

# STRUCTURAL CHANGE AND LONG-TERM PATTERNS. A METHODOLOGICAL PROPOSAL FOR URUGUAY IN THE VERY LONG RUN

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**Ago-2013**

## ABSTRACT

Recently, the increasing interest in economic diversification, the technological sophistication of production and the productive specialization place again the structural change in the centre of the analytical and empirical scene in the economic development theory. However, the efforts to measure structural change from a long-run perspective are scarce. Therefore, we aim to fill this gap using a multidimensional and synthetic indicator that represents the dynamics of structural change in the long-run and allow us to identify different development patterns. We calculate this indicator of structural change in Uruguay based on trigonometric notions which combine the movements of seven productive branches in the period 1870-2011. Our results describe adequately the different development patterns that, according to the literature, characterized the Uruguayan economic history. In addition, the evolution of our indicator provides other interesting insights. The downturn of the index –which indicate “backward movements” in the productive structure– maybe identified with periods of economic crisis. This behaviour defines a dynamics where unstable moments maybe associated with the (relative) primarization of the economy. In other words, it seems evident that “around” each episode of crisis, the economy reacted going back to the primary production probably looking for traditional comparative advantages or because in such negative phases, the weakest and most exposed sectors were those different than agriculture

IV Jornadas Académicas-XV Jornadas de Coyuntura  
Facultad de Ciencias Económicas y de Administración  
27, 28 y 29 de agosto de 2013

**Keywords:** structural change, long-run economic patterns, Uruguay  
**JEL Classification Number:** N16, O11, O47.

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## Introduction

The growth performance of Latin American countries have for a long time been of primary interest for economists, policy makers and economic historians. Especially during the 1950s and 1960s, the discussion was intensified on issues concerning economic development and the driving forces behind the deficient growth performance of the region. In this long-term approach, the core of the discussion was often related to the better type of structural change to promote economic growth and long run sustainable expansion. Structural change –and more specifically industrialization– was seen as the driving force for growth and a precondition for sustained growth, as changes in technology and market conditions demand structural changes to ensure a more efficient resource allocation. However, the debate lose attention in the 1970s and 1980s making way for ideas and economic policies focussed on another of the more severe problems of the region: high and persistent inflationary levels. The initial predominance of monetary conceptions<sup>1</sup> was followed, in the 1990s, by the increasing relevance of liberal policies in such areas as macroeconomic stabilization, economic opening with respect to both trade and investment, and the expansion of market forces within the domestic economy.<sup>2</sup> In other words, scholars and policy makers in, at least, the last 20 years of the 20<sup>th</sup> century paid scarce attention to discuss the long-run economic performance and, in consequence, structural change had a secondary role in the theoretical and empirical literature of the period. However and probably associated with the deep financial and economic crisis that dominated the region by the end of the 1990s and the beginning of the 21<sup>st</sup> century, the questions about growth, specialization and development placed again structural change in the core of the debate.

In the case of Uruguay, this debate is expressed in a group of studies that place economic diversification, productive sophistication and science, innovation and technological as the main factors in the explanation of the bad economic long run performance of the country. This new literature about the economic development of Uruguay is the main motivation of our paper. In general, all studies discuss and argue about the nature and the conditions required to promote structural changes for economic growth sustainability. However, most of them pretend to identify “the best” sector to promote without paying enough attention to structural

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<sup>1</sup> This theoretic line was identified with the Monetary Approach to Balance of Payments although the clearest application as economic policy corresponded to the Southern Cone. The rest of the region, and depending on the periods, practised mixed policies.

<sup>2</sup> This framework was identified with the so-called “Washington Consensus”, a concept coined in 1989 by the economist John Williamson to describe a set of ten relatively specific economic policy recommendations that he considered the "standard" reform package promoted for crisis-wracked developing countries in institutions as the International Monetary Fund (IMF), World Bank, and the US Treasury Department.

change as an accumulative, sometimes lock-in, and long-run process. The aim of this paper is to examine the long-term pattern of growth and structural change, using methods that previously have not been applied in a systematic in the Uruguayan economic historical research.

Structural change is a complex process where diverse forces interact and where transformations can take different –and sometimes contradictory– directions. Our intention is to construct a synthetic indicator which summarizes in a unique index the evolution of the varied dimensions that integrate these specific transformations in the productive structure of the economy. Following the application of Vikström (2001) and introducing some modifications in his initial proposal, we offer a long-run indicator of the structural change in Uruguay based on trigonometric notions to combine the movements of seven productive branches from 1870 to 2011.

Our results describe adequately the different development patterns that, according to local literature, characterized the Uruguayan economic history. In addition, the evolution of our indicator provides other interesting insights. The downturn of the index –which indicate “backward movements” in the productive structure– maybe identified with periods of economic crisis. This behaviour defines a dynamics where unstable moments maybe associated with the (relative) primarization of the economy. In other words, it seems evident that “around” each episode of crisis, the economy reacted going back to the primary production probably looking for traditional comparative advantages or because in such a negative phases, the weakest and most exposed sectors were those different than agriculture.

