

# Sub-national economic policy

## Fiscal self-dependence and economic growth

### The cases of San Juan and Mendoza (Argentina)

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*Abstracts*— In this paper we will try to analyze what happened with the public finance and the behavior about it in the provinces of Mendoza and San Juan in Argentine. We try to explain if that behavior was relevant for sub-national macroeconomic indicators, giving a role to the sub-national economic policy. A key issue to have in consideration is a virtuous path of self-generated growth and development through a sub-national economic policy. Local governments should to pursue policies that would sustain an appropriate balance within their public finances. In fact, sub-national government need to avoid an overwhelming debt (even if it is in their own national or federal state) because that will require long-term of unnecessary sacrifices affecting their state function.

One of the current problems in Argentina is the large imbalance that the federal (the sum of provinces) economic structure has, as evidenced by the fact that the poorest province is contained 8 times by the richest one. Thus, the great heterogeneity in the geographical distribution of wealth and economic activity leads to important differences in terms of the tax revenues (about state taxes) across jurisdictions. These asymmetries in the fiscal capacity of sub-national governments within Argentina generates pressure on economic growth. The persistence of a structural imbalance between revenue and expenditure in provincial governments involves, mainly, a non virtuous rely on a system of intergovernmental economic assistance from the central government to provinces. Within this framework, it is clear that there is a sort of "wallet power" that determines the fiscal and economic policy of sub-national governments. This power determines how different economic capabilities can disturb productivity growth. In itself this is an evidence to the role of SSGG in order to conduct Economic Policy.

With a higher level of economic dependence, there is a lower level of economic development? For answer that question it would be necessary to assess the financial aspect of local government. Probably the inability of sub-national governments to self-generate their own resources, limits a development path. Being dependent of national resources seems to be wrong or it is non virtuous. We will speak about the Role for SSGG with this theoretical approach and then we will analyze the fiscal and financial issues of two Argentinean Provinces (Mendoza and San Juan). Those starting point are diametrically opposed. Then, we will try to empirically demonstrate the importance of fiscal and financial aspects in Sub-National governments to achieve a path of self - reliance but to their own resources. This is, perhaps, the starting point of a virtuous circle of growth.

The main objective of our work is to analyze the fiscal and financial performance of the governmental management of the provinces of San Juan and Mendoza in order to discuss an specific role for sub-national governments. First, we will make an exploratory analysis of the key variables that explain the fiscal and financial aspect. Thereafter, we will create indexes to reduce the data of each aspect and the compare year to year which was the province with the best performance on each aspect. Finally, we will consolidated every aspect in the "provincial performance synthetic index".. We want to discuss, at the end, which was the most efficient province in managing their public finances.

*Key words*— Public finances, subnational governments, regional development.

#### I. INTRODUCTION

Argentina is a federal country. 24 jurisdictions (23 provinces plus the city of Buenos Aires) constitute the Argentine Republic. (Rosales et al, 2008). According to the literature reviewed, one of the current problems facing Argentina, and that is no different to what happens in the rest of Latin America, is a great regional imbalance evidenced by the fact that the poorest province is contained 8.1 times into the richer ones (Carmona, 2006). Thus, the great heterogeneity in the territorial distribution of wealth and economic activity leads to significant differences in terms of the self tax revenues across provinces (Cetrángolo et al, 2002).

Fiscal analysis about sub-national governments will be our starting point. For example, tax asymmetries for sub-national governments are evident in Argentina and generate an additional challenge to an harmonious economic growth (Piffano, 2007). There is a persistent structural imbalance between revenue and expenditure for sub-national governments, which generates a dependence on intergovernmental fiscal transfers from the national government (Martin et al, 2004). Within this framework, it is clear that there is a sort of "wallet power" that a priori determines the fiscal policy for sub-national governments. That determinates capabilities within sub-national policies for enhance economic growth. All of these influence the

economic development level and also the structure of the sub-national democratic system (Giraudy, 2011).

Our starting point is to take two provinces with extreme richness capacity at the beginning of the period and then under fiscal and financial analysis we will try to demonstrate the relevance of those aspects for sub-national governments. We believe that a path of self-reliance to its own resources could mean the beginning of a virtuous circle of growth impacting positively in its territories.

For this reason the core problem in this work relies on a self-generation of a path of development involving fiscal and financial sustainability. In addition, is important to provide social, legal and economic infrastructure in an efficient way, (Gomez Sabaini et al, 2010). All this could impact on governmental reputation. This allows an improvement or worsening in investments attraction, as well as could allow virtuous flows of export, consumption, among others. (Diaz Bay et al, 2009).

## II. DESCENTRALIZATION AND ROLE OF SUB-NATIONAL GOVERNMENTS

As a result of the decentralization process lived in Latin America (Galilea et al, 2011) and in particular in Argentina since 1990 (Fernández, 2008), a transfer of large amount of obligations to local governments has been generated. This situation increased the financial pressure to sub-national governments because they have to provide new services. This new economic challenge generates additional pressure to financial sustainability and have impact to development on sub-national territories. Then, we could affirm that the sub-national fiscal and financial decisions imply a key factor to explain why we regard convergences or divergences in growth among different sub-national territories. Here we have a clear role for a sub-national policy maker.

The process of decentralization in Latin America began at the end of '70s and deepened during the 1990s, due mainly to two reasons (Cetrángolo et al., 2002). The first one is political and it is based on a process originated with the purpose of bringing to citizens a real possibility of an effective participation at the sub-national level. The second reason is economic and it emerges as a way to increase efficiency in the provision of services, social mainly, where local governments could has economies of scale. A greater management flexibility and a better information access achieve better forecasts about population preferences and needs, and because of that, the local government could provide better and more efficient

state services. Decentralization promoted a closer state to communities and focuses on sub-national governments as a solving instance with an special role to create opportunities for development(Ocampo, 2000).

This process had problems and limitations, above all, economic. Firstly, on several occasions, subnational government expenditure increase has not been accompanied by a similar increase in income (Martin et al, 2004). This generates deepen macroeconomic imbalances, and in some cases, has generated greater indebtedness (Argañaraz et al, 2001). In addition, there was regional imbalances problems, structural, which have been emphasized by growing decentralization obligations. Basic services such as health, education, infrastructure, and in some cases, the social welfare, have been limited (quality and quantity) according to the limited subnational financial capacity. That generates additional differences in growth and development among them(Carmona, 2006; Galvis & Meisel, 2010).

These problems are defined as vertical and horizontal fiscal imbalances (Martin et al, 2004). Vertical imbalances arise by a structural imbalance between sub-national revenues and expenditures. Local tax is relatively restricted and tend to be lower than the total cost of goods and services whose provision is on subnational hands (Asensio, 2000). Horizontal imbalance is related to the great heterogeneity in territorial distribution of wealth and economic activity, suggesting different capabilities of raising taxes at subnational level generated by the different bases of tax revenues among territories (Asensio, 2008).

