

Methodological revision of the cost of living index of the city of Buenos Aires, 1933-1945

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Abstract:

From the 1930s to the mid 1940s, social and labour statistics in Argentina flourished, mainly fostered by the National Labour Department. This paper shows that in the early 1930s, a cost of living index with specific methodological pitfalls was elaborated, which, among other problems, only accounted for the behaviour of the poorest segment of society. The development of new estimates—with official data that has never been used before—shows that the official index might be underestimating the cost of living faced by workers and by society as a whole. As such, this paper is proof that it is important to consider the context in which statistics are produced and the methodology carried out to gather the information or to develop indicators.

Keywords: Cost of living index, Departamento Nacional de Trabajo, Buenos Aires

Revisión metodológica del índice de costo de la vida de la ciudad de Buenos Aires, 1933-1945

Resumen:

Entre 1930 y la mitad de la década de 1940, las estadísticas sociales y laborales argentinas florecieron, gracias a la labor del Departamento Nacional de Trabajo (DNT). Este artículo demuestra que a principios de la década del 30, el DNT elaboró un índice del costo de vida para la ciudad de Buenos Aires con fallas metodológicas específicas, que, entre otros problemas, solamente reflejaba el comportamiento y las preferencias del segmento más pobre de la sociedad. El desarrollo de nuevas estimaciones, con información pública nunca antes utilizada, muestra que dicho índice subestimó el costo de vida que enfrentaban tanto los trabajadores como la sociedad en su conjunto. Consecuentemente, este paper es una evidencia de cuán importante se torna considerar el contexto en el cual se producen las estadísticas al igual que la metodología utilizada para recopilar información y para desarrollar indicadores.

Palabras clave: Índice del costo de vida, Departamento Nacional de Trabajo, Buenos Aires

Statistics are a form of knowledge as well as a source of power (Senra, 2005; 2011). They are meant to reflect reality or be an approximation to it, but ‘ “reality” is informed by the fairly unconscious intermingling of several attitudes to reality’ (Desrosières, 2001, p.339). As such, statistics ‘are complex objectifications, which reveal previously thought out idealised realities’ (Senra, 2011, p.52, my translation). Moreover, statistical institutions are also research centres. As such, they follow scientific and technological values as well as procedures and perspectives that are proper of their research fields. When considering public statistics, the statistical institutions are also subject to rules, regulations, values and restrictions of the public sphere (Schwartzman, 1997, p.9). Thus, they are not only developed for the sake of knowledge, but also to design different types of policies.

As for Argentine social and labour statistics produced in the first half of the twentieth century, substantial research has been done in recent years. Such research focuses on the main public organisation that produced these statistics: the National Labour Department. However, there is a gap to be fully filled, especially in the analysis of the methodology used to develop indicators. This paper aims at opening the door to settle the latter gap, revising the methodology behind the estimate of the cost of living index developed in the early 1930s. The revision shows that such indicator was not representative of the Argentine society as a whole. It only reflected prices and preferences of a certain type of families of the city of Buenos Aires. Moreover, this paper states that the index had other methodological pitfalls, fostering the idea that it should be revised in order to estimate a more representative index. Later on, the paper compares the official numbers to new estimates of the same index that use official and disaggregated data that has never been considered before. This revision hints at an official underestimation of the price evolution during the period 1933-1945 if one considers a broader sample of families, but a narrower sample of goods and services. Statistics are a form of knowledge and a source of power, but their usage has to be thought out carefully. It is important to consider the context in which statistics are produced and the methodology carried out to gather the information or to develop indicators. Statistics are not the revealed truth; they are an instrument that can help us understand certain phenomena with more accuracy.

The paper is structured as follows. The first section briefly describes the Argentine in the 1930s until the mid-1940s: what were the economic, political and social contexts as well as the situation regarding public statistics. The second section evaluates the characteristics of the cost of living index developed in this period, showing the pitfalls of the methodology used in its estimation. Section three analyses the trends in the general cost of living index and its main aggregations as an introduction for the following section where new estimations are carried out. The last section concludes.

