1962 was well aware of what a decade later was called the monetary approach to the balance of payments. In his words: "there are phases in the economy in which [the value of] a currency cannot be maintained without an extremely restrictive credit policy... We are facing now one of these phases, in which any credit expansion reduces the value of the currency or, frequently assumed then, that monetary and credit policies were autonomous.

computed, and accordingly were useless in those years of significant inflation and structural changes.

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Since the 1980s' most applied professional economists -many of them working as consultants- debated in newspapers. Roberto T. Alemann, Daniel Artana, Miguel Angel Manuel Broda, Juan Luis Bour, Domingo F. Cavallo, Raúl E. Cuello, Martín Lagos, Ricardo López Murphy, Carlos Melconían, Armando P. Ribas, Rodolfo Santángelo, Adolfo Sturzenegger, Federido Sturzenegger and Enrique Szewach, are among the most frequent contributors to the debate.

## 2. DESIGNING AND IMPLEMENTING ECONOMIC POLICY

Describing, analyzing and criticizing economic policy without participating in economic teams was a temporary job for professional economists. Because, not surprisingly, some of them eventually became involve with designing tools and participating personally leading economic teams.

### 2.1 Tools

Argentine economists claim to have invented the following tools of economic policy (invention does not mean starting from scratch, been 100% original. Bob Lucas did not "invent" rational expectations, nevertheless the Nobel Committee was correct in prizing his contributions to macroeconomic analysis).

1) Crawling peg. Contrary to Williamson's (1981) assertion, that frequent devaluations pari-passu with the difference between domestic and international inflation was invented in Chile in 1965<sup>8</sup>, the method was applied in Argentina since April 1964. "It was an argentine innovation" (Garcia Vazquez, 1994), "a profound innovation" (Di Tella, 1982) "that shocked the IMF" (Elizalde, 1980). The credit presumably corresponds to Félix Elizalde, president of the Central Bank.

2) Monetary Regulation Account. The designers of the financial reform launched on June 1, 1977, found that in order to maintain the relation between monetary base and money that existed before reform, to avoid a once and for all increase in money supply, reserve requirement should be 45% of deposits. Which meant that -even ignoring banking administrative costs and profits- active

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<sup>8</sup> "My 1965 Princeton Essay did not introduce the concept of the crawling peg, but it did for the first time give it a name... The first proposal was made by Harrod as long ago as 1933... Serious and widespread discussion of the proposal took off only around 1966... Applied in Chile since 1965, following the urging of Ricardo Ffrench-Davis, was also applied in Colombia since 1967, in Brazil since 1968 and in Argentina since 1975" (Williamson, 1981).

interest rates should almost double passive rates, a spread high enough to channel financial activity through the informal financial markets, domestic and foreign. Just the opposite of what was aimed, namely, the reduction -and, if possible, elimination- of the informal segments of the financial markets, that had evolve as a result of regulations.

To solve the problem "Cuenta Regulación Monetaria" was created. Each financial institution paid to the Central Bank a cargo rate for the loans financed with demand deposits (which were allowed but did not pay interest), and received from the Central Bank a compensation rate for the portion of the time deposits that they were forced to maintain as reserves. The credit corresponds to Adolfo C. D!z and Ricardo Arriazu, president and main adviser of the Central Bank respectively.

3) "Circular 1050". To index deposits and loans through financial indicators (for instance: interest rates), on April 1, 1980, the Central Bank issued Circular RF 1.050, that interpreted interest rates as percentual variations of an index, allowing the computation of the corresponding index. The proposal was very useful since it became possible to compute a daily index with practically no lag (indexes based on prices of goods and services had a two months lag, very inadequate in the presence of high and highly fluctuating rate of inflation). The credit corresponds to Aldo Dadone and Armando P. Ribas (1981)<sup>9</sup>.

4) "Desagio". Contracts denominated in nominal values include the rate of inflation expected during the time horizon of the contract. A sudden and unexpected elimination of inflation turns nominal increases into real ones. For instance, a 30 day time deposit of \$ 1, made when the expected rate of inflation, and the nominal rate of interest, are 30% per month, will mean that 30 days later the bank will pay \$ 1,30, just enough to maintain the purchasing power of the deposit. But if immediately after the deposit is done an antiinflationary program freeze prices, forcing the bank to pay the depositor \$ 1,30 will mean forcing it to pay 30% monthly real interest rate, which is unfeasible, unjust and unexpected.