After this introduction, the paper is organized as follows. In section 1, we present a brief literature review about of structural change, our theoretical framework and the empirical approach. In section 2, we present our indicator –the initial version and our modified version– and the data (annual sectoral value-added for seven industrial branches) and, in section 3, we describe the evolution of structural change from an historical overview to validate our results. In section 4, we propose our final remarks and the agenda.

## **1. Structural change: literature review and theoretical framework**

### *1.1 Background*

Kuznets (1973) summarize the discussion between economic growth and structural change in the following statement “rapid changes in production structure are inevitable –given the

differential impact of technological innovations on the several production sectors, the differing income elasticity of domestic demand for various consumer goods, and the changing comparative advantage in foreign trade" (Kuznets, 1973: 250). Three main causes of structural change are presented in this quote and they have been essential components of the debate about structural change since the 18<sup>th</sup> century: the different sectoral impact of technological progress, the differing demand income elasticity and the comparative advantage in foreign trade.

In this section, we present a brief review of some of the main contributions of the literature on structural change since the second half of the 20<sup>th</sup> century, when structure and structural change became concepts of main interest among the economic theory. However, it is important to emphasize that the fundamentals of the analysis may be found in the classic economists of the 18<sup>th</sup> century, such as Smith (1776), later in the works of Ricardo (1817) and Marx (1885), and in the beginning of the 20<sup>th</sup> century in the transcendental contributions of Schumpeter (1928, 1939).

In the mid-20<sup>th</sup> century, between the 1940s and the 1960s, the so-called pioneers of the Economic Development made special emphasis on industry as the main strategy to promote economic growth of the developing regions. Authors such as Nurske (1953, 1962), Lewis (1954), Myrdal (1957), Hirschman (1958), Rostow (1960), Rosenstein-Rodan (1961) and Gerschenkron (1962) constituted an analytical approach, where structural change is a main topic. Meanwhile, in Latin America, the characteristics of the productive structure was an important issue for the ECLAC (Economic Commission for Latin America and the Caribbean) studies, especially concerned with some specificities of the developing regions such as the "structural heterogeneity", the central role of industrialization in economic growth and changes in the international economic. This tradition was exposed by authors like Prebisch (1951), Furtado (1969), Cardoso & Faletto (1971) and Pinto (1976), where industrialization was seen as the main economic growth driver and economic development was understood as a process of diversification towards higher productivity sectors, with backward and forward linkages, technological and pecuniary externalities and spillovers, may lead to increasing returns.

Moving towards other important (and heterodox) theoretical contributions –although with clear contact points with the Latin American thought– Pasinetti (1981) considers structural change as the main characteristic of economic growth. In this sense, growth and structural change are the result of the diverse consequences of technological progress and

transformations in the demand patterns, and learning –individual and social– was understood as the main engine of economic change. Some of the main critiques to Pasinetti’s framework were based on the exogenous causes of growth and the fact that technological change and consumer preferences are exogenous in the economic system. It was not until the 1980s when new attempts were introduced to explain the micro-foundations of the agent decisions and the demand patterns within a specific theoretical, and then orthodox, framework (the New International Trade Theory in Grossman & Helpman 1994; Krugman 1986, 1991; the Endogeneous Growth Theory in Aghion & Howitt 1992; the New Development Theory in Ray 2000; Ros 2000).

In the meantime, within the heterodox tradition, authors such as Kaldor (1956, 1957), Nelson & Winter (1982) and Pasinetti (1993) made important contributions since the 1960s, and two approaches may be clearly identified. On the one hand, the Neoschumpeterian and the Evolutionists worried about innovation and technological change and, on the other hand, the Postkeynesians and Postkaldorians dealing with demand and structural change. From the Latin-American structuralism, in the 1990s there was a renewed interest on the traditional problems, heterogeneity and structural change, introducing some elements from the evolutionist and endogenous growth theory (Fajnzilber, 1983, 1987; CEPAL 1992).

Going back to the Uruguayan case, some of the explanations about the economic development have introduced structural change as a central category although the analytical relevance has varied along time. Within the “classical visions” of the 1960s and early 1970s, the studies of CIDE (1963) and Faroppa (1965) –from a structuralist approach– and Instituto de Economía (1969) –from the Dependency Theory– represented relevant contributions among the contemporaneous Latin America economic thought. On the other side, the study of the Oficina de Planeamiento y Presupuesto (1977) –from a liberal or neoclassical vision– move away from the concept of structural change. Within the “modern literature”<sup>3</sup>, since the 1990s, there was a renewed interest in structural change, see for example Bértola (1993) and Bértola & Porcile (2000) from a postkaldorian and evolutionist perspective and the contributions of Arocena & Sutz (1999, 2000 a, b) from a neo-schumpeterian vision. However, this analytical framework was not a consensus. For instance, Rama (1990, 1991) –from a neo-institutionalist vision–focused on the endogeneity of economic policies, moral hazard and asymmetry of information.