Argentina in the 1930s and mid-1940s

The year 1930 was a turning point in Argentine history (Rock, 1993, p.173). The closure of the world markets after the Great Depression was an important factor behind the intensification of industrialization. Fostering import substitution industrialization was the rational alternative (Peralta Ramos, 2007, p.54), seen at the beginning as a necessity as well as temporary strategy. Intervention

and Keynesian type policies were especially implemented after mid-1933. Regulatory commissions were formed to control the distribution and the price of agricultural goods. The exchange rate started to be actively controlled. Programmes of public works were set in place. These policies helped in the rapid recovery of the economy. Politically, that year denoted not only the beginning of a period of instability but also the start of an era of military coups and restricted elections, which lasted until 1946.

Parallel to those economic and political shifts, there were also important social changes, mainly related to the declining population growth. Import substitution industrialization created a demand for workers in the urban areas, especially to the province of Buenos Aires, and thus Capital Federal, Argentina's federal district. Simultaneously, the State became more active in regulating the relationship between workers and employers. When Perón had himself appointed as the head of the Labour Department (Departamento Nacional de Trabajo, DNT) in October 1943 substantial changes started to occur in the labour sphere. Before Perón, the DNT oversaw labour relations only in Buenos Aires province and had no authority to negotiate or to enforce contracts or labour laws. A month after Perón's appointment, the DNT was transformed into the Labour Secretariat (Secretaría de Trabajo y Previsión Social), with national scope and increased authority. This brought Perón into the cabinet, and from there he sought to stimulate labour organisation and promote the interests of the working class. These changes consolidated the State as a major player in the collective bargaining process.

In search for a redefinition of the economic structure that was increasingly based on manufactures, between 1895 and 1945 Argentine social and labour statistics were 'an example of classification and re-classification of the industrial world' (González Bollo, 2002, p.1-2, my translation). Workers, the main actors of manufacturing industry, became one of the objects of analysis. The task of gathering information about the working class fell, mainly, in the hands of the Statistical Division (DE, División de Estadística) of the DNT. That task went through a first phase of acknowledgment of the worker as a socio-professional individual. In the interwar period—especially in the 1930s until the mid-1940s—that acknowledgment deepened and perfected. That is, the gathering of data regarding workers and industrial activity became regular and systematic (González Bollo, 2002, p.2-4), guided by the political intention to provide scientific support to government action (Daniel, 2011).

Between 1931 and 1943, José Figuerola was head of the DE. Given his expertise, social and labour statistics flourished. In this process, Figuerola transformed himself from a statistical officer into a government economist (González Bollo, 2008). The technician not only commanded the research within the DE, he also published books and articles that help understand the methodology carried out in the development of statistical indicators, which are key in this paper. In 1933, under the guidance of Figuerola, the first family budget survey was carried out. This budget was the basis of the cost of living index (CLI) that started to be published in the early 1930s. Nevertheless, this was not the first CLI in Argentina. The first CLI appeared in a 1924 publication. That publication, carried out by Alejandro Bunge, did not have a clear methodological section (DGEN, 1924). It was mainly based on price information of a few set of goods (see González Bollo, 1999).

Regarding social and labour statistics, in recent years, substantial work has been done on the DE, the DNT as well as on how the working class has been researched by public organisations. See, just as examples,

Daniel (2009; 2011), González Bollo (1999; 2002; 2004; 2007; 2012). Nevertheless, an analysis of the statistics produced, in terms of the methodology used, is still an ongoing debt. This paper aims at opening the door to settle that debt through the analysis of the CLI that is based on the 1933 family budget survey.