To solve the problem "tabla de desagio" was created, transforming nominal values from the old to the new currency, depending on the date. For instance: if the 30% nominal interest rate reflected a 30% rate of inflation, at maturity the depositor will receive new \$ 1, resulting from the multiplication of \$ 1,30 of the old currency by 0,769, the corresponding factor from tabla de desagio. The credit corresponds to Daniel Heymann (as Axel Leijonhufvud points out to those who credit tabla de desagio to Leijonhufvud and Heymann).

## 2.2 Personal involvement

Tables 1 and 2 show the technical background of the ministers of economy and presidents of the Central Bank since 1958.

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<sup>9</sup> Circular 1050 was signed by de Pablo, but is was Daniel de Pablo

TABLE 1

## ECONOMIC MINISTERS

Minister	From			To			Days in Office	Technical background
	Day	Mo.	Year	Day	Mo.	Year		
Emilio D. del Carril	1	5	1958	24	6	1959	420	Lawyer
Alvaro C. Alsogaray	25	6	1959	25	4	1961	671	Engineer
Roberto T. Alemann	26	4	1961	12	1	1962	263	Foreign graduate studies
Carlos A. Coll Benegas	15	1	1962	25	3	1962	69	Old DES
Jorge H. Wehbe	26	3	1962	5	4	1962	11	Lawyer
Federico Pinedo	6	4	1962	25	4	1962	19	Lawyer
Alvaro C. Alsogaray	30	4	1962	9	12	1962	224	Engineer
Eustaquio Méndez Delfino	10	12	1962	13	5	1963	155	Lawyer
José A. Martínez de Hoz	21	5	1963	11	10	1963	144	Lawyer
Eugenio A. Blanco	12	10	1963	5	8	1964	299	Old DES
Juan C. Pugliese	19	8	1964	27	6	1966	677	Lawyer
Jorge N. Salimei	29	6	1966	2	1	1967	188	Old DES
Adalbert Krieger Vasena	3	1	1967	10	6	1969	890	Old DES
José M. Dagnino Pastore	11	6	1969	17	6	1970	373	Ph' D
Carlos M. Moyano Llerena	18	6	1970	15	10	1970	120	Foreign graduate studies
Aldo Ferrer	26	10	1970	28	5	1971	215	Old DES
Juan A. F. Quilici	1	6	1971	10	10	1971	132	
Cayetano A. Licciardo	11	10	1971	12	10	1972	367	Public accountant
Jorge H. Wehbe	13	10	1972	24	5	1973	224	Lawyer
José B. Gelbard	25	5	1973	20	10	1974	514	Entrepreneur
Alfredo Gómez Morales	21	10	1974	1	6	1975	224	Old DES
Celestino Rodrigo	2	6	1975	19	7	1975	48	Engineer
Pedro J. Bonanni	22	7	1975	11	8	1975	21	Old DES
Antonio F. Cafiero	14	8	1975	2	2	1976	173	Old DES
Emilio Mondelli	3	2	1976	23	3	1976	50	Old DES
José A. Martínez de Hoz	29	3	1976	28	3	1981	1826	Lawyer
Lorenzo J. Sigaut	29	3	1981	21	12	1981	268	Old DES
Roberto T. Alemann	22	12	1981	1	7	1982	192	Foreign graduate studies
José M. Dagnino Pastore	2	7	1982	24	7	1982	54	Ph' D
Jorge H. Wehbe	25	8	1982	9	12	1983	473	Lawyer
Bernardo Grinspun	10	12	1983	18	2	1985	437	Old DES
Juan V. Sourrouille	19	2	1985	31	3	1989	1502	Old DES
Juan C. Pugliese	1	4	1989	25	5	1989	55	Lawyer
Jesús Rodríguez	26	5	1989	8	7	1989	44	Lic. in Economics
Miguel Roig	9	7	1989	14	7	1989	6	Engineer
Néstor M. Rapanelli	15	7	1989	15	12	1989	153	Engineer
Antonio E. González	18	12	1989	28	1	1991	407	Public accountant
Domingo F. Cavallo	29	1	1991	26	7	1996	2006	Ph' D
Roque B. Fernández	27	7	1996					Ph' D



