International Monetary Fund's intervention during crisis in emerging countries. Case study of Argentina

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Abstract: *We addressed the theme of the IMF's intervention in Argentina because we found it challenging to discover how an emerging state with potential could have passed through all economic phases in just a few years. First, the empirical analysis proved that the continuous involvement of international organizations does not always have positive effects. This study aims to analyse the external debt, a cause of the economic collapse of 1998-2002, and what the authorities should had done to stop it. Second, in order to highlight the reasons why not only the right measures were taken, we applied an econometric model with four exogenous variables for 1987-2015. The external debt should have been restructured at the level of each creditor, but also with respect to the total amounts borrowed. At the same time, the private debt boom should have been stopped by stimulating competition during crisis.*

Key-words: *external debt, financial crisis, IMF intervention, emerging economies, Argentina*

1. Introduction

One of the largest economies in Latin America, Argentina, is currently undergoing an economic transformation that promotes sustainable economic development with social inclusion and integration into the global economy.

However, 15-20 years ago, Argentina went through an unexpected and extremely severe crisis that raised many questions about what could have been done at that moment and before to avoid the drama of a nation. It also gave the whole world a lesson from which everybody should learn even today. History proved that all economic recessions became, sooner or later, taboo issues. Statistical results showed they had a rather psychological connotation than an economic one. Between 1998 and 2002, Argentina went through an identity crisis, more severe than the latest one (2009-2013), when both the national leaders and the international organizations were more like some detached observers who seemed to accept the situation as a moment whose settlement will be eventually decided in time.

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In this research paper, we address the theme of the International Monetary Fund's intervention during crisis in emerging countries because we found it challenging to discover how countries with socio-human and economic potential like Argentina can pass through several economic phases in just a few years. It has thus showed the world that the main danger of the modern economy is the financial crisis and its socio-economic effects. Early this century these economic paradigms were fleeting moments that were easily overcome. As society evolved and culminated in the IT revolution and in an intensified economic globalization, the crisis has become a real phenomenon which can occur spontaneously. Even more, a crisis has the power to abolish economic theories.

As we mentioned before, we chose to build the case study around Argentina as it presents one of the most dynamic and complex accumulation of events that a country could pass through over several years, leaving behind confusion, doubts and questions about the trend towards which the current economy is heading. In this article, we created a mostly economic view on the topic and we may begin by stating that Latin American countries are a role model in terms of economic management. For this reason, we chose to analyse and understand how these economies work, beyond Europe and the USA, as their systems are very well known.

The information needed for this paper was obtained from the archives of the International Monetary Fund, the World Bank and the chronology of records and archived studies in Argentina, especially those kept by the Ministry of Economy and Public Finance.

The main purpose of the research is to prove that the monitoring and continuous involvement of international organizations does not always lead to benefits. In addition, the simple creation/existence of financial institutions does not necessarily bring stability to the world. Besides these aspects, the idea of excessive economic globalization might lead as well to neutral or even negative results like the loss of national identity. When these combine with irrationality and corruption, everyone will ultimately suffer. The case study deals with the problem of external debt in Argentina, a cause of the economic collapse. In addition to this, we highlight the role that the IMF and other national and international authorities should have played so that the negative effects of the depressions were brought to a halt and would not degenerate, affecting an entire country.

Besides this introduction part, the structure of this research paper consists of four more sections. The first half of section 2 presents the specific literature regarding the IMF attributes and actions in the countries that appealed to its financial support. In the other subsection of this chapter, we illustrated some theoretical aspects regarding the timing, target, system of organization and intervention mechanisms of the IMF needed to achieve a successful and sustainable economic growth and to help countries overpass the economic, monetary and financial disturbances. We took into consideration what the specific literature

reveals. The third section is intended to analyse the main factors that triggered the crisis in Argentina, following some important coordinates, such as the evolution of the sovereign debt in times of crises, but also before and after the recession periods. Like the second part, the fourth consists of two main parts. On the one hand, we studied the IMF plans to adjust economic imbalances in Argentina, what went wrong and what would have been the ideal austerity plan. On the other hand, the second half of the chapter shows how the IMF should have responded so that the external debt of Argentina would not increase. A multiple regression analysis was developed here to study the impact of several monetary and budgetary indicators upon the total external debt stocks of Argentina for a period that included the economic boom (1987-1997), years of severe crisis (1998-2002) and the economic recovery (2003-2015). The conclusions and the references form the last two parts of this research paper.

2. The IMF's instruments and mechanisms in the emerging markets

The creation of international structures in order to promote stable economies was the immediate effect of the disasters of the two World Wars that destroyed industries, trade markets and mostly everything related to the economic development of a country. In order to prevent such events in the future, many countries have agreed to the creation of international institutions with humanitarian, economic and cultural attributions.

Among the most important international organizations we may mention UNO (United Nations Organization), the most important organization created after the 2nd World War with the aim of promoting human rights, UNICEF (United Nations Children's Fund) was created for humanitarian assistance for children and mothers, while the WTO (World Trade Organization) deals with the implementation of trade rules. The main objectives of the IMF (International Monetary Fund) are related to promoting international monetary cooperation and financial assistance to the states of the world.