Decentralization has implied greater expenses, tax administration and debt responsibilities to sub-national governments.(Coronado Quintanilla, 2009)

There is a close relationship between sub-national public finance sustainability and services provision, quality and quantity (Coronado Quintanilla, 2009). Therefore, there is a large asymmetry between obligations expected to achieve and fiscal capacities that SSGG have to deal with them. As Coronado Quintanilla says *sub-national governments in opposite to National/Federal Government, cannot fundraise through Seigniorage (minting rights)*. Neither can't increase their income through taxes (because of legal restriction). For that, sub-national governments are increasingly dependent on intergovernmental (Nation to Sub-nation) transfers.

Federal Government to Sub-national Transference Systems, wants to comply with the purpose of divergences attenuating especially in social spending (Frías, 1988).

Developing a brief historical review of the Argentine decentralization process, we can divided it into two periods (Alvarez et al 2011):

- First, during the dictatorship government (1976-1983). The nation transfers to provinces primary school, kindergarten and adult education services, along with several hospitals (previously in national management) and social services and infrastructure.
- Second, it started in the 1990s, which were transferred to sub-national hands high schools, technical education, and all hospitals. The nation is only in charge of higher education and universities. Pre-university education and teachers training are just in charge of the province. In addition to that, schooling is mandatory for 10 years (formerly 7 years). The nation assumes completely retirement system.

We summarize in Table N° 1 the distribution between roles and responsibilities among different government levels:

**Table 1: Functions and responsibilities by Government level**

Government level	Functions and responsibilities
Federal/National	National Defense, Foreign Affairs, Foreign trade regulation, telecommunications and public services, higher education (although there are some provincial universities), Federal courts, national routes, health coordination and regulation, social security and coordination of primary education policies.
National and provinces together	Regional infrastructure and economic development, social protection.
Provinces	Primary schools, high school and non-University schools. Teacher training, provincial routes, provincial justice and social welfare.
Provinces and Local Governments together	Health and Civil Defense
Local Governments	Urban services, urban infrastructure, local social welfare, among others

Source: Álvarez, Claudia, et al., “El Acceso al Crédito de los Gobiernos subnacionales” - Jornadas internacionales de Finanzas Publicas – UNC – 2010. (Alvarez et al., 2011)

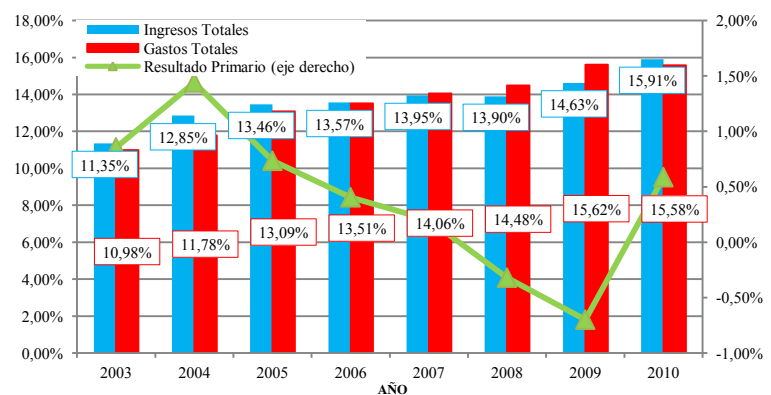
In this context, good (efficient) decisions in fiscal and financial policy could produce an improvement in sub-

national services. Particularly in disadvantaged governments compared to larger ones. Greater sub-national financial capabilities would reduce dependence on central government transfers. For that we highlighted the importance fiscal and financial indicators and their evolution. We try to analyze these indicators for two argentine provinces (Mendoza and San Juan). We will try to observe the evolution in economic issues and their performance for fiscal aspect and sustainability. If there was a correct performance that region is within a positive signaling framework, working with "virtuous processes" as we mentioned at the beginning (Diaz Bay et al, 2009).

### III. EVOLUTION OF THE PROVINCIAL TAX RULES AND ECONOMIC STRUCTURE IN ARGENTINA SINCE 2003

To assess the fiscal situation we cannot forget the expenditure evolution faced by provinces. For this purpose, in the chart N° 1 we analyzed total income and total expenditure against the current GDP. The chart N ° 1 shows us the growth of expenditures and provincial income for the analyzed period. In most of the period, total income is above total provincial spending. However, the gap is closing throughout the period. Finally in 2010 expenses are above income. It is important to observe how was changing the primary outcome, since 2004 into a downtrend, still the same negative for 2007-2009. Comparing the percentage increase of expenditures and income for the period, the first ends 42% while grew as the second 40%. The situation is clearly deficient due to a sub-national public sector growth.

**Chart N ° 1: Evolution of expenditure and income for 24 argentine provinces in terms of the current GDP. 2003-2010. (%) Blue columns: Total Revenues - Red columns: Total Expenditures - Green line: budget result.**

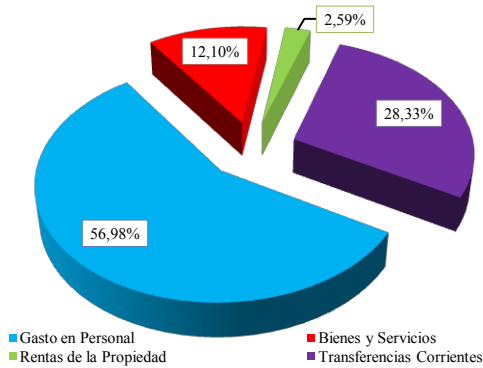


Own calculations based on DNCFP.

Entering into the provincial total expenditure, it is composed by a 84 per cent of current expenditure and, within them, the main category is staff salaries. This implies that wage increases determined by the national

authorities directly impact on provincial finances. (Chart N° 2)

**Chart N° 2: Composition of the current provincial expenditure in 24 provinces according to main categories 2003-2010**

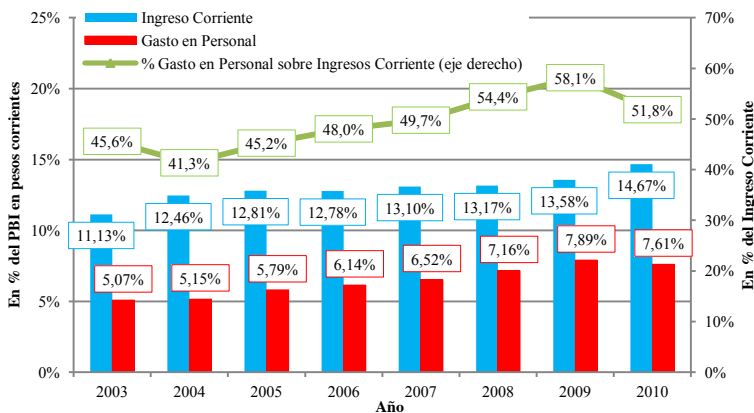


Legend: *Bienes y servicios* = goods and services  
*Gastos en personal* = Human resources expenditure  
*Transferencias corrientes* = current transfers  
*Rentas de la propiedad* = tax on patrimony

In this regard, it is relevant to observe how provincial expenditures evolution on salary was. Chart N° 3 shows clearly an expense increases between extremes, a 50% increase, while the current income to face them just grew by 31.78%.