A bit on the sources and methodology: the theoretical budget as the basis of the cost of living index and the 1933 family budget survey

The need for a theoretical budget

The estimation of the CLI requires two irreplaceable pieces of information (Figuerola, 1935; 1942). On the one hand, a family budget structure. On the other, retail prices of the goods and services the average family consumes, which vary frequently. Since 1923, International Conferences of Labour Statisticians (ICLS) have been held in Geneva, fostered by the International Labour Office (ILO). The CLI and the international comparison of real wages were items on the agenda of the second ICLS, held in 1925. Nevertheless, it was in the third ICLS where the characteristics of the family budget enquiries were first discussed in depth. The latter conference stated that in order to develop a CLI, a reference budget should be established after carrying out research of family budgets (ILO, 1926). The studies that were released after each conference were used as the basis for the several official reports that were published in Argentina throughout the 1930s and the mid-1940s, which aimed to analyse the standard of living of the Argentine society, specifically of the Argentine working class. This section briefly reviews some characteristics of the Argentine publications released in the 1930s and mid-1940s that estimated the CLI, followed by an analysis of the theoretical budget that emerged from the 1933 family budget survey.

The official publications aimed at finding out and measuring the economic needs of the working class. The public organisations that released them considered that to fulfil that goal they had to obtain knowledge of the cost of living. This objective was based on the belief that these types of studies were the starting point in the design of social policy (DNT, 1935). The studies on the consumption preferences of the working class were complemented with the gathering of information on wages, in order to compile data on the workers' purchasing power. The organisations considered that such knowledge could be achieved by elaborating a CLI that could be compared to the workers' wage.

Budget surveys were conducted in 1933, 1935 and 1943 in the city of Buenos Aires. After each survey the statistical bodies determined a theoretical family budget or 'presupuesto teórico', as the DNT called it. The theoretical budget then became the basis for the CLI of Argentina as a whole—geographically and socially. Nevertheless, as it will be discussed, it was restricted to the preferences of a part of the working class that lived in Argentina's federal district. Consequently, for these and other reasons, the Argentine CLI becomes a problematic index.

Once the survey was carried out, the theoretical budget was elaborated using the information of those workers' families with the lowest monthly average income that met their basic needs solely with the head of household's wage. As such, the theoretical budget could buy the basic goods and services and thus attend the basic needs only with that expenditure/income. It corresponded to the lowest budget possible since it was the most sensitive regarding the smallest possible price variation, thus showing the changes in the basic needs of the families. The theoretical budget contained basic goods in little quantities. Thus, price variations greatly affected the budget (Figuerola, 1935, p.135). Consequently, the theoretical budget was not a weighted average of all the data gathered. It reflected the consumption of a specific type of family, the one that earned the lowest income and lived in the city of Buenos Aires.

As for the family structure of the theoretical budget, it was chosen given its representativeness in the sample. This demographical data that emerged from the survey was compared with the census data as well as other demographic studies, to check its accuracy. The theoretical budget had five main components: food, housing, accommodation, clothing and general expenses. The DNT considered that the theoretical budget could serve as a reference for a time span of at least five years, since it reckoned that consumption habits do not vary so frequently as for the consumption structure to change (DNT, 1935).

Regarding the gathering of price data, the second irreplaceable piece of information needed to estimate the CLI, given the recommendations of the first National Conference of Statistics, held in the Argentine city of Córdoba in 1925, the DNT had been gathering monthly information on a set of goods and services. More specifically, prices were gathered every five days in different types of markets and stores of workers' neighbourhoods. The monthly price was an average of all the prices registered for a certain good or service in one month (Figuerola, 1942, p.342).

The first theoretical budget

In October 1933 the DNT carried out its first survey on family budgets in order to find out workers' real needs as well as to set up the basis for the construction of a CLI based on a family budget survey as recommended by the ICLS. All the information gathered was published as a report in 1935. The survey was initially distributed amongst 6,000 families of manual workers and commercial employees of the city of Buenos Aires. In order to guarantee the authenticity of the data, surveys were handed out in equal proportions through three channels: workers' associations, firms, and inspectors from the DNT (Figuerola, 1935, p.119). No criterion about how the surveys were handed out by these three channels was specified. Compared to the ones that followed, the 1933 survey was the broadest and most ambitious study of all. It not only covered a wide arrow of monthly income; it also surveyed workers' as well as employees'

families. The survey was performed during one month. This generated a representative and a seasonal issue, acknowledged by those who carried out the study (Figuerola, 1942, p.274), which impacted on the result. Unfortunately, those impacts could not be measured nor identified accurately and the data has to be used despite them.