No matter the name of the institution, the control of a country's economy by a foreign organization represented for many entities and individuals an attack on national values, irritating people, especially when these actions affect the citizens of that country to a certain degree. One reason for the creation of the IMF was the less inspired actions took by the countries affected by the Great Depression, between 1929 and 1933. They imposed trade barriers depreciating their own currencies in order to compete with the others on the export market. These actions of self-defence lead to a downward evolution of international trade and to the rise of the unemployment rates, especially in the emerging economies.

Starting from the assertion of the former President of the World Bank, Robert Zoellick, according to which "emerging markets are now sources of growth and

opportunities" and taking into account the recent developments in these markets, it becomes obvious that the emerging states turn the global economic balance of power in their favour, amid economic difficulties and instability that crosses the Western developed economies (O'Neill, 2011). In order to avoid future financial crises such as those from the 1990s in Asia, Russia and Latin America, it was decided, at the initiative of the G7, the establishment in 1999 of the decision-making group G20, bringing together the developed economies and the major emerging economies. Thus, the G7 group, the United States, Japan, United Kingdom, France, Canada, Germany, Italy, as countries that compose the developed area of the world economy, joined Russia, Brazil, Mexico, Argentina, China, India, Indonesia, South Korea, Turkey, Saudi Arabia, South Africa and Australia, representing the emerging area of the global economy. The 20th place is reserved for a European Union country, which provides the six months Presidency; currently, that country is Estonia.

Although the International Monetary Fund and the World Bank also participate in the G20, five states in the emerging markets category mentioned before created BRICS. This group was founded for political and economic reasons, settling as major objective the protection of their own economies and internal resources from the pressures of the global corporations, giving up the external financial assistance and leaving behind the financial practices of the World Bank and International Monetary Fund. These countries are engaged in a competition with Western economies and they intended to diminish the political influence of the G7, the international coordination of macroeconomic policies and the establishment of a new equilibrium in the global geopolitical relations through the establishment of a new pole of power (Botis 2013, pp. 10-11).

Created back in 1945, the International Monetary Fund is an organization of 189 countries today whose official objectives are to foster global monetary cooperation, to secure financial stability, to facilitate international trade, to promote high employment rates and a sustainable economic growth, but also to reduce poverty around the world (IMF, 2017). One of the original purposes, maintaining exchange rates for international free trade, collapsed in the 1970s when the world shifted away from the gold standard (Vreeland, 2003, pp. 8-9). However, among the basic targets still available nowadays, we may mention the "maladjustments" correction for the members' balance of payments without "resorting to measures destructive of national or international prosperity" (IMF, Articles of Agreement, 1946). Thus, we may consider that the IMF changed its major operations from regulating currency to managing balance of payments difficulties, becoming more involved in the national policies of much of the developing world.

The primary way in which the Fund intervenes in a country's balance of payments is by entering into an agreement with the government. The Fund promises to provide a loan of foreign currency and the government is responsible to make specific policy changes. The IMF obtains the required resources mainly from the deposits each member state contributes. This contribution is called a "quota" and

implies the payment of an interest by each member. The size of the quota depends on the volume and the degree of development of that state's economy and it determines the number of votes of each member.

By providing countries with loans during financial crises, the IMF plays the role of an international lender of last resort. According to some economists, this lender of last resort introduces moral-hazard concerns (Fischer, 1999, pp. 92-96). The most obvious causal mechanisms linking economic crises to IMF program initiation is that governments facing severe external payment difficulties, low reserves and limited access to international financial markets have few alternatives other than to seek funding from the IMF and other financial institutions (Pop-Eleches, 2009, p. 38).

In addition to all that we have mentioned so far, a more profound literature overview will be developed in the following subsections. We will focus both on the effects of the IMF financial support on financial markets of the emerging countries, but also on factors that effectively conducted to the need for IMF loans.

2.1. IMF's financial support for emerging economies

Regarding the IMF's intervention effects on the financial markets, most economists highlight that even the news about a possible IMF assistance has a significant influence on financial markets.

Kho and Stulz (1999) and Kho et *al.* (2000) use event studies to examine the impact of IMF lending decision on the value of domestic and US bank stocks during crises. Both studies report that these bank stocks tended to earn out of extraordinary returns around announcement times. During the same period, another study (Brealey and Kaplanis, 2004) used a wider sample of IMF programs and detected a significant decline in asset prices.

Late 20th century and early 21st century brought some critical imbalances in many countries, especially in the emerging ones. In this context, a major impact of the IMF program on the bond and stock returns it is also to be found during the Tequila crisis in Argentina. Argentina was hit hard by the Mexican crisis of 1994-1995. The national currency, peso, came under attack and there was a run of bank deposits. Argentina successfully announced at that time the implementation of a series of policies to reduce the "spillover" effects. The specific literature proves that Argentina's agreement with the IMF, the "dollarization" of reserve deposits in the Central Bank and the reduction in reserve requirements had a strong positive impact on market returns (Ganapolsky and Schmukler, 1998).