Throughout the period have steadily increased staff salaries into the current income, which means that Government increasingly spent more in their structure.

**.Chart N° 3: Expenditure evolution on salaries and current resources for the 24 provinces in terms of current GDP (in %) 2003-2011**



Legend: *Ingreso Corriente*= current income  
*Gastos en personal*= Human resources expenditure  
*% gasto en personal*=Ratio (HHRR Expenditure over current income)

It is important to introduce here a fiscal tool used for coping with vertical and horizontal disparities in Argentina. It is called “*coparticipación*”.

The “*coparticipación*” It is a resources transfer system for tax collected by the nation shared with provinces (Table N° 2). The system was established by National Law N° 23.548 (1988) (Gacio, 2003).

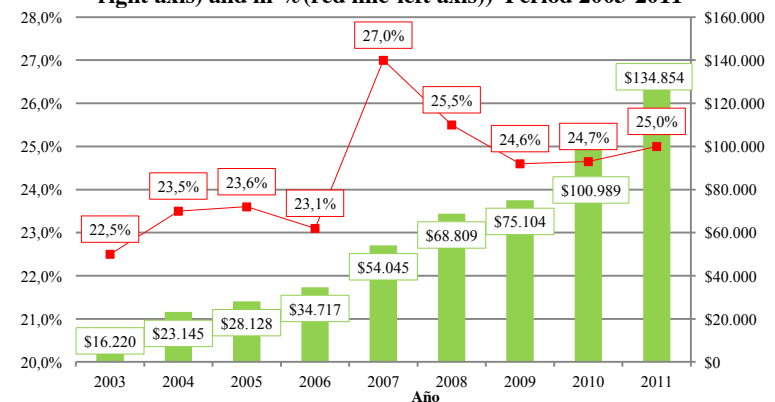
This rule, enables to each provincial government collect their tax, delegating to National Government some taxes (VAT, Profit, International Trade) and with a distribution criteria proceeds to share with all provinces. This system attempts to mitigate great heterogeneity into provincial fiscal capacities to raise own resources for provinces. It also tries to reduce asymmetries in expenditure distribution and tax powers between the different levels of Government.

**Table N° 2. Taxes within “coparticipación” total and partially<sup>1</sup>**

“Coparticipación” Taxes	
Complete	Partially
Revenue taxes, Real estate taxes, minimum presumed income taxes, games and sports competitions earnings taxes.	Taxes on liquid fuels and natural gas, electric power taxes, bank debits and credits taxes, and international trade taxes.

It is evident that, comparing the percentage shares, Formosa province receives 6.9 times more revenue (in relative terms) than their own GDP contribution into national ones. The province of Buenos Aires, in an opposite case, uniquely receives a 21.20% of the taxes in “coparticipación”. Buenos Aires uniquely received 0.6% of their own contribution, because the province constitutes 35% of National GDP.

**Chart No. 4: Evolution of coparticipación resources in terms of total revenues for the national government. (In millions ARS (green column-right axis) and in % (red line-left axis)) Period 2003-2011**



Own calculations based on CIFRA and MECON

<sup>1</sup> Fuente: “El sistema de Coparticipación Federal de Impuestos en la Actualidad” Documento de Trabajo N°5 – CIFRA – Centro de Investigación y Formación de la República Argentina, Junio 2010.

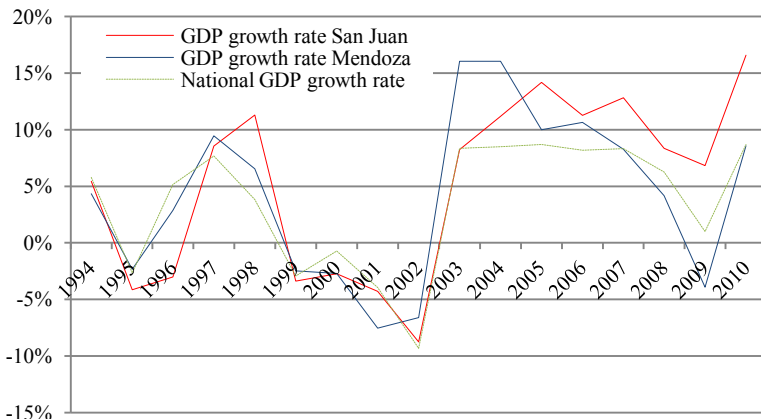
IV. EVOLUTION OF THE TAX AND ECONOMIC STRUCTURE OF SAN JUAN AND MENDOZA SINCE 2003

In the chart N°5 we observed provincial GDP growth rates since 1993. We can notice that the GDP evolution during the '90s was closer. Between 1996 and 1998, there was some divergence in terms of rates magnitude, but the 2001 crisis impacted in the same way for both as well for the federal state.

After the 2001 crisis, there is an immediate reactivation of Mendoza province. This province is growing 16 percent in 2003 in comparison to previous year, while San Juan and the Federal State do it slowly. However, from 2005 San Juan growth exceeds 42% to Mendoza in 2005 compared to 2004. Since 2005, San Juan remains with a higher growth rate even during 2009 recession. In the 2009 crisis Federal State and Mendoza had a negative growth, while the San Juan GDP rose 6.8%.

San Juan since 2003 constantly increases its share in the Argentine GDP. Begins with a 1% share in 2003 and ends 2010 with a participation of 1.34%, an increase of 34% in just 7 years.

Chart N° 5: Growth rates: Mendoza, San Juan and National GDP in constant 1993 prices (1993 – 2010)



Own calculations based on DNCFP

V. STRUCTURAL COMPONENTS: A COMPARATIVE EVIDENCE

We are going to divide analysis into following five main components:

- Governmental Size
- Public spending financing
- Direct Public Investment
- Labour Market
- Debt

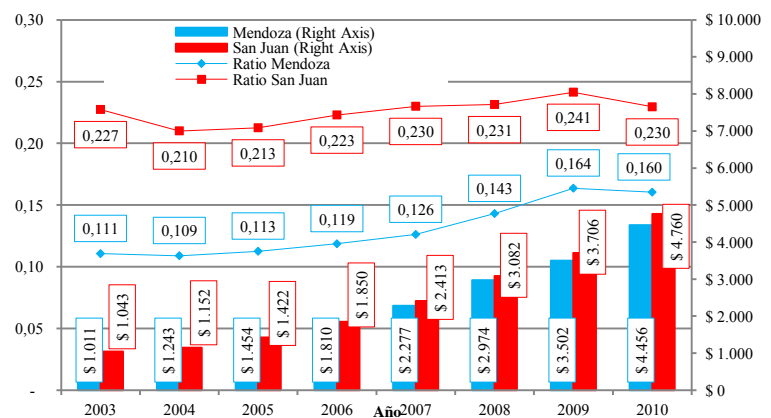
A. Governmental size

It explains Sub-national Government participation within Provincial GDO. It is composed for a variable:

- Current expenses / Provincial GDP

When fiscal spending exceeds sustainable limits the State generates a displacement of private activity a “crowding out effect”. An increase of this ratio reflects a disadvantage to foster an economic environment. That will affects negatively private investment and to provincial development due to an excessive government.