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<sup>3</sup> Willebald (2005) presents this distinction between “classical” and “modern” visions of economic growth in Uruguay.

Recent academic and political interests in the productive specialization of the economy, economic diversification and the quality of the trade international participation are new contributions to the analysis of structural change. Studies like Bittencourt (2006), Duque & Román (2007), Bértola & Porcile (2007), and Willebald (2006, 2007), Brunini et al. (2012) and Isabella (2012) have placed specialization and structural change in comparative perspective at the centre of the analysis. Finally, other studies, of interest to comment are those associated with the role of science, innovation and technology (PNUD (2005), Bértola et al. (2006), Snoeck et al. (2008) y Snoeck (2008)).

### *1.2 Empirical approach for structural change*

Structural change may be understood as long-run changes in economic aggregate composition and therefore different dimensions are necessary to be taken into account. On the one hand, structural change is associated with transformations which affect the disaggregated unities and alter in different magnitudes each single unit. On the other hand, those transformations are relevant in the long run, so structural change becomes a main pivot in economic growth (Krüger 2008). Vikström (2001) summarize other definitions. The concept of "structure" can be interpreted "as the system of relations, which prevails between the parts of the unit" (Hjalmarsson 1973). So in this definition when we talk about structure and structural change we are referring to different levels of aggregation in the economy, from firms to branches to the whole economy. In this sense, Vikström (2001) measures structure as the relation between the input coefficients and the unit production capacity. For Chenery et al. (1986) structural change is a function of economic growth and is understood as the set of changes that happen in the composition of demand, trade, production and factor use that take place while economic growths (increase of per capita income). Both concepts need information from input-output tables that most of the times are difficult to reconstruct for historical periods. However for Blomqvist (1989) structural change is a function of time, and he defines it as those changes that take place over time in the production composition and the allocation of productive factors (quoted from Vikström, 2001: 7). In Vikström (2001)'s approach structural change deals with changes in the allocation of resources and therefore with modifications in the production composition. We follow this author's concept, where structural change is defined as the transformation in the composition of value added for the unit that is under study. However, it is interesting to differentiate between this operative level and the notion of structural change in historical terms. The history of western economies from the 18<sup>th</sup> century to the beginning of the 21<sup>st</sup> century is characterized by a systematic variation in the economic

and social structure associated with a rising level of per capita income. Structural change interact with the pattern of productivity growth to determine the rate and pace of growth (Syrquin 1986: 436-37). At the sectoral level, and as a general pattern, these changes meant the transformation from agrarian based economies to manufacture and, since the last quarter of the 20<sup>th</sup> century, the dominant share of services as the more relevant activities to generate economic wealth.

## 2. Methodology and data

### 2.1. The angle measure of structural change

Following Moore (1978), the output structure can be described as a vector whose coordinates are the sectoral shares of total output. Moore's measure of structural change is then defined as the angle between two vectors measured at two different points in time. The angle  $\theta$  is defined as that one that verifies equation (1):

$$\cos(\theta) = \frac{\langle A, B \rangle}{\|A\| \cdot \|B\|} \quad \text{where } 0 \leq \theta \leq \pi \quad (1)$$

The symbol " $\langle . \rangle$ " represents the inner product of two vectors, while the " $\| \cdot \|$ " represents the Euclidean norm of a vector.

In the specific case of an economy with two sectors, the economic structure and its change between two moments in time, A and B, can be illustrated as in Figure 1.

Then, in this case, taking into account that the two vectors are  $A = (s_{1,A}, s_{2,A})$  and  $B = (s_{1,B}, s_{2,B})$ , the angle measure of structural change would be calculated as follow.