TABLE 2

## PRESIDENTS OF THE CENTRAL BANK

President	From			To			Days in office	Technical background
	Day	Mo.	Year	Day	Mo.	Year		
José Mazar Barnett	15	5	1958	31	7	1959	443	Entrepreneur
Eusebio Campos	3	8	1959	27	1	1960	178	Old DES
Eustaquio A. Méndez Delfino	28	1	1960	30	5	1962	853	Lawyer
Ricardo P. Pasman	31	5	1962	9	12	1962	193	Entrepreneur
Luis María Otero Monsegur	10	12	1962	16	10	1963	311	Lawyer
Félix Gilberto Elizalde	17	10	1963	29	6	1966	987	Old DES
Antonio Micele	30	6	1966	25	7	1966	26	Old DES
Felipe S. Tami	26	7	1966	2	11	1966	100	Master of arts
Antonio Micele	3	11	1966	14	12	1966	42	Old DES
Benedicto AARA Bianchi	15	12	1966	3	1	1967	20	Lawyer
Pedro Eduardo Real	4	1	1967	24	6	1969	903	Lawyer
Egidio Iannella	25	6	1969	25	10	1970	488	Public accountant
Daniel Fernández	26	10	1970	20	4	1971	177	Old DES
Ricardo Gruneisen	28	4	1971	23	8	1971	118	Lawyer
Carlos S. Brignone	24	8	1971	25	7	1972	337	Old DES
Jorge Bermúdez Emparanza	26	7	1972	28	5	1973	307	Lawyer
Alfredo Gómez Morales	29	5	1973	2	9	1974	462	Old DES
Hernán Aldabe	11	10	1974	29	10	1974	18	Lawyer
Ricardo A. Cairoli	30	10	1974	17	7	1975	261	Old DES
Emilio Mondelli	1	8	1975	3	2	1976	187	Lawyer
Eduardo A. Zalduendo	4	2	1976	24	3	1976	48	Foreign graduate studies
Adolfo César Diz	2	4	1976	31	3	1981	1825	Ph' D
Julio J.Gómez	1	4	1981	31	5	1981	61	Entrepreneur
Egidio Iannella	1	6	1981	1	7	1982	336	Public accountant
Domingo F. Cavallo	2	7	1982	26	7	1982	54	Ph' D
Julio González del Solar	27	7	1982	9	12	1983	471	Old DES
Enrique García Vázquez	10	10	1983	18	2	1985	437	Old DES
Alfredo Concepción	19	2	1985	25	8	1986	553	Public accountant
José Luis Machinea	26	8	1986	31	3	1989	979	Ph' D
Enrique García Vázquez	1	4	1989	8	7	1989	99	Old DES
Javier González Fraga	9	7	1989	23	11	1989	137	Lic. in Economics
Egidio Iannella	27	11	1989	19	12	1989	23	Public accountant
Rodolfo C. Rossi	20	12	1989	22	1	1990	33	Old DES
Enrique Folcini	23	1	1990	20	3	1990	57	Lic. in Economics
Antonio Erman González	21	3	1990	27	6	1990	99	Public accountant
Javier González Fraga	28	6	1990	28	1	1991	215	Lic. in Economics
Roque B. Fernández	31	1	1991	28	7	1996	2006	Ph' D
Pedro Pou	29	7	1996					Ph' D

According to table 1, Jose María Dagnino Pastore (1969-1970) was the first minister of economy of Argentina with maximum academic training in a US university. Domingo Cavallo (1991-1996) and Roque Fernández (1996 on) also have a Ph' D. While according to table 2, five presidents of the Central Bank -two of them also ministers of economy- have a Ph' D.: Adolfo Diz (1976-1981), Domingo Cavallo (1982), José Luis Machinea (1986-1989), Roque Fernández (1991-1996) and Pedro Pou (1996 on), while Felipe Tami (1966) has a Master of Arts degree<sup>10</sup>.

During the same period Argentina had 33 presidents of the Central Bank. In addition to the 5 Ph' D and 1 Master of Arts mentioned, 10 were Old DES, 8 lawyers, 3 public accountants, 3 entrepreneurs, 2 licenciados in economics and 1 had some formal training abroad.

This reading of tables 1 and 2 underestimate the participation of professional economists in economic teams. On the one hand, because Roberto Alemann and Carlos Moyano Llerena also had some formal training abroad; on the other hand, because ministers like Adalberto Krieger Vasena, Antonio Cafiero and Juan Sourrouille, led teams with many professional economists.

The leadership, courage, toughness, etc., of ministers of economy and presidents of the Central Bank are crucial, but the contribution of its main collaborators should not be underestimated. An incredible amount of time and energy of the minister is "wasted" in accompanying the president to protocolar meetings, neutralizing pressures, taking to the press, etc.; preparing legislation, implementing decisions, etc., is most of the time in the hands of collaborators. After retirement, high officials should write a paper crediting collaborators for their help<sup>11</sup>.