Chart N° 6: Current expenses / Provincial GDP 2003-2010



Own calculations based on INDEC and MECON

Chart N° 6 analysis: both provinces have a constant increase on their "current expenditures share" within Provincial GDP. However, San Juan Province has a slower path. The opposite case is Mendoza that even with a changed trend in 2010, during complete period, its ratio grew by 45%, from 0.11 in 2003 to 0.16 in 2010.

The chart shows us that San Juan presents a greater ratio (about 1.43 in 2010). However, this ratio decreased during the period by 30%, primarily by the poor performance of Mendoza and the good growth of the GDP of San Juan.

B. Public spending financing

It is composed by three indicators:

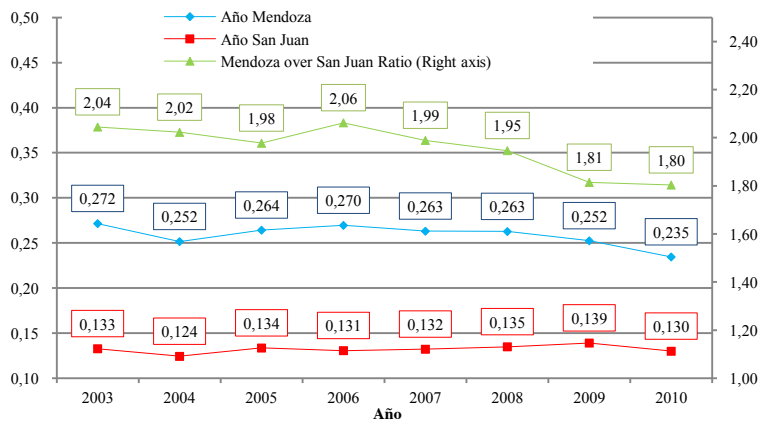
- Own Tax Revenue / Total current revenue
- Own Tax Revenue / Provincial GDP
- Total current expenditure / Total current revenue

The chart N° 7 shows that both provinces are financially dependent on federal government. Both maintain a low level of own resources with respect to its expenditures,

whose average is by 26% for Mendoza and by 13% for San Juan.

However, there is evidence that Mendoza has lost lending capacity (its ratio declines by 13.6%), while San Juan keeps it constant.

**Chart N° 7: Own current revenues over total current revenues - Financing of public expenditure 2003-2010**



Own calculations based on DNCFP

*C. Direct public investment*

The third component is the sub-national government participation as a direct investor for its economy. A higher ratio means better (higher) investment.

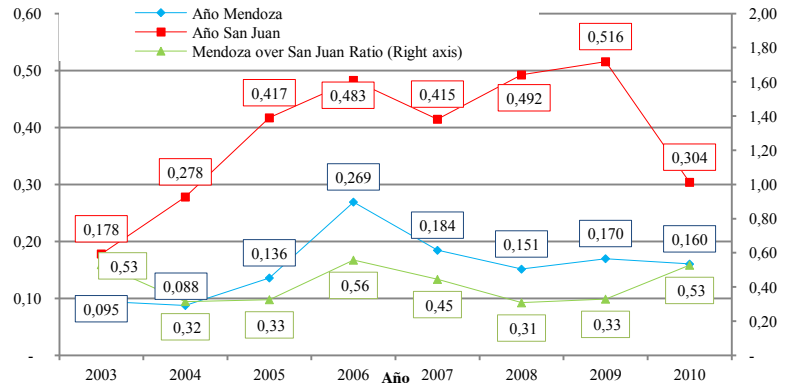
There are three indicators that make up this component:

1. Direct State investment over total income
2. Direct State investment over total expenditure
3. Direct State investment over regional GDP

The three variables are seeking to measure the magnitude of the sub-national government investment.

In the chart N° 8 between 2003 and 2010 San Juan province allocates by 38% of their income to investment, while during the same period, Mendoza allocates by 15.67%.

**Chart N° 8: Sub-national direct state investment over total own income 2003-2010**

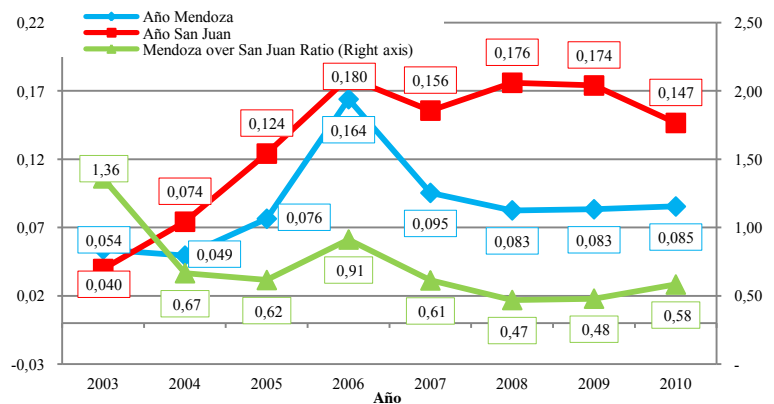


Own calculations based on DNCFP

Our second variable discusses how provincial investments are participating within total expenditures. We want to see if provincial policies are long-run oriented or short-run ones.

In Chart N° 9 San Juan has better performance during period, with a proportion of expenditures with respect to the total by 13.37%. In respect to complete analyzing period, we see an increase by 270% in 2010 in respect to 2003.

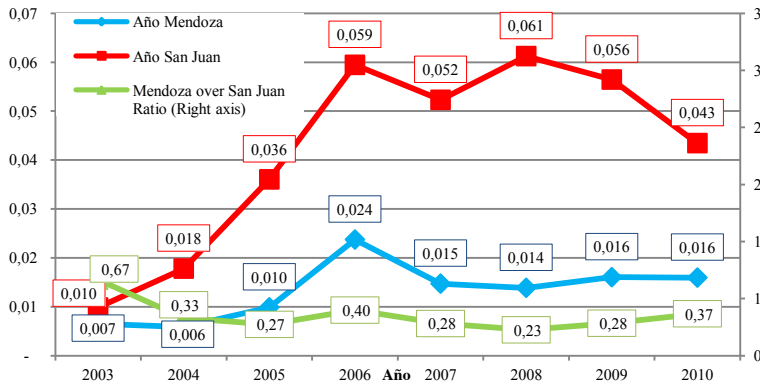
**Chart N° 9: Direct State investment over total expenditure (2003-2010)**



Own calculations based on DNCFP

The third and final variable for this analysis seeks to describe the weight which has provincial state direct investment to Provincial GDP. San Juan has a better performance again. We can see it in the chart No. 9a.