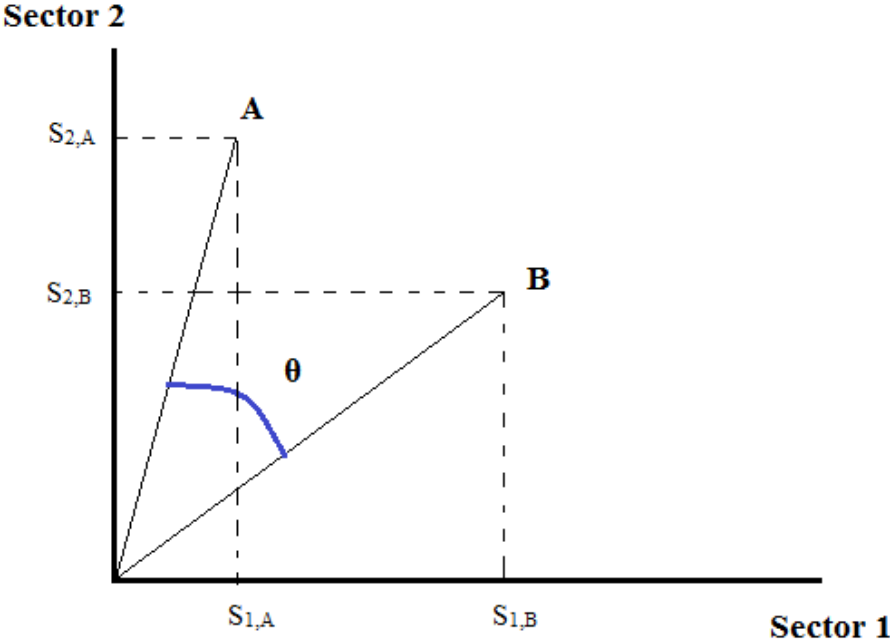
$$\cos(\theta) = \frac{\langle A, B \rangle}{\|A\| \cdot \|B\|} = \frac{\langle (s_{1,A}, s_{2,A}), (s_{1,B}, s_{2,B}) \rangle}{\|(s_{1,A}, s_{2,A})\| \cdot \|(s_{1,B}, s_{2,B})\|} = \frac{s_{1,A} \cdot s_{1,B} + s_{2,A} \cdot s_{2,B}}{\sqrt{(s_{1,A})^2 + (s_{2,A})^2} \cdot \sqrt{(s_{1,B})^2 + (s_{2,B})^2}} \quad (2)$$

The measure can be generalized for a n-sector economy, as it is stated below. We must use then vectors in n-space (where  $t$  and  $t'$  are two different points in time):

$$\cos(\theta) = \frac{\sum_{i=1}^n s_{i,t} \cdot s_{i,t'}}{\sqrt{\sum_{i=1}^n (s_{i,t})^2} \cdot \sqrt{\sum_{i=1}^n (s_{i,t'})^2}} \quad (3)$$

It is interesting to notice that Moore (1978) shows that the vector coordinates can consist of commodities expressed in physical or monetary values instead of sectoral shares.

Figure 1  
The principle for the angle measure of structural change



Source: Vikström (2001).

As Vikström (2001) states, the angle measure of structural change can be calculated in two different ways, either as a change from year to year or as the change relative to a specific comparison year. The yearly measure reflects the short-term dynamics of the structural change, but can lead to errors when the long-term evolution is of interest. As it is stated in this paper:

*“It is not certain that high year to year changes imply permanent changes in the structure. A large change in one year can be balanced by a large change next year in the opposite direction, even if it is plausible that a period with sustained high year to year changes also implies a high level of permanent structural change.”*(Vikström 2001, p 9)

An alternative is to compare each year structure with the structure of a benchmark year. But, how can we choose this year? According to Vikström (2001) the benchmark year cannot be from the middle of the period, because the angle  $\theta$  cannot take negative values, meaning that the resulting series will have a V shape and it will be hard to interpret. The V shape mean that



in the period previous to the benchmark year the slope is negative, as the structure is approaching the one taken as reference, whereas in the period after the benchmark year the slope is positive, as the structure is moving away from the reference structure.

Therefore, the author suggests choosing the first year under study as the reference year, and the structural change process will be understood as a transition from one state to another. Therefore, in our study we select 1870 as the benchmark year.

As Vikström (2001) points out, the slope or the growth rate of the series will give as a measure of the structural change rate. A steeper slope implies a higher rate of structural change, while a negative slope indicates a reverting process towards the initial structure.

The emphasis of our study is on the long-term dynamics of structural change, so we also study the trend and breaks of the time series. However, comparing only with the initial structure of reference may hide important information to understand the medium-run dynamics. How can we introduce the medium-run dynamics in the analysis? As a first step in this direction, we estimate the series with 5-year moving average.

Therefore, we propose two indicators. Firstly, we calculate equation (3) considering  $t'=1870$  and, then, we propose a second indicator considering  $t'=t-5$ , with  $t=1870, 1871 \dots, 2010, 2011$ .

## *2.2. Data*

We work with the industrial value-added sectoral shares on total GDP at current prices. The data is taken from a previous work (Bonino et al. 2012) where we summarize the available information about productive activity and total GDP series between 1870 and 2011. We work with seven productive branches: Agriculture, Manufacturing, Construction, Utilities (Electricity, gas and water), Transport and communications, Government, and a residual with the rest of the activities.