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How significant was the impact of professional economists on economic policy? There is no single answer to this question. The following response concentrates on specific episodes.

1) Freeing of interest rates and deregulation of financial activity. Financial reform launched on June 1, 1977, freed interest rates and allowed banks to do anything that was not specifically prohibited. Systematically recommended by Armando P. Ribas since the beginning of the seventies, it was introduced during the Martínez de Hoz period, by president of Central Bank Díz.

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<sup>10</sup> In the 40 years since 1958 Argentina had 32 ministers of economy. In addition to the 3 Ph' D mentioned, 12 were Old "Doctors in Economic Science", 6 lawyers, 4 engineers, 2 public accountants, 2 had some formal training abroad, 1 licenciado in economics and 1 entrepreneur. And Quilici?.

<sup>11</sup> Martínez de Hoz (1981, 1991) explained his version of his ministry in great detail (the only case, to the best of my knowledge). De Pablo (1980a, 1986) interviewed former ministers of economy about their job. Di Tella and Rodríguez Braun (1990) got the written version of ministers of economy between 1946 and 1983, while the September 1994 issue of Valores published the testimony of presidents of the Central Bank from the seventies in Universidad Católica Argentina.

2) Liquification of liabilities. The increase of the real value of firm liabilities, resulting from very high real interest rates (say: 2% per month), increased the risk of massive bankruptcies in the private sector. Since July 1, 1982, nominal interest rates were pegged well below the rate of inflation, to reduce the real value of liabilities. It was introduced during the Dagnino Pastore period, by president of the Central Bank Cavallo (Cavallo, 1981, 1982)<sup>12</sup>.

3) Austral Plan. In mid 1985 the rate of inflation was approaching 1% per day, and increasing; and that was considered too much... even in Argentina. So the time for "social demand for action" had arrived.

On June 14, 1985 Austral plan was launched, combining orthodox and heterodox measures. The latter included fixing the exchange rate, public utility rates, wages, prices and interest rates (so called "anchors"), and introducing "tabla de desagio"; the former included temporary measures to increase fiscal revenues. Austral Plan was temporarily very successful, inflation resuming one year later (Israel launched a very similar plan at the beginning of July 1985, that lasted much more because of better orthodox component). It was introduced during the Sourrouille period.

4) Convertibility Plan. At the beginning of 1991, when the third hyperinflation was starting, Argentina was heading to the use of a single currency: the US dollar.

On April 1, 1991 Convertibility Plan was launched, pegging the exchange rate "1 to 1" to the US dollar, and making the peso fully convertible. Credibility on Convertibility was based on the obligation of the Central Bank to maintain permanently enough foreign reserves to buy 100% of the monetary base. Convertibility Plan had immediate success, but contrary to previous antiinflationary programs, its success continues more than 8 years later, and more than 2 years after the minister that introduced it (Cavallo) left office.

Like any successful program, Convertibility Plan has now many "fathers". Lagos (1989) anticipated the need of Convertibility, as the "only road to restoring confidence on the local currency" (my italics). Anyhow Cavallo's merit is overwhelming.

### 3. CONTRIBUTIONS TO ECONOMIC ANALYSIS

In addition to interaction with economic policy, argentine professional economists have contributed to the stock of economic analysis.

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<sup>12</sup> Bonex Plan, introduced at the end of 1989, was also inspired on the impossibility of honoring contracts as originally stipulated, but in this case the problem was generated on the deposit side of the balance sheet (7 day time deposits, denominated in pesos, were unilaterally transformed in dollar denominated bonds, with 10 years maturity, that could be sold in the secondary market, initially with a 73% discount, later with practically zero discount). It was introduced during the Gonzalez period, being suggested by Roque Fern ndez, then vicepresident of the Central Bank.

Linear programming. Barral Souto (1941) presentation of Ricardo's theory of the division of labor, is a pioneer exposition of what was later called linear programming. In 1961 the paper was published in the International economic papers, a journal devoted to the publication in English of "classic" monographs originally published in other languages. But it was not enough to impress the Nobel committee, that in 1975 gave the award to Leonid Kantorovich and Tjalling Koopmans (Dantzig could also complain, I presume).

Passive money and "structural inflation" (already referred).

Money and growth. Sidrauski introduced money in neoclassical growth models, writing a couple of "classic" papers on the subject (Sidrauski 1967, 1967a).