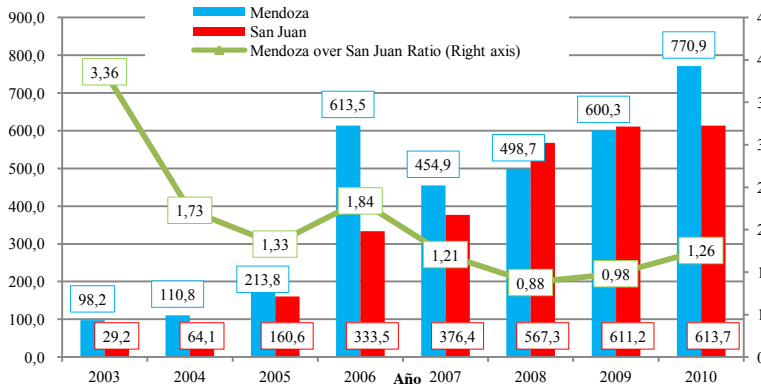
**Chart no. 9a: Provincial Direct State investment over Provincial GDP (2003-2010)**



Own calculations based on DNCFP

It is clear that San Juan has developed an investment growing policy for 2003-2010, Mendoza clearly not. We analyze the absolute values of investment in both provinces (Chart N ° 10). In 2003 Mendoza was San Juan x3 in Direct State investment expenses but in 2010 this relationship declines by 62%.

**Chart N ° 10: Direct State investment – in million current ARS (2003-2010)**



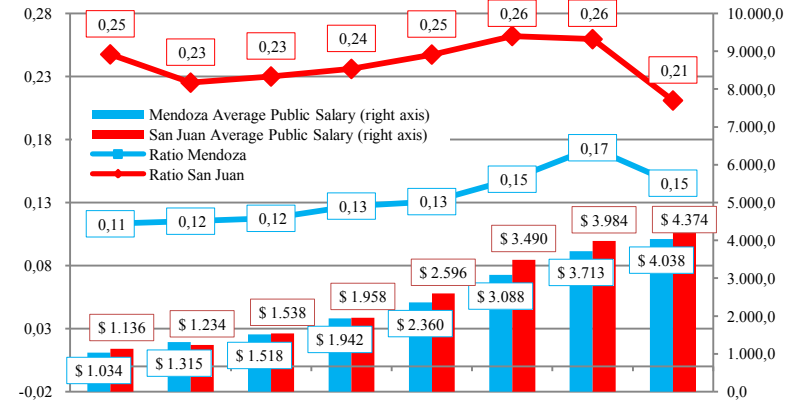
Own calculations based on DNCFP

**D. Labour market**

The fourth component is the % of public employees and their respective salaries. We try to analyze how public employee’s salaries participate in provincial economic structure. There are just two variables to be analyzed in this case:

- Average Salary of public sector over GDP per capita of province
- Public employees over total population of province

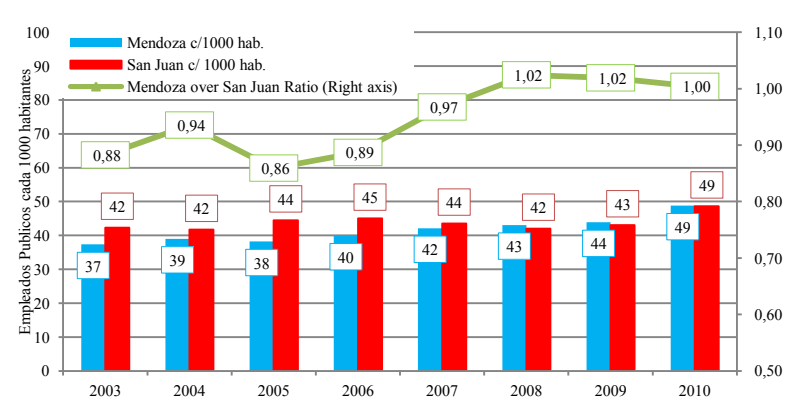
**Chart N ° 11: public sector average salary / Provincial GDP per capita (2003-2010)**



Own calculations based on DNCFP

In chart N ° 11 we note that the Government of San Juan is characterized by having more number of employees per 1000 inhabitants in relation to Mendoza. In 2003, San Juan exceeds by 13% to Mendoza in public employees ratio, although the gap is narrowing for 2010. In that year, both provinces have 49 employees per 1000 inhabitants.

**Chart N ° 12: Public employees over inhabitants (2003-2010)**



Own calculations based on DNCFP

To conclude, this component describes similar behavior for both provinces, although, towards the end of the period analyzed, show to us San Juan better performance.

**E. Debt**

The last component of our research will evaluate the debt level of the province in relation with others economic variables of the sub-national government. This component has a particularly importance because the debt level will be showing all the financial management inefficiency of the government’s administration related to the budget balance. A continuous budget deficit would increase the debt levels and then that would impact in the financial performance of the sub-national government because more budget will have to be for debt services. (Alvarez et al., 2011;

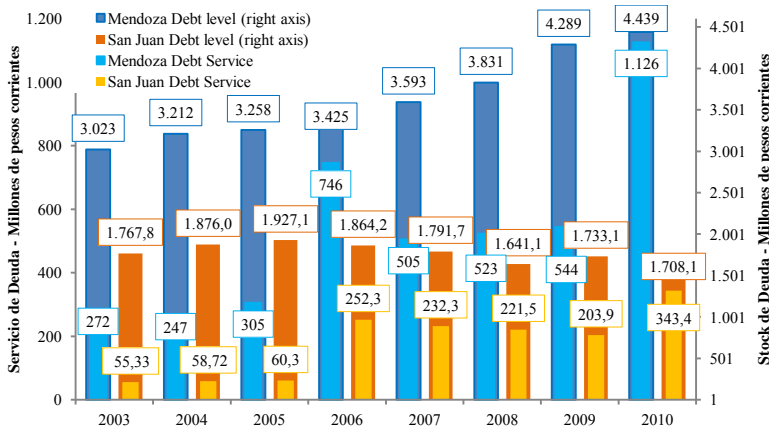
González et al., 2011). This situation could cause difficulties on the services provision provided by the local government due to the lack of monetary resources. (Coronado Quintanilla, 2009).

There are four indicators that make up this component:

- Liquidity: debt service over total own income.
- Sustainability: debt service over net current financial balance.
- Leverage: total long term debt over provincial gross product.
- Solvency: total long term debt over total own income.

Before to proceed with the variables analyze, we want to show the overall debt situation of the provinces in this work. The chart N° 13 is showing the level of debt and the service of debt from 2003 to 2010.