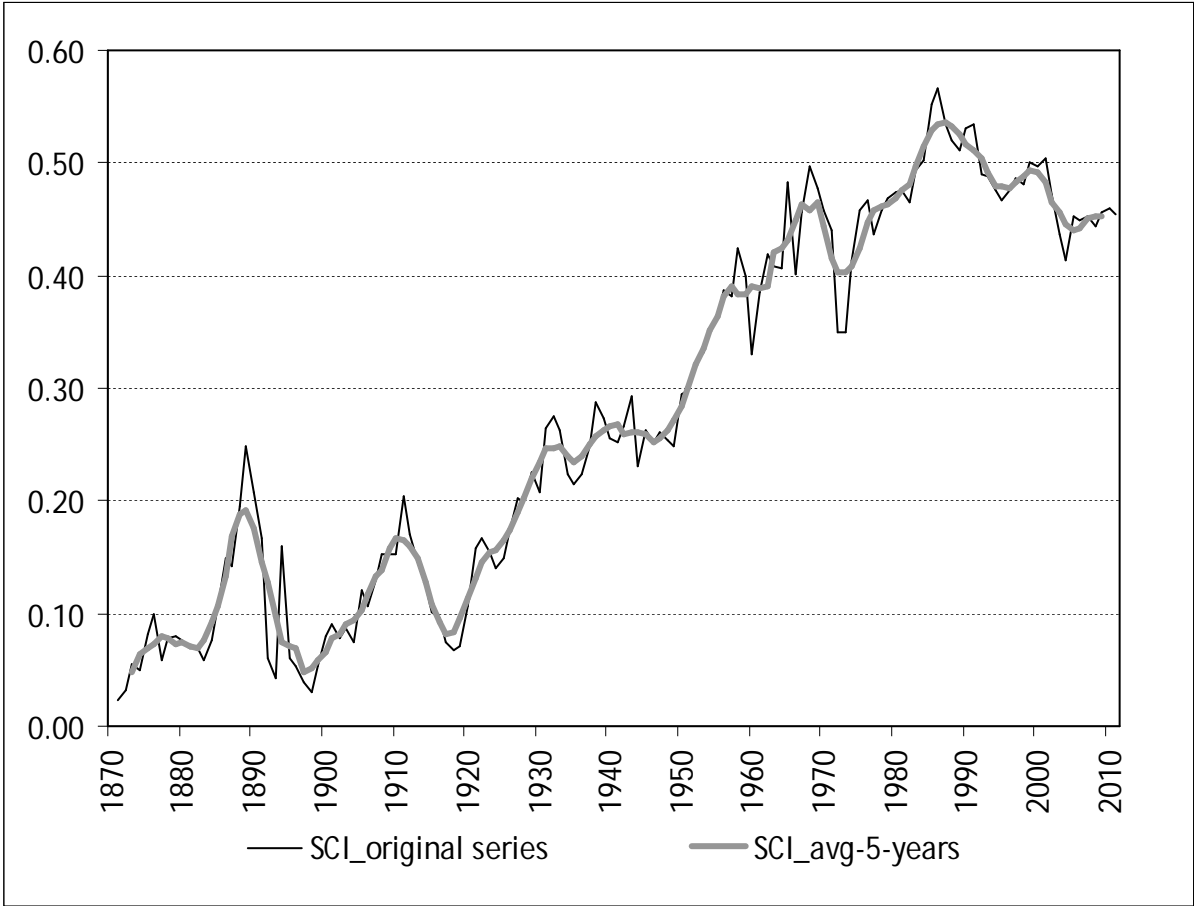
## **3. Results and historical overview**

### *3.1 General trends and economic growth patterns*

We present our structural change indicator (taking as reference the productive structure of 1870) in Figure 2. Initially, the evolution does not show a stable trend and not until the 1920s there is an increasing trajectory of the indicator insinuates some evidence of structural change. In this period, the indicator achieved higher levels but they will be over passed in the rest of

the century. However, this upward trend slowed down in the beginning of the 1930s and the process entered a stagnation phase until the end of the Second World War. In 1947-1948 the indicator show an increasing trend but suddenly breaks in 1957 facing a new stagnation period until 1963. The structural change index presents a renewed dynamic in the second half of the 1960s that stops in 1969 as the economy evidenced a strong backward alteration. From the mid -1970s to the mid-1980s, there are important signs of structural change although the process slowed down in 1984-1985 and the evolution of the indicator shows a reversal evolution.

Figure 2  
 Structural Change Index  
 1870 productive structure as benchmark  
 Original series and 5-year average series <sup>1/</sup>



1/ The figure corresponding to each year represents the 5-year moving average (centered in that year). For instance, the first figure of this series is 1872 and it represents the average 1870-1874. Source: own elaboration based on Vikström (2001) and Bonino et al. (2012).

Is this trajectory explained in historical terms? We present an historical overview of the economic performance of Uruguay to identify some relevant stylized facts that give robustness to these results.