Moreover, the events during the Asian, Russian and Latin America crisis of 1997-2001 proved that stock markets react to delays in the IMF loans (Hayo and Kutan, 2005). Regarding the market returns and volatility, the research of the last economists mentioned was conducted for a group of six emerging markets: Argentina, Brazil, Indonesia, Pakistan, Russia and South Korea. Similar results were

discovered and published two years later for Indonesia, South Korea and Thailand and referred to the Asian crisis of 1997-1999 (Evrensel and Kutan, 2007).

2.2. The determinants of the IMF's financial support

One of the most important factors of influence for the Fund's surveillance outcome is the political and geopolitical inputs, such as lending decision. It is proved by several authors that several IMF forecasts are in favour of countries voting in line with the United States. For instance, a systematic bias in IMF inflation forecasts is a proxy for political proximity to USA that has been found to be a strong determinant of IMF loans (Dreher, Marchesi and Vreeland, 2008).

In addition, public information releases of IMF produce a more favourable reaction of the financial markets from the politically influential member countries. IMF surveillance appears to be more favourable for countries with larger amounts borrowed from the IMF (Fratzscher and Raynaud, 2010).

Sturm et al. (2004) analysed how to discover the differences between the economic and political determinants of IMF's loans for a panel of 118 countries over a 30 years period of time: 1971-2000. All in all, the research papers dealing with the political aspects regarding the IMF lending prove a direct connection between the number of votes in line with the US and the amount of IMF resources given as a loan (Barro and Lee, 2005). Some studies underlined that the closer cultural and political proximity to a developed state, the higher the probability for that country to receive IMF money. At the same time, others argued that loans could be used by creditors to control strategic resources from debtors, e.g. oil reserves, nuclear capacity etc. As a consequence, the distribution of IMF funds is also a matter of geographic position of borrowing countries (Reynaud and Vauday, 2009).

The analysis of the external public and private debt is not necessarily a modern concern, since the history of finances was often confronted with dramatic situations. Poor management and inadequate use of the financial resources led, in certain periods of time, to desperate circumstances. For instance, the high public debt accumulated during the financial crisis of 2009-2013 by the EU countries has seriously questioned the health of the public finances and the sustainability of the European fiscal and budgetary policies. Many European leaders faced the challenges of rethinking these policies and adopting prudent indebtedness measures. The ultimate goal is attaining a sustainable level and a debt portfolio structure (regarding sources, costs, maturities and risks) adequate to each country's peculiarities (Dinca and Dinca, 2013, pp. 119-120).

The sovereign debt crises of the last century called for urgent measures to be undertaken. The national authorities together with the financial institutions have applied these measures differently and somehow inconsistently. This is one of the multiple reasons for which countries searching for sustainable economic

development had to face the problem of reimbursement high amounts of borrowed money continuously.

3. The management of the sovereign debt of Argentina

Argentina has always been regarded as an emerging economy with an intolerance syndrome regarding the payment of debts. This can be defined rather as the inability of this country to effectively manage external debt in order to avoid an economic collapse that would jeopardize its payments. Historical evidence suggests that the so-called "eternal debt" is not that permanent as it depends on the succession of the periods of economic growth and recession.

Argentina is a real example of incapacity to face debt reimbursement to creditors, recording, throughout history, five such cases.

The first loan obtained dated 1824, eight years after the national independence. The credit was taken from a British bank, Baring Brothers. The amount borrowed from the UK was worth 570,000 GB £ and the repayment of the total amount reached 1,000,000 GB £. According to historical evidence, the money was used solely to cover the damages caused by the War of Independence. In fact, the financial resources borrowed were used for enriching the privileged Argentinian class (Shumway, 1991).

After adopting the Constitution in 1853, Argentina experienced a period of economic progress, despite the Civil War. After a period of economic expansion, in 1870, the external debt problem got out of control. The plan of recovering proposed by the new party involved the suspension of convertibility of peso currency to gold and other tax adjustments designed to control the continuous rising debt. Although the results were very shy at first, the budget deficit began to decline slowly and a possible doubling of the debt was stopped.

Until the crisis of 1890, the country succeeded to attract foreign capital and investors from many European countries began to place their securities. The immediate effect was the development of key economic sectors such as agriculture, industry and exports. In addition, Argentina recorded demographic growth as a direct result of the liberalization of immigration. Yet investment fell sharply when the international press reported the financial difficulties the state faced, especially on the real estate market, causing many investors to withdraw their funds. The overheating of the economy led to inflation, due to the existence of monetary and fiscal policy disturbances and to the lack of connection between exports and the payment of external debt. Argentina went into a very profound economic and political crisis that culminated in the collapse of the banking system. The context described brought about an external debt crisis, and Argentina resorted to new loans.

The crisis of 1929 affected the whole world although, in the case of Argentina, things were different. During the crisis that lasted four more years, most

indebted countries in Latin America have failed to pay external debt, while Argentina resisted. Although the unemployment rate and inflation erupted here also, the fiscal and monetary policies adopted led to domestic production and exports revitalization. Thus, in two years, the recession was overcome and the country started once again to rebuild the economy.