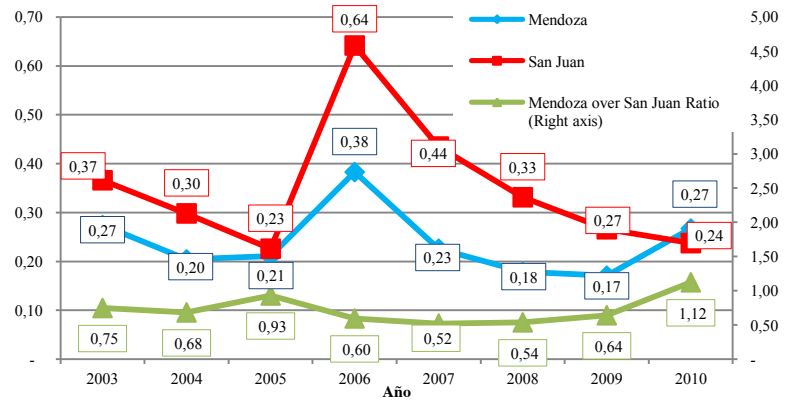
Chart N° 13: Debt level and debt service - In million Ars - Period 2003-2010



Own calculations based on DNCFP

During all years, Mendoza raised their debt level systematically. In 2003 the amount of outstanding debt was \$3.022, and at the end of the period is about \$ 4.438 million (a total increased of 46.84%). Contrary, San Juan decreased their debt level by 3.38% during the whole period. In this situation, it is clear that the debt service pressure of Mendoza is higher than San Juan, in absolute terms. Although, if we take the relation between debt service and debt level, we find that the ratio in Mendoza was 9% while for San Juan was 3% at 2003. At the end of the period, Mendoza shows a ratio of 25% and San Juan 20%. This means that the relation in debt service over debt level went worse for San Juan than for Mendoza in relative terms.

Chart N° 14: Liquidity: debt service over total own income - Period 2003-2010

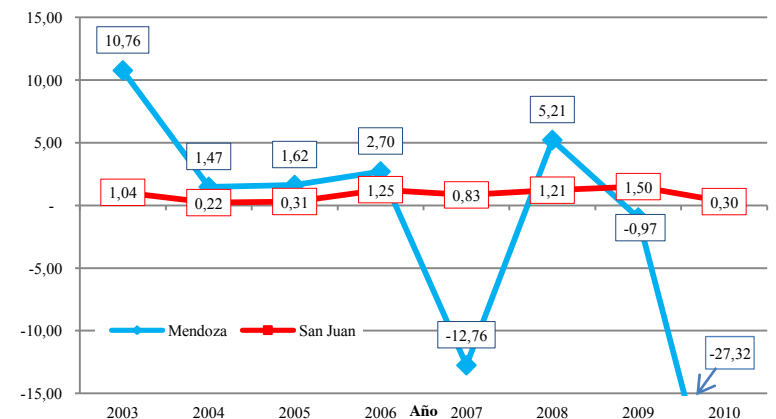


Own calculations based on DNCFP

The chart N° 14 is showing the relation between the debt service over total own income. During the period, the provinces were reducing this relation, except in 2006 due to some important debt amortizations. In overall terms, in this variable, San Juan is better than Mendoza.

When we analyze the financial capacity of provinces to meet their debt obligations, we find that San Juan shows more stability than Mendoza over the period. This variable is evaluation about sustainability of the current debt obligation with the residual financial result of each year. In the chart N° 15 we can see than San Juan is showing a continuous balance and ended the period facing very well the debt service pressure. Contrary, Mendoza is more unstable and shows negative values in some year (this is that the net current financial result was negative in those years).

Chart N° 15: Sustainability - debt service over net current financial balance - Period 2003-2010



Own calculations based on DNCFP

Our third variable is measuring the financial leverage of the provinces. It analyzes the relation between the debt

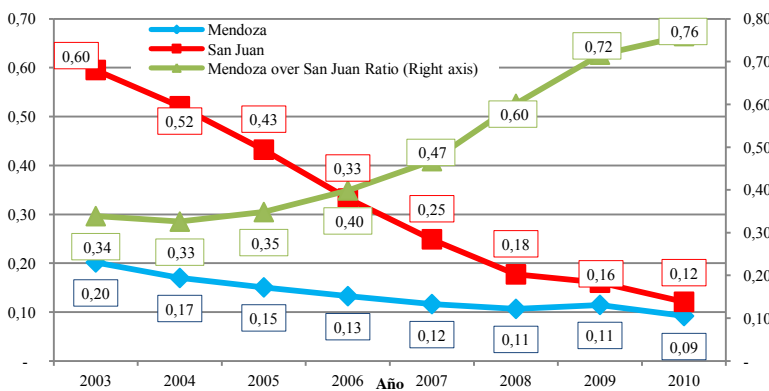


levels over the provincial gross product. We can interpret this variable as how many years would take to the government to pay the debt if they use all the production of the economy to pay it.

When the province surpass a certain limits of leverage, the debt level is becoming dangerous for the provincial financial stability (Velázquez, 2010). As long as the leverage is increasing, it is becoming harder to pay that debt and then, more fiscal resource has to be used to cover the debt.

In the chart N° 16 we see that both provinces were able to reduce their financial leverage. The main reason of this is the high growth rate of the provincial gross product. On one hand, San Juan was able to reduce by 80% their leverage, and on the other hand, Mendoza reduced it by 54% during the whole period.

**Chart N° 16: Leverage - total long term debt over provincial gross product Period 2003-2010**



Own calculations based on DNCFP

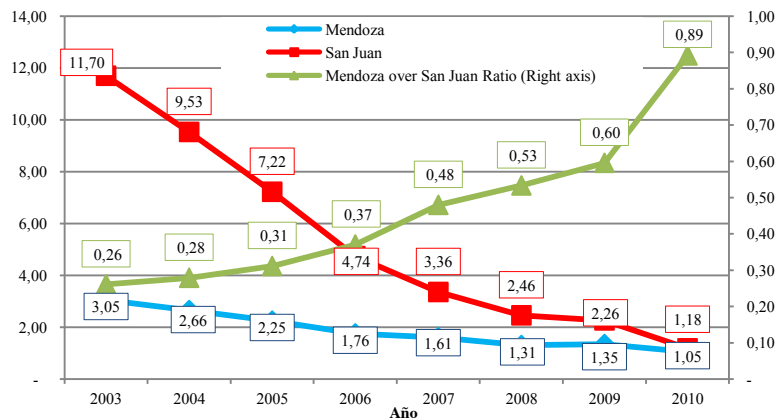
The last variable is solvency. We can see how many years (theoretically) would take to province to eliminate the debt if the government use all total own income to pay the debt. (Coronado Quintanilla, 2009).

The chart N° 17 is showing that both provinces reduced this variable constantly during the whole period. The main reason is that the fiscal capacity increased due to the economic growth of their territories.