According to our indicator, the economy evidenced a first boost of structural change during the 1880s, when the economy “were prepared” to take off in terms of production and infrastructure. However, this process did not mean a significant expansion of new productive activities and with irregularities, the economy did not change definitely its initial productive pattern until the 1920s. After First World War, the economy begun a progressive and sharp structural change process that seems to corroborate the recent literature that affirms the existence of a significant “early manufacture” (*industria temprana*) previous to the 1930s (Bértola, 2000). The Great Depression and the subsequent years present lower dynamism and face multiple difficulties to undertake modifications in the productive structure. This stagnation contrasts with the post Second World War period identified with the import substitution industrialization (ISI) or state led industrialization. Our indicator is very eloquent in identifying “the end” of the ISI, in 1957, and the beginning of a stagnation phase. The GDP evolution during the 1960s shows a similar slow down for the whole economy but our indicator accounts for some interesting movements within the productive structure from 1963 to 1969. However, the early 1970s represented a period of a strong reversal in the productive structure within a specific conjuncture in the international commodity markets with meat prices reaching record levels. The new economic growth pattern in the mid-1970s with an increasing financial liberalism, openness, regional integration and the proposal of an export-led strategy meant renewed strength for changes in the productive structure. In the mid-1980s, Uruguay achieved the higher levels of the indicator but it could not afford to maintain the previous dynamic and the “lost decade” also affect the structural change. Previous to 2000 and during the recent years the economy has showed some signs of reversal the prevailing trend but it is too soon to conclude. Overall, in the long run, the index of structural change show general trend but also important breaks. This becomes the matter of the next item.

### *3.2 Crises, breaks and reversal movements*

According to Bértola (2008), GDP growth shows a pattern featured by Kuznets-like swings (Bértola & Lorenzo 2004), with extremely destructive downward phases and periodical crises. Table 1 shows the magnitude of each crisis, the years required to achieve the level pre-crisis and the time to the next fall episode. What happened with our indicator of structural change in each period?

Table 1 shows the peaks of the evolution of our indicator based on the original series (column 6) and on the 5-year average (column 7). The correlation between both processes is clear although it is not possible to identify causal relations (this will part of following stages in the research). However, it is marked that “around” each crisis episode, the economy reacted going back to the primary production probably looking for traditional comparative advantages or because in such negative phases, the weakest and most exposed sectors were those different to agriculture.

We identify only one period of “primarization” which occurs in stable periods. Our indicator makes an additional peak in 1968-1969 and fall systematically until the mid-1970s as a consequence of the vigorous answer of export sectors to the recent devaluation (April, 1968) and the unusual high levels of the international commodity prices (meat) in 1969-1970 (Finch 2005). Export sectors were based on agricultural production and, apparently, the changes in relative prices meant deep alterations in the productive structure.

Table 1  
Falls, length of recession, time to pre and next crisis and  
structural change reversal

					Peaks of structural change (years)	
(1)	Per capita GDP fall (%) (2)	Length of recession (years) (3)	Time to pre-crisis levels (years) (4)	Time to next crisis (years) (5)	Original series (6)	5-year average series (7)
1872-1875	26	3	15	16	1876	1877
1888-1890	21	2	19	25	1889	1889
1912-1915	30	3	15	19	1911	1910
1930-1933	36	3	17	24-27	1932	1931
1954/57-59	9	2-5	18-21	27-24	1958	1957
1981-1984	17	3	11	17	1986	1987
1998-2003	21	5			2001	1999