Time inconsistency and incredible reforms. Calvo introduced realism in economic policy modeling, showing the implications of time inconsistency (Calvo, 1978) and the already referred works on incredible reforms.

Computational issues in general equilibrium models. Mantel's doctoral dissertation was dedicated to improve the proof of the existence of competitive general equilibrium. In addition to that "Mantel (1974) proved Sonnenschein's conjecture in the case of continuously differentiable demand functions", says Debreu (1984) in his Nobel conference. To my knowledge, Rolf Mantel is the only Argentine economist that has been mentioned in a Nobel conference<sup>13</sup>.

Other. Rodolfo Manuelli on endogenous growth, and Julio Rotemberg on macroeconomics, are other Argentine economists that deserve mention in this survey.

#### 4. A PERSONAL NOTE

This paper could have been written by any young student of economics patient enough to read the monographs and books listed at the end; but it was written by a 55 years old "young" economist who not only read them, but actually lived in Argentina while they were being inspired, conceived, written, discussed and published. Interacting with the authors first as student and research assistant, later as colleague and friend of all of them.

Among others, I could proudly say: "we did it". But that would probably be too much. More appropriately it would be to say "we did it, without realizing that we were doing it".

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<sup>13</sup> This paragraph does not do justice to Mantel's contribution. It is 100% my fault, due to ignorance. I sent him the preliminary draft of the paper, hoping to improve this portion, but unfortunately Rolf passed away at the beginning of February 1999. He deserves that someone, with enough technical skills, summarizes his contribution to economic analysis.

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The story presented in this paper is a normal one. It would have been surprising that the first Argentine economist that got a Ph'D in a US university, on his return to Argentina would have gone directly from the airport to the ministry of economics, to lead an economic team. The Argentine case shows some previous "homework", like understanding analyzing specific issues, engaging in contemporaneous short run analysis, etc., and eventually getting major responsibilities on economic policy.

It is a collective, spontaneous story. The works included in this paper show that no single person, no single institution, could claim the bulk of professional interaction with economic policy<sup>14</sup>. This, again, is not surprising. Out of a common background multiple monographs emerged through many years, and the neat presentation of this paper should not suggest the reader, that the resulting body of knowledge emerged from a grandiose research plan that was established from the very beginning.

It is also a rich story, its richness arising from the "raw material" generated during the period in which occurred. During the second half of the XX century Argentina was a giant school of economics, and what is a cost for the population is a source of inspiration for economists (I definitely prefer to live in a country in which the front pages of the newspapers are boring, than in another in which they are exciting). Economists who live in Switzerland had to imagine the effects of maxidevaluations, the impact of inflationary shocks or balance of payments bottlenecks; in Argentina it was just a question keeping the eyes open... and translating reality in the language of professional economists.

It is a sad story as well, because most of the ingenuity displayed by professional economist was dedicated to design second best tools, because the first best solution was considered unfeasible. Indexing, liquefying, compensating for incredible high reserve requirements, are very good examples of using talent to neutralize, but not eliminate, inflation, distortions, etc.

But at the same time is history. The hyperinflation of the first semester of 1989 (in July 1989 prices rose 4% per... day) was a watershed. As a result of opening of the economy, privatization and deregulation, since the 1990's we live in a "normal" country, in the sense that our agenda for research is very similar to the one existing in many other countries. Which means that we can export, and import, talent, ideas, books, papers, courses, etc.

What is the role of the professional economist, in a "normal" country? For earning a living, I see demand for our services in firms, government, education, the press, etc. From the "general equilibrium point of view", I forecast a return to the perspective of the Founding Fathers. Neither

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<sup>14</sup> Elias finds "specializations" among universities. La Plata concentrated on fiscal policy, Cordoba on public sector firms (tariffs and privatization), Tucuman on empirical issues, Mendoza on regional economics, Buenos Aires on stability.

Smith, nor Ricardo or Malthus were worried about the rate of inflation of the next month, or the variation of industrial production during the next quarter. They had systemic preoccupations, for instance, where are we going?. Think of the worries about the Stationary State, and the corresponding discussion about the Corn Laws. Today, the implications of the globalization of the economy, and the volatility of international capital markets, would find a privileged position in the agenda of the "Political economy club".

Professional economists have finally landed in economic policy, and for better or worse (for better, in my opinion, despite the fact that sometimes, applying wrong economic analysis, we generated some of the problems we eventually had to solve), they have landed to stay.

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