The macroeconomic context of the crisis in 1980 indicated another picture for this South American emerging state. All the indebted countries in Latin America, except Colombia, failed to pay debts. Among the causes of default were the crisis of the 1970s and 1980s, the overvaluation of the exchange rate that led to hyperinflation and the existence of a generalized chaos in the financial system. The adopted policies determined the exit of foreign capital, which was the reason for a new reform that required capital liberalization and lower inflation to regain competitiveness. Although in a first phase the plan was a success, the damage had been already done because external debt continued to rise and the evolution of interest and exchange rates went in the wrong direction.

Figure 1 presents the evolution of the external debt (primary axis - blue left side) and of the inflation rate (secondary axis - red right side) for 1970-1991.
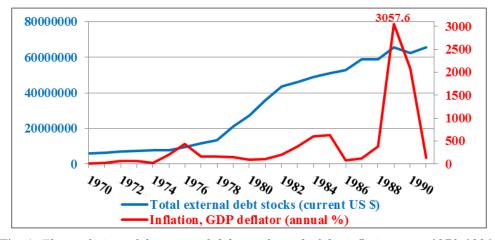

Fig. 1. *The evolution of the external debt stocks and of the inflation rate, 1970-1991*

The multiple experimental policies adopted between 1970 and 1990, including the exchange rates' volatility, created hyperinflation of even 3,000% in 1989, an increased budget deficit and a higher debt burden as the external debt increased in just one decade (1980-1991) by 2.4 times.

Figure 2 describes the dynamics of the two macroeconomic indicators presented in the previous line chart, for 1992-2016 period of time.
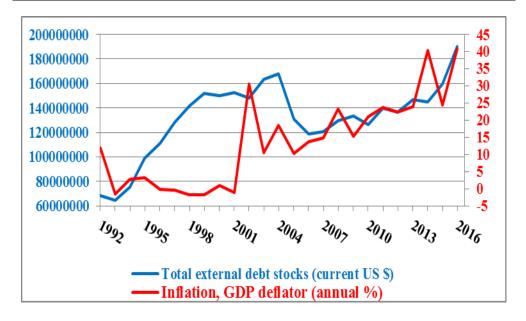
Fig. 2. *The evolution of the external debt stocks and of the inflation rate, 1992-2016*

As we may observe in Figure 2, the inflation rate had a syncope evolution, with a sharp increase in 2002 after six years of low inflation rate or even a downward trend of prices as a consequence of the economic and political irrational decisions taken during the financial crisis. Menem's policy of bringing the inflation rate at 0 or below (deflation) and the bound between the peso and the dollar led to poor economic growth. Not long after, the inflation rose again more than 25%, entering a new upward route, a phenomenon which seems to be present even today.

The controversial crisis of 2001 is a direct consequence of the events that took place during the 90s, under the leadership of Carlos Menem. Although socialism is a regime widely accepted in this Southern American state, the way Menem implemented this system lead to the „Argentinian lesson" with both positive and negative effects.

Menem's economic model provided a set of changes aiming at the reconstruction of the economy, where the main role was given to privatization. The purpose of this model was to reduce the budget deficit and external debt alleviation. Immediately after taking power, Menem imposed measures such as decentralization of education, social justice and wage growth in all sectors of activity. All these measures and many others were taken with the support of the IMF during 1991-1998 when it provided financial assistance, as seen in Table 1.

Type of financing	Applied	Deadline	Value (million current US $)	Austerity plan
Stand-by	1991	1992	989	Opening the capital market
Extended facility	1992	1996	5,089	Privatization of banks and companies; strengthening the collection system
Stand-by	1996	1998	720	Tax evasion control, new reforms for the education and health systems

Table 1. *IMF intervention in Argentina between 1991 and 1998*

This austerity plan was based on privatization and openness to foreign markets, but the IMF's obsession to privatize all state-owned companies will be the pillars for the depression of 1998-2002 which hit Argentina. Production development should have been supported by local companies. Instead, as a result of the foreign investments, the national firms were "defeated" and eventually disappeared.

Oil liquidation and privatization of YPF, a national petrochemical company, has been the most disastrous decision of Menem because this profitable company was considered the pride of the nation. Fuel trade is an operation of national interest which brought throughout history huge financial resources for Argentina. Oil exploitation helped create thousands of cities, thousands of jobs, more infrastructure work. Research conducted in the recent years showed that shares of YPF were undervalued from 38 US $ per share to 19 US $ per share. It was "sent" to the private sector under a contract for 25 years and for a price equivalent to that achieved in 9 months of production.

4. The financial crisis of Argentina and the IMF's intervention

In 1998, the country enters recession and the IMF began drawing attention to the economic vulnerabilities, urgently demanding fiscal adjustments.

The privatization madness, the bound between the peso and the dollar, the restriction of exports and the commercial problems led Argentina to a severe collapse. For this reason, the IMF required fiscal adjustment actions called "fiscal austerity plans". Under the program, the financial aid to Argentina, as extended credit facilities, was of 2,638 million US $, with maturity in 2000. The money was used for labour market reforms, to avoid the disappearance of the middle class and to reduce the unemployment rate after massive layoffs by privatized companies. The requirements also referred to budget deficit target which was 2.5% of GDP and reforms in education and health. Argentina experienced low quality in school education and medical care. The number of school dropouts and deaths increased continuously.