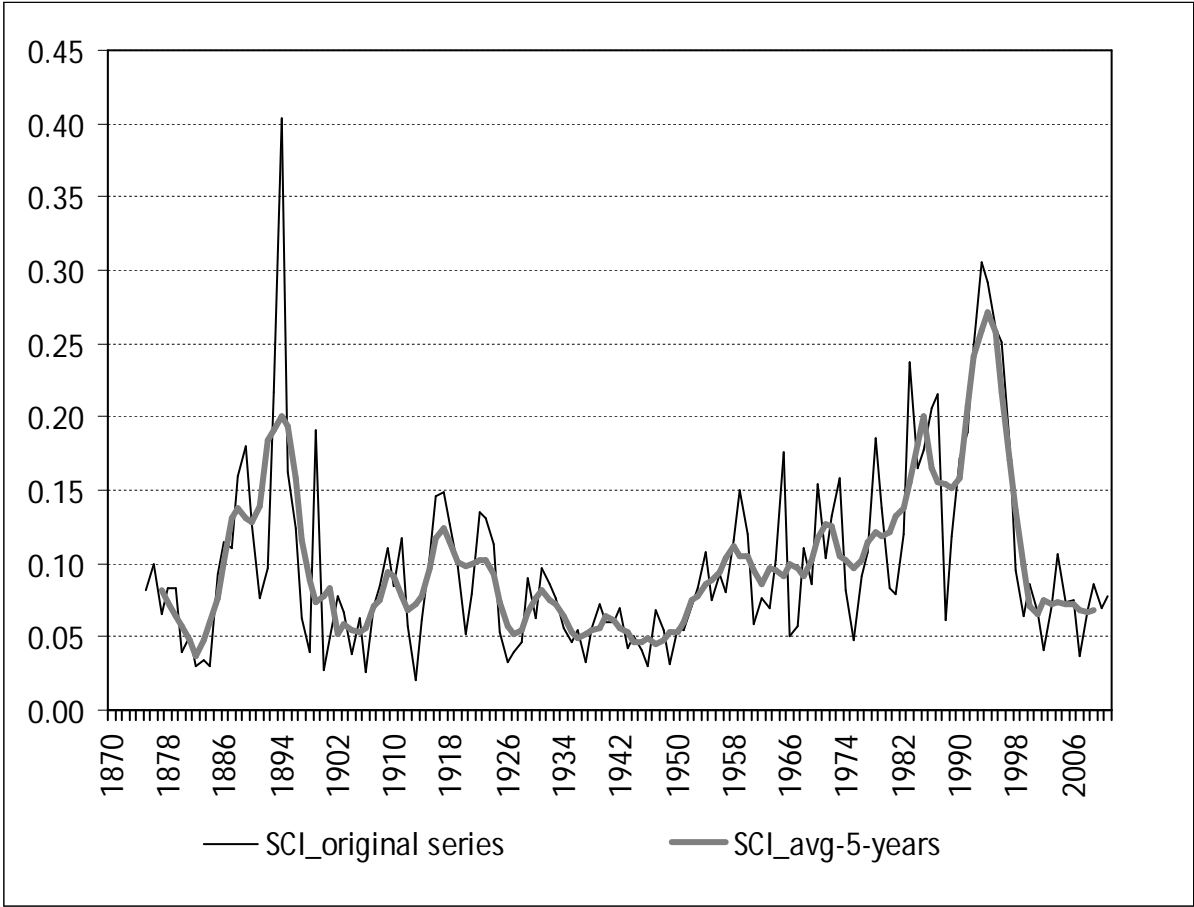
Source: extracted from Bértola (2008) (columns 1-5) and own estimates (columns 6-7).

### 3.3 Intensity of structural changes

We propose some modifications in the indicator to make possible a deeper study of dynamics. In the first version –and following Vikström (2001)’s proposal– we consider the structure corresponding to 1870 as the benchmark. In a second version of our index, we consider a moving 5-year reference to grasp the transformation of the productive structure in the recent past. After this transformation we expect a more sensitive indicator to the latest changes and, in consequence, the result show a more irregular evolution (see Figure 3) which describes the

intensity of structural change. In other words, the indicator captures changes regarding the last five years and, in consequence, represents more adequately the strength of the process. We choose a 5-years moving average as a reference because we need a period long enough to capture relevant changes in the productive structure but short enough to keep the cycling movements. From 1881 to 2000, Uruguay showed medium-run movements according to Juglar cycles (Bértola & Lorenzo, 2001, 2004) –ten-year cycles– and to take as reference a “half Juglar cycle” is operatively convincing.

Figure 3  
 Structural Change Index  
 5-year moving benchmark  
 Original series and 5-year average series <sup>1/</sup>



<sup>1/</sup> The figure corresponding to each year represents the average of the 5-year period centered in that year. For instance, the first figure of this series is 1872 and it represents the simple average 1870-1874. Source: own elaboration in base on Vikström (2001) and Bonino et al. (2012).

During the phase of primary export led-growth, the economy experienced two periods of deep structural changes; in the 1880s until the first years of the 1890s and from the beginning of the 20<sup>th</sup> century until First War World. However, the more sustained structural change period

take place along the second half of the 20<sup>th</sup> century and the evolution showed successive waves. The first wave corresponded to the ISI period (1947-1958 according to the 5-year average indicator) and the second one to the reglobalization phase (from 1975 to 1985). The economy post-dictatorship showed strong volatile movements that increased (1989-1994) and decreased the indicator (1994-2001) and from 2002 onwards the trajectory has been stable and stagnated.

#### **4. Final remarks**

In the last decades, the increasing interest in economic diversification, technological sophistication and productive specialization placed structural change in the centre of the analytical and empirical concerned in the economic development theory. However, the efforts to measure structural change from a long-run perspective are scarce and, in particular, are lack in Uruguay. Our aim is to shed light on this question through a synthetic indicator to represent the dynamics of structural change in the long run to identify different development stages in the Uruguayan economic history. We offer a long-run indicator of structural change based on trigonometric notions to combine the movements of seven productive branches from 1870 to 2011.