In 2003, San Juan needed (theoretically) at least twelve years to pay all debt with uniquely own resources. Buy at the end of the period, they need only 1,18 years to be free from debt (90% of times reduction). Mendoza was very efficient too, but they started the period with more advantage. In 2003 they needed only three years to pay the debt. Finally, in 2010, they needed only 1 year (33% of

time reduction). Consequently, it is evident that the financial behaviour of San Juan in this aspect was better than Mendoza. San Juan and Mendoza need almost the same years to pay their own debts in 2010.

**Chart N° 17: Solvency – total long term debt over total own income- Period 2003-2010**



Own calculations based on DNCFP

*F. Conclusions of the structural components*

To conclude this section we want to highlight that the province of San Juan showed better results than Mendoza in almost every aspect that we analyzed. Therefore, San Juan conducted their finances in a more efficient way than Mendoza. San Juan does not show any budget deficit during the whole period, keeping rather well their debt level. Contrary, Mendoza increased their debts and they showed budget imbalances during the period, showing instability in several analyzed variables.

**VI. PROVINCIAL PERFORMANCE INDEX (PPI)**

In order to consolidate all five aspect evaluated in the previous section, we will took the idea from the Provincial Performance Index. This index was created by Fraser Institute in Canada and it is used in Argentina by "Red Libertad". This association analyzes the level of economic freedom of the inhabitants of the provinces and then they compare the 24 jurisdictions. (Bongiovanni et al, 2013; Perazzo, 2007).

For our research, we will homogenize each variable through mix-max technique and then we will create an index of each component. Finally, we will weight each indexed components following our own criteria to highlight the relevant behaviour that we want to measure and then create a synthetically index. The weights are as follow:

Component	Weight
• Governmental Size	0,10
• Public spending financing	0,30

- Direct Public Investment 0,20
- Labour Market 0,10
- Debt 0,30

As the reader can appreciate, we give more weight to the Investment and Debt components. We consider that the investment aspect is a very relevant factor because it improves the provincial infrastructure (like roads, hospitals, schools, etc.). The financial debt behaviour is important due to all budget inefficiencies would be reflected in the debt level, as we mentioned before.

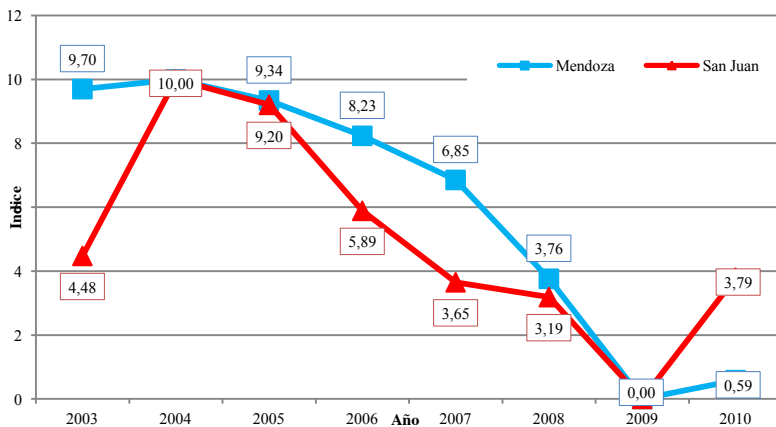
Since our main aim is to evaluate the financial performance of the provincial government, we set a lower weight factor to the other components. We consider that the problems of those factors would be reflected by the two main component of the analysis.

*A. Governmental size index*

In the chart N° 18 governmental size index shows a reduction of the values due to a bad performance in this aspect of both provinces. They were increasing the current expenditures over the growing rate of their provincial gross products. A low index value shows that there is an kind of excess of participation of the government in the provincial economy<sup>2</sup>.

An increasing relation between public current expenditure over provincial gross product could eventually create a budget deficit. This is because public expenditure are less flexible than tax revenues, and then if a crisis hits the province, it is highly probable that the public income reduces more that the public expenditure.

**Chart N° 18: Governmental Size index in PPI - Period 2003-2010**



Own calculations.

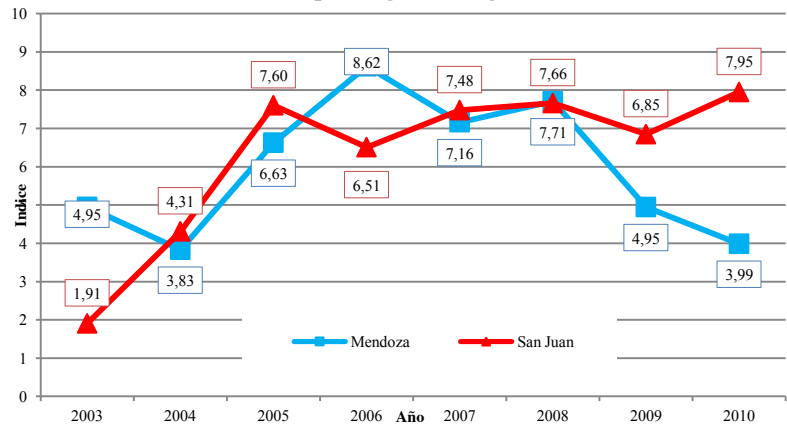
*B. Public spending financing Index*

The index for the second component shows us a more heterogeneous situation since 2003 and until 2008. Performance is similar to both provinces. However, from 2009 arises a performance divergence because Mendoza begins a continuous decline to reach in 2010 a 3.99 score, the second worse for the period, while San Juan improves, closing the period with the best index: 7.95 points.

Mendoza has shown a continuous loss of resources independence and 2010 was its worst year in comparison to the rest of the period.

In Chart N° 19 is clearly analyzed the gap between San Juan and Mendoza. This component will enlarge, starting the period with a divergence of 2.60 times on San Juan Mendoza and ending the period at 0.5, (81% gap reduction).

**Chart N° 19: Public spending financing Index (2003-2010)**



Own calculations.

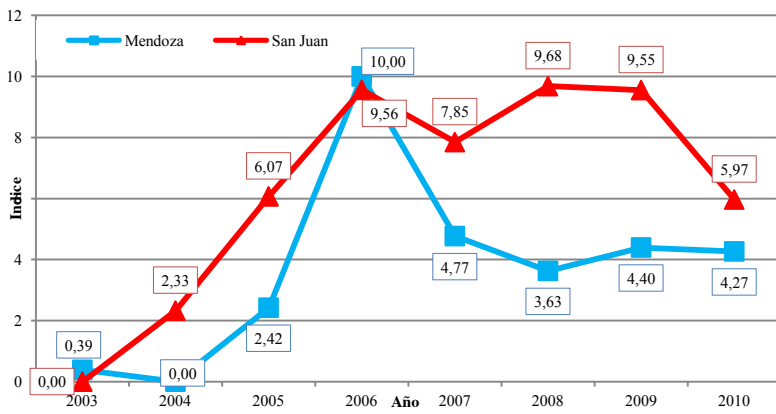
*C. Direct public investment index*

The behavior of this component is increased for both provinces until 2006, the year that reach both his highest score in the period, to then refuse his performance.