One year later, in 1999, Argentina began experiencing capital losses due to the departure of foreign investors together with astronomical amounts of money withdrawn from banks. Banks restricted their activity and started to impose limits on cash withdrawals. In the chaos, the adjusting IMF's austerity program required debt rescheduling and caution regarding the fixed exchange rates. Under this first plan of austerity, Argentina had to record a pole of growth of 3%, but it recorded a contraction of the economy, e.g. in 1999, when the economic decline was of -3.4%.

The failure of the IMF's intervention for 1998-2001 is reflected in the dramatic developments in economic indicators as the ones presented in Figure 3.
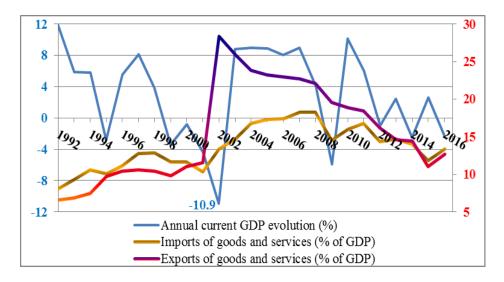

Fig. 3. *The annual evolution of GDP and exports and imports, 1992-2016*

If until 1991, exports exceeded imports, starting from 1992 until the middle of the crisis, in the year 2000, imports were the ones with higher values. Both imports and exports are expressed as percentages of GDP and their corresponding axis is the secondary one, on the right side of the chart. Local production decreased and the agricultural and industrial associations have lost to the detriment of imported goods. After 2000, the IMF's adjustments contributed to a favourable trade balance so that in 2002 exports were much more significant (28.4% of GDP) than imports (13.4% of GDP). This trend continued until 2015. Although GDP had a downward trend during the last years of analysis, the value of imports and exports expressed as percentages of GDP followed the same general trend.

In fact, the GDP dynamics is extremely unstable. However, with a single exception in 1994, the GDP has continuously increased year by year until 1999 when Argentina had already gone through the first phases of the crisis: a drop of economic development by 3.4%. Between 1999 and 2002 we may no longer talk

about economic growth. GDP decreased significantly so that, in 2002, the drop was very severe, of 10.9%. The next six years (2003-2008) are characterized by a constant growth of the current GDP and it represents the most stable period of time of the whole analysis. However, the last eight years of analysis (2009-2016) show a very interesting evolution. Although amplitudes are not very high, GDP fluctuated between plus and minus almost every year.

4.1. IMF's measures for economic recovery

The beginning of Millennium III was a moment of critical decisions for Argentina. Unfortunately, the errors in the act of decision implementation created anarchy.

The new leadership (De la Rua instead of Menem) promised to stabilise the economy, but he did not take any decisions on punishing the fraud in the economy. This led the country on the road to perdition and not on the road of glory as the radical De la Rua proudly and extremely convinced declared. Argentina's apparent rescue came from the IMF which, together with the public authorities, decided to adopt a new austerity plan, this time accompanied by a financial loan. On March 10, 2000, the IMF granted a loan worth of 76.577 million US $ as a stand-by credit. The external debt continued to increase during this period because of the poor management of the exchange rate, but also because of the IMF's inability to attract earlier, when the economy started to contract, the rescue loans so much needed, i.e. in 1997.

In addition to all the economic facts presented, the citizens' social life also changed. One of the most important changes was the middle class "extinction", ruined by the layoffs and the cuts of financial aid. The lack of resources of the health system led to an increased mortality rate. In a country facing full recession, all the cities became areas of melancholy and sadness. This was the result of living in a continuous corrupted system, the result of the representatives' inability to adapt and implement sustainable socio-economic and institutional decisions. Furthermore, the social and economic situation in Argentina was characterized as a real genocide. Year 2000 ends with a bitter taste for Argentina due to the prolonged recession and the increase of the public and private debt.

Among the main causes of the continued growth of the external debt we may first emphasize the opening of capital, which led to foreign currency loans and an increased interest rate, making the country vulnerable. Second, the limitations in collecting taxes brought about the increase in public debt, affecting the state's ability to pay its debts. The corrupted institutions and political classes, both vertically and horizontally, exonerated individuals and companies from taxation. Third, Argentina's external debt and thus, its growth, were also influenced by the IMF's credits, by the current account balance that includes also the trade balance, by the net lending/net borrowing ratio and by the foreign direct investment inflow. All

these variables are included in an econometric model to prove whether they really had an impact and influenced the external debt evolution.

Although budget surpluses existed during the 1990s, they were not large enough to cover the interest. The exports increased by only 7.7% in 2001 and it became impossible to cover the interest rates on the monetary market. Statistically, the excess of exports as compared to imports averaged 0.14% of GDP, a value well below the interest rates that represented 2.4% of GDP. As a consequence, the eternal sovereign debt reached 65% of GDP in 2001, the poor implementation of economic policies, the corruption phenomenon and the inappropriate debt management of IMF being the input variables that led the country almost into bankruptcy.