Our results clear describe the different development patterns that, according to local literature, characterized Uruguayan economic history. In addition, the evolution of our indicator provides other interesting insights. The decreasing of the original version of index—which indicates “backward movements” in the productive structure— define a dynamics where each negative period was associated with the (relative) primarization of the economy. In other words, it seems evident that “around” each episode of crisis, the economy reacted going back to the primary production probably looking for traditional comparative advantages or because in such negative phases, the weakest and most exposed sectors were those different than agriculture. In terms of intensity of the process, two stylized facts arise from our analysis. On the one hand, the second half of the 20<sup>th</sup> century represented a period of increasing and sustained modifications in the economic productive structure. On the other hand, the end of both centuries was characterized by high and comparable intensities in structural change.

Finally, our research agenda will go in two directions. On the one hand, we will introduce time series analyses to identify statistical breaks, changes in levels and trends, and acceleration and desacceleration phases. In addition, we will calculate the relative sectoral contributions to identify the driving force activities of structural change. On the other hand,

we will study the dynamics of structural change according to diverse explicative factors that, hypothetically, would have affected the long-run performance. We will propose indicators of technological progress, income demand elasticity and comparative advantage in foreign trade to study the systemic trajectory of growth and structural change.

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## Appendix

Table A1. Gross Value Added by productive sectors at current prices

Bértola et al. (1998) 1870-1936	Bertino y Tajam (1999) 1900-1955	BROU (1965) 1955-1960	BCU 1960-1970	BCU 1970-1983	BCU 1983-1988	BCU 1988-2008	BCU 1997-2005	BCU 2005-2010
Base 1913	Base 1925	Base 1961	Base 1961	Base 1978	Base 1983	Base 1983 (Rev. 1988)	Base 1997	Base 2005
Agropecuario (Agricultura + Ganadería)	Agropecuario (Agricultura + Ganadería)	Agropecuario (Agricultura + Ganadería)	Agropecuario (Agricultura + Ganadería)	Agropecuario	Agropecuaria (Agricultura + Ganadería)	Agropecuaria (Agricultura + Ganadería)	Agropecuaria (Agricultura + Ganadería + Silvicultura)	Agropecuaria (Agricultura + Ganadería + Caza+ Silvicultura)
		Pesca	Pesca	Pesca	Pesca	Pesca	Pesca	Pesca
					Canteras y Minas	Canteras y Minas	Minería	Minería
Ind. Manufacturera	Ind. Manufacturera	Ind. Manufacturera	Ind. Manufacturera	Ind. Manufacturera	Ind. Manufacturera	Ind. Manufacturera	Ind. Manufacturera	Ind. Manufacturera
Servicios comercializados	Electricidad, gas y agua	Electricidad, gas, agua y servicios sanitarios	Electricidad, gas, agua y servicios sanitarios	Electricidad Gas y Agua	Electricidad, gas y agua	Electricidad, gas y agua	Suministro de electricidad gas y agua	Suministro de electricidad gas y agua
Construcción	Construcción	Construcción	Construcción	Construcción	Construcción	Construcción	Construcción	Construcción
		Comercio	Comercio	Comercio	Comercio, restaurantes y hoteles	Comercio, restaurantes y	Comercio, reparaciones,	Comercio, reparaciones,
Transporte	Transporte	Transporte y almacenamiento	Transporte y almacenamiento	Transportes y Almacenamiento	Transportes y almacenamiento	Transportes y almacenamiento	Transporte y almacenamiento	Transporte y almacenamiento
	Comunicaciones	Comunicaciones	Comunicaciones	Comunicaciones	Comunicaciones	Comunicaciones	Comunicaciones	Comunicaciones
		Bancos, Seguros y otros intermediarios financieros	Bancos, Seguros y otros intermediarios financieros	Bancos, Seguros y otros intermediarios financieros	Establecimientos financieros y seguros, bienes inmuebles y servicios prestados a empresas	Establecimientos financieros y seguros, bienes inmuebles y servicios prestados a empresas	Servicios de intermediación financiera	Servicios de intermediación financiera
		Propiedad de viviendas	Propiedad de viviendas	Propiedad de viviendas			Actividades inmobiliarias, empresariales y de alquiler	Actividades inmobiliarias, empresariales y de alquiler
Administración Central	Gobierno Central	Servicios del Gobierno General	Servicios del Gobierno General	Servicios del Gobierno General	Servicios del Gobierno General	Servicios del Gobierno General	Administración pública y defensa, planes de seguridad social de afiliación obligatoria	Administración pública y defensa, planes de seguridad social de afiliación obligatoria
		Otros servicios comunales, sociales y personales	Otros servicios comunales, sociales y personales	Otros servicios comunales, sociales y personales	Otros servicios comunales, sociales y personales	Otros servicios comunales, sociales y personales	Salud	Salud
							Servicios personales y hogares con servicio doméstico	Servicios personales y hogares con servicio doméstico
							Enseñanza	Enseñanza