San Juan and Mendoza begin with a very small gap, but at the end show a greater gap, still San Juan above Mendoza a 40%. San Juan behavior was less efficient.

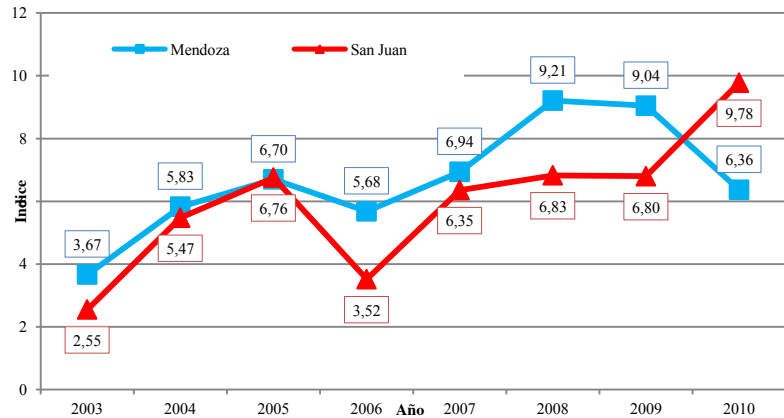
<sup>2</sup> Que como mencionamos puede restringir la libertad de los agentes económicos en la provincia, pero no es el objetivo de nuestro trabajo medir aquella restricción.

**Chart N° 20: Direct public investment index - Period 2003-2010**



Own calculations.

**Chart N° 21: Debt index - Period 2003-2010**



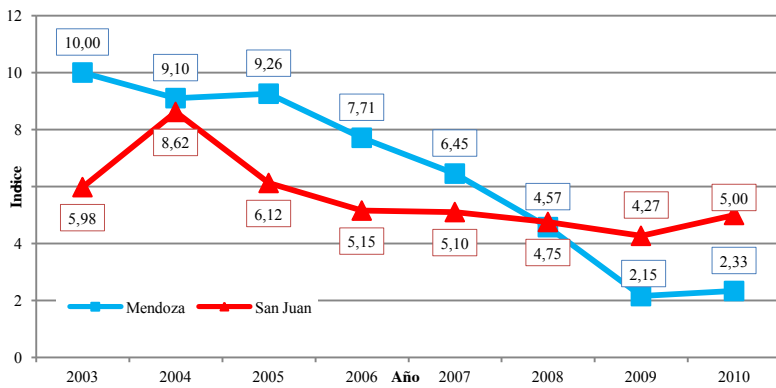
Own calculations.

*D. Labour market index*

The province of Mendoza presents chronic efficiency loss in labor, due to public employees grew by 30.6% between 2003 and 2010. This is reflected in a continuous fall in the index of performance, which begins in 2003 with the best rating in the period, to finish with a 77% drop.

San Juan began the period with a performance low, nearly 6 points, and closed the period with 5 representing a fall by 16%.

**Chart N° 21: Market Labor - Period 2003-2010**



Own calculations..

*E. Debt index*

our last indexed component is measuring the financial performance of the provinces related to the debt level. Both provinces showed a good behaviour in these aspects and similar patterns. Nevertheless, during all the period, Mendoza shows better values than San Juan, being the performance gap between them of 44% at the beginning of the period. In spite of this, at the end of the period, this gap inverted in favour to San Juan (the gap in 2010 is 54% in detriment of Mendoza)

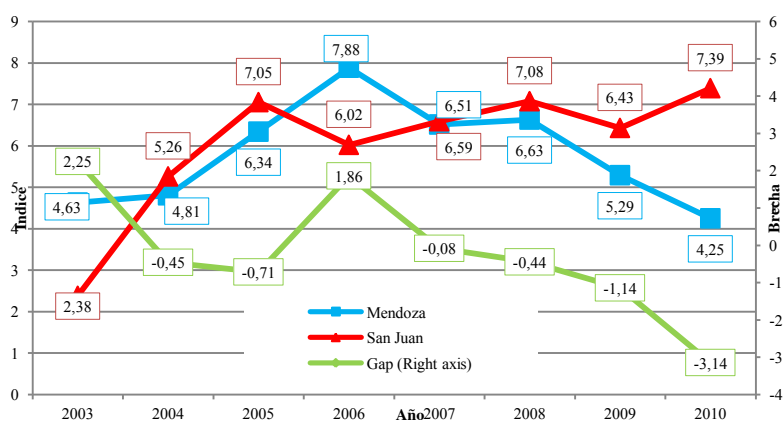
In exception of 2006, both provinces did well in this component. Even Mendoza with a absolute raise in debt level improved their variables except in 2010 because of its bad financial results fundamentally.

VII. PROVINCIAL PERFORMANCE SYNTHETIC INDEX

After our analysis of each structural component and the application of a performance index for each of them, we are able to consolidate them according to the weighting described at the beginning of this section.

As we can see in the Chart N° 22, there was a growing overall performance for both provinces until 2006, year in which San Juan exhibits a decline. Both of that show stagnate and it is from 2008 where we read paths divergence, due to Mendoza begins a decline of overall performance, while San Juan otherwise.

**Chart N° 22: Provincial Performance Synthetic Index - Period 2003-2010**



Budgetary and financial efficiency of San Juan was (during 2003-2010) better than Mendoza ones. However, the index shows that it was not as wide as we have been expected if only we observed components separately, which in many cases showed a very lean performance for

Mendoza and very good for San Juan, especially if we analyze it from the point of view of the trend. Index it has proved useful to concentrate fundamental aspects of public finances about sub-national governments and allowed us to make a comparative evaluation in order to observe the both governments behavior

### VIII. CONCLUSIONS

We propose a methodology that assessed the financial behavior of San Juan and Mendoza focusing on five structural components; the size of the public sector, financing of public expenditure, Direct State investment, labor market and debt.

This data analysis method allowed us to establish levels of comparison to see what year, during the period, they had behaved better or worse.

Finally, we created a similar a tool used by "Red Libertad" called "Provincial Fiscal Behavior Index" for an evaluation that expresses the valuation of overall performance every year, giving the opportunity to compare vis à vis each province in each analyzed aspect (Bongiovanni et al., 2013).

San Juan evince a greater response to a role for sub-national entities, as well, would be granted the possibility of introducing itself in an self-generate economic growth process (Diaz Bay et al., 2009).

This allows us to have certainties to affirmatively answer two questions posed at the beginning of this research. First, a role can be assigned to sub-national Governments for economic policies generation. **Economic growth in San Juan was feedback by a coherent fiscal policy.** Let's go back to the question: would a higher level of economic dependence tend to a lower level of economic development? Obviously, an increase in economic freedom would enable it to design long-term goals that depend just in self revenues and this can encourage growth for its territory, without being subject to the guidelines of the National Government. This enables an interesting way to think and re think sub-national Governments from its self fiscal capacity towards the self development of efficient economic policies.

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