In Figure 4 below we observe the complete structure of the total amounts borrowed by Argentina between 1992 and 2016 from the foreign markets, including the IMF funds.
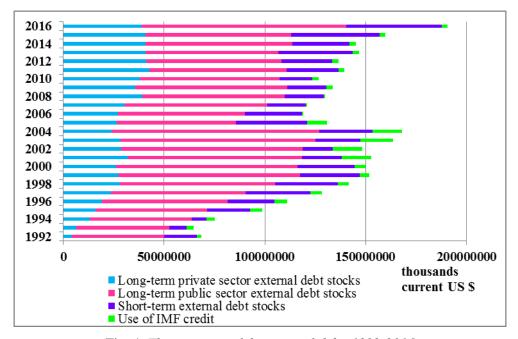

Fig. 4. *The structure of the external debt, 1992-2016*

The highest weight in the total external debt is the one of the long-term public sector external debt which is represented by the long-term foreign loans contracted and employed by the state or by the local public administration, mostly in foreign currency. For the selected period of time, the highest weight was recorded in 1993 (71.30%), while the lowest was to be found in 2013 (45.12%). The private debt represents only about half or even less, in the first years of analysis, of the public

debt. During the 25 years studied, the private sector debt never exceeded 31% of the total external debt. Although IMF loans and the short-term ones have small weights, they played an important role, both of them putting additional pressure on individuals and companies.

The 2001 and 2002 political measures, the IMF intervention and the main consequences are presented in Table 2.

Year	Political measures	IMF intervention	Consequences
2001	The change of the 29.5 billion US $ from a short-term debt into a long-term debt	Draws attention on the possible decrease of competitiveness	The increase of interest rates and vulnerability of the financial market
	Deficit 0 Law	Supports the project offering 7.2 billion US $	No positive effects were recorded, the budget deficit reaching 3.6% of GDP
	13% cut of budgetary wages and pensions	IMF refuses to offer the amount of 1.24 billion US $	The unemployment rate increases, while the private consumption decreases
2002	The peso-dollar bound is broken, the control of banks and capital, the negotiation of public debt	The reimbursement deadline is extended	Peso depreciation by 29%; from 1 US $ = 1.4 peso to 1 US $ = 2.05 peso
	Bank withdrawn is limited to 1,000 US $	Requires caution to avoid internal chaos	The bank accounts of over 3,000 US $ are transformed into certificates of deposit
	The collapse of the whole bank system	Accuses the bank system of negligence	Banks are forced to issue bonds
	The bankruptcy law is adopted	Takes control over the use of capital and imposes restrictions with respect to the private debt payments	Capital use control and restrictions regarding the private debt reimbursement

Table 2. *IMF intervention in Argentina in 2001 and 2002*

All in all, we believe that the blame for failure belongs to the external debt management leaders who took loans to "(re)finance the country", ultimately funding the collapse itself.

4.2. Econometric approach for the analysis of the total external debt evolution in Argentina

In order to understand better why Argentina and the IMF have focused their attention only on macroeconomic targets, which ultimately failed, without seeking solutions from the core issues, we performed a data analysis using an econometric model. Each indicator included in the analysis has 29 observations covering the

1987 to 2015 period of time, on a yearly basis. Data originates from The World Bank and the IMF's statistics databases. The dependent variable is the total external debt, while the four independent variables we took into consideration are the use of IMF credit, the current account balance, the general government final consumption expenditure and the foreign direct investments net inflows.

The five variables considered for the multiple regression analysis are highlighted in Table 3.

Years	Total external debt stocks (TED)	Use of IMF credit (IMF)	Current account balance (CAB)	General government expenditure (GGE)	Foreign direct investment net inflow (FDI)
1987	58722661	3853415	-4235000	5238095	-19000
1988	59015257	3677793	-1572000	5454545	1147000
1999	65538427	3099863	-1305000	3444366	1028000
2000	62477598	3083196	4552000	4432002	1836000
2001	65672389	2483115	-647000	6302045	2439000
2002	68605634	2313851	-5547755	6807692	4430978
2003	64681396	3519668	-8205890	31984703	2793085
2004	75094059	4211220	-10979453	33948250	3634932
2005	98773126	6130863	-5117957	34446000	5609423
2006	111145506	6292571	-6769978	34023250	6948537
2007	128251440	5868262	-12138069	35324750	9160272
2008	141504496	5442163	-14481998	37353000	7290657
2009	151913802	4914920	-11942825	38908500	23987696
2010	150062927	5470438	-8980618	39175250	10418314
2011	152649934	14376331	-3780423	38037500	2166137
2012	148320196	14772335	8766610	11956794	2148910
2013	163442689	15995776	8139930	14593558	1652010
2014	167999631	14584968	3211790	18301130	4124710
2015	130788489	9967871	5273750	24130382	5265250

Table 3. *Macroeconomic variables in Argentina, 1987-2015*

The period of 29 years comprises the economic boom years of 1987-1997, the recession years of 1998-2002 and the recovery period of 2003-2015. The model for this example is:

$$\text{TED} = \beta_0 + \beta_1 \ x \ \text{IMF} + \ \beta_2 \ x \ CAB + \beta_3 \ x \ GGE + + \beta_4 \ x \ FDI + \varepsilon \quad (1)$$

where: β_i - the parameters of the model, i = 1, 2, 3, 4

ε - the error term

In the regression model, we assumed that the error terms are independent, so uncorrelated as they are normally distributed N $(0, \sigma^2)$. Still, sometimes, in economic analysis it might happen to find the autocorrelation of the errors (Pecican, 2001, p. 94). The hypotheses tested in the Durbin-Watson analysis for serial correlation are: H_0: $\rho = 0$ and H_1: $\rho > 0$. The alternative hypothesis is $\rho > 0$ since in business and economics, time series tend to show positive correlation.

The Durbin-Watson (DW) statistic is defined as:

$$DW = \frac{\sum_{i=2}^{29}(e_i - e_{i-1})^2}{\sum_{i=1}^{29} e_i^2} \tag{2}$$

where: $e_i = y_i - \hat{y}_i$ = the residual for time period "i"

The Durbin-Watson result we obtained is 1.4619 and the decision rule is: if DW > upper, do not reject H_0; if DW < lower, reject H_0 and if lower ≤ DW ≤ upper, the test is inconclusive.

The critical upper (dU) and lower (dL) bound can be found in the Durbin-Watson table. To identify the right index from the table we need the significance level (0.05), the number of independent parameters in the model (4) and the sample size (29). The Durbin-Watson statistics for 5% significance points of dL and dU is 1.124 and 1.743. Unfortunately, our DW value of 1.462 is placed in between the lower-upper interval so that we are not able to take a final decision regarding the serial correlation of the residuals. Nevertheless, we continued our analysis considering the errors to be normally distributed.

In order to estimate the parameters of the multiple regression, we used the least-squares method that makes an estimation of the original parameters so that the sum of squares of the residuals to be as small as possible.

Basically, we used this method to fit a linear function to the data in the form:

$$\hat{y} = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 \tag{3}$$

The least-squares estimates are the values that minimize the quantity known as the square sum of residuals/errors (*SSE*).

$$SSE = \sum_{i=1}^{29}(y_i - \hat{y}_i)^2 \tag{4}$$

The observed variability of the responses is measured by the variance S^2 which is established as the ratio between *SSE* and the number of degrees of freedom (*df*) of the residual variance.

$$S^2 = \frac{1}{n-k-1}\sum_{i=1}^{29}(y_i - \hat{y}_i)^2 \tag{5}$$

where: n - number of observations: 29;
        k - number of independent variables: 4

All the computations needed to establish whether the model is well built or not are done through Microsoft Excel software. We decided to refer first to the ANOVA table results (Table 4) where we have the Fisher test (F). This validation test takes into consideration not only the variance S^2, but also the sum square and the degrees of freedom of the regression itself.

ANOVA	Square sum (SS)	Degrees of freedom (df)	Square average (MS)	Fisher test (F)	Significance F
Regression	$30.7061*10^{15}$	k = 4	$7.6765*10^{15}$	27.7427	$1.08578*10^8$
Residuals	$6.6409*10^{15}$	n-k-1 = 24	$0.2767*10^{15}$		
Total	$37.3470*10^{15}$	n-1 = 28			

Table 4. *Analysis of variance results*

The total sum of squares (SST) value from Table 4 is the sum between the square sum of the regression (SSR) and the square sum of the residuals (SSE). By dividing SSR and SSE to their degrees of freedom we have obtained a square average for the regression (MSR) and, respectively, for the residuals (MSE). Fisher test for the analysed model was obtained from the ratio between MSR and MSE and it has a value of 27.7427. In order to understand the meaning of the result, we have to analyse the two hypotheses of Fisher-test for the overall fit of the model.

The two alternatives are: H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ and H_1: not all β_i equal 0. We have chosen a significance level α of 5% (most common). We have to compare the F value we found for our model with the critical value F(α, k, n-k-1) which can be found in an F-table.

According to the theoretical value of Fisher-test from the table, we found F(0.05; 4; 24) = 2.78, a value lower than 27.7427. H_0 hypothesis is rejected, so at least one parameter is different from 0 and the model, as a whole, is well built.

The same conclusion is found also from the summary output of data analysis which gives us a *R Square* (coefficient of determination) of 0.82218. This value was obtained from the ratio between SSR and SST. The evolution of the four variables used in the multiple regression econometric analysis explains in a proportion of 82.22% the evolution of the total external debt stocks for the 1987-2015 period of time.

Even though the model seems to be a relevant one regarding the study of the response variable, the external debt, we have to analyse each independent variable to see whether it influences in a significant way the external debt. "t Statistic" analysis,

"P-value" and the "lower" and "upper" intervals offer important details with respect to the econometric model and the significance of each variable included.

The t Student statistic is highlighted in Table 5. At a 95% level of confidence, all the explanatory variables are statistical relevant. This can be noticed taking into account both the P-value which is below 0.05 for all the variables, but also from the last two columns where the interval between "low" and "up" does not contain the null value in none of the cases.

Variable	Coefficients	Standard error	t Statistic	P-value	Lower 95%	Upper 95%
Intercept	45355355.53	7669535.399	5.913703	$4.21*10^{-6}$	29526212	61184499
IMF	5.545646352	0.755884285	7.336634	$0.14*10^{-6}$	3.985578	7.105715
CAB	1.170348161	0.460667375	2.540549	0.017953	0.219577	2.121119
GGE	0.730036390	0.135811196	5.375377	$16.11*10^{-6}$	0.449736	1.010337
FDI	2.873278116	0.779270210	3.687140	0.001157	1.264943	4.481613

Table 5. *Analysis of variance results*

However, a more rigorous analysis can be applied by comparing the theoretical value of t Statistic of the variables with each t Statistic obtained in Table 5. With a 95% probability, we found that the public external debt (TED) is significantly influenced by all the variables since the t-test proves that all the results obtained are higher than the theoretical Student's t-test ($\alpha/2$, n-2) which is 2.052. For all the independent variables, the null hypothesis is rejected, so there is no multicollinearity.

The data analysis research brought this final econometric equation for the external debt evolution:

$$TED = 45355355.53 + 5.55 \times IMF + 1.17 \times CAB + 0.73 \times GGE + 2.87 \times FDI \quad (6)$$

All the coefficients are positive which implies a direct connection between the evolution of the explanatory variables and that of the response variable, the external debt. Not only the use of IMF credits, but also the deficits, the increased imports and the need to encourage the foreign direct investments played an important role in the "eternal" existence of the external debt.

5. Conclusions

If until 1970, debt in Argentina represented more than 15% of GDP, in 1980 it reached the value of 27 billion current US \$, four times more than in 1970. The main causes were the overvaluation of the exchange rate and the inefficient policies, generating an outflow of foreign capital and a significant drop in competitiveness.

The continuous growth of foreign debt until 1989 was the result of the economic fluctuations and the inability of leaders to create useful programs of economic restructuring regarding a stable exchange rate, the elimination of hyperinflation and the ability to negotiate bailout plans with the IMF and other creditors.

Starting with 1987, we applied an econometric model using a multiple regression in order to establish whether some factors that we believed to be important played an important role with respect to the dynamics of the public and private external debt.

After we defined the model and applied some relevant tests, we concluded that the examination of the evolution of a particular factor can be decisive in managing an entire crisis as that of Argentina. The use of the right macroeconomic tools during crisis, and especially before they occur, attenuates the shock and offers relaxation to the economy. Taking into account only a few macroeconomic goals in a separate way did not solve the problem or the crisis. The authorities, together with the IMF, should have renegotiated with the creditors the loans taken from foreign markets, especially the short-term debt, in terms of rescheduling and paying an affordable cost. As this plan failed, the foreign debt structure should have been reorganized and restructured at the level of each creditor, but also with respect to the total amounts owed. Certainly, these solutions would have calmed down at least the crisis of sovereign debt, which tripled in just a few years.

The relationship between Argentina and the IMF after 2003 stopped. Argentina did not want to borrow financial resources anymore from the IMF or to follow other recovery plans because of the severe failures recorded throughout the history. If by 2003, communication between the Argentine authorities and the IMF was a weak one, after this year, it was almost invisible. Argentina has decided not to cooperate with the IMF. It became independent in taking decisions and, even more, the country managed until 2006 to pay all the remaining debt to the IMF worth 9.810 billion US $.

Within the last decade, the economic recovery plans were effective and resulted in a significant reduction of debt, public or private, long-term or short-term. Finding the right solutions to support domestic production and to restore budgetary resources proved to be more efficient than imposing targets or ignoring the problem. Although in 2009 Argentina has risked a new burden of external debt through new loans from the market, at least it made sure to avoid the "burn of debt".

Although the economic and social situation in Argentina is totally different from the one existing during the recession, one of the main priorities Argentina has still to face is the need to reduce the fiscal deficit. The Government made clear its intentions to reduce the public sector salary bill and government representatives opened negotiations on wage restraints with trade union leaders. At least 21,000 public sector jobs had been lost, prompting protests by workers. In response, in 2016 opposition senators approved a law banning any job losses in the public or private sector for 180 days.

Trade unions in the country mobilized opposition to the utility cost increases, as well as rising inflation, throughout 2016 and 2017. In an attempt to stop social protests regarding these not popular decisions, the Government announced extra funding and a health care reform to provide financing for union health insurance schemes.

The value of the research is given by the rigorous analysis conducted using empirical evidence and econometric approach. It can be improved in the future by taking into account several other emergent countries and their external debt for the same period of time or a longer one. Additional explanatory variables like the surplus/deficit of the general government budget or other monetary, budgetary and fiscal indicators might be useful in the research field of the causes that bring about an excessive indebtedness. Nevertheless, future research papers might refer to the GDP growth as a response variable using the external debt as an explanatory variable together with other adequate macroeconomic indicators. The analysis might be more rigorous if a sample of countries is considered, e.g. emerging economies like the Asian countries, the Middle East countries, the EU former communist countries, the South America countries or the BRICS group of countries.

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