Throughout October 1933, families were asked to record the daily amount of money spent on different goods and services. That is, the families were not given a pre-determined list of items to consider, but were allowed to record the value of all their purchases. When returned to the DNT, the reports were grouped by monthly income and by family structure. Even though this process will be commented upon later, the categorisation of the budgets followed what will here be named monetary and demographic conditions. Given the monetary condition, only budgets whose head of household earned between m\$*n* 115 and m\$*n* 550 were selected. Then, they were categorised in ten income categories, five corresponding to workers (m\$*n* 120, m\$*n* 140, m\$*n* 175, m\$*n* 200, m\$*n* 230), and five corresponding to employees (m\$*n* 250, m\$*n* 300, m\$*n* 350, m\$*n* 400, m\$*n* 500). Each income group was further broken down according to family structure. That is, following the demographic condition the budgets that compiled with it were categorised according to if they were formed solely by a couple, or by the couple with 1, 2, 3, 4, 5 or 6 children.

As a result, the DNT obtained the average amount of money spent by each type of family in the different items. All budgets had four main components: food, housing, rent and general expenses. Using the official price list, the DNT then estimated the physical quantities consumed. These values and quantities became the basis for the family budgets. Thus, a first problem can be identified with the data. The quantities consumed were not directly measured given that the original piece of data gathered and published corresponded to the value spent on each good or services by each family. Consequently, the quantities set up as the basis to estimate the theoretical budget and thus the CLI were not necessarily the real quantities consumed by each family since the latter were estimated using prices which might or might not correspond to the actual prices paid. This is acknowledged by Figuerola (1942), but not given much relevance.

In order to estimate a CLI, a budget has to be used as reference. According to the recommendations of the ICLS an average budget has to be determined using the family budget survey information. This is the budget that would be traced in time using monthly data and it should represent the average earnings and average family structure. As mentioned earlier, in DNT terms, that budget was called theoretical budget. The 1933 survey established a theoretical budget which corresponded to a family with three children under the age of 14 whose head of household earned and spent m\$*n*120 per month. This theoretical budget was the basis for the CLI that started being published in the 1930s, and that was linked up with Bunge's estimates for the 1920s.

When analysing in detail how the 1933 theoretical budget was estimated, one can see that it was estimated on the basis of only four family budgets. Nevertheless, this was not due to data

availability. There were ten family budgets surveyed that complied with the demographical and monetary conditions of the theoretical budget. The choice of just four budgets over the ten available ones was mentioned in the official report. It was justified on the premise that expenditure and income balanced out in them, while in the other six, expenditure outbalanced income (DNT, 1935, p.23). Even though it is a reasonable explanation, this meant that the CLI was based solely on what four families consumed over one month. Their consumption was assumed as representative of the working class. There was an issue with the length of the time span in which the survey was carried out, as mentioned earlier, which casts doubts on the reliability of the data. Thus, one could state that a theoretical budget that gathered information from a larger number of families could help counterbalance that fault, even if some of the budgets considered spent more than they earned.

Another striking issue that comes from analysing the 1933 theoretical budget is that the average of the four budgets used as the basis of the theoretical budget did not correspond to the value used to estimate the quantities of the theoretical budget. This issue was not addressed in the 1935 official publication, but it was commented upon by Figuerola much later on. He attributed the differences to the fact that adjustments had to be made in order to introduce a clothing component to the theoretical budget which was not surveyed at all (Figuerola, 1942, p.318-9). The exclusion of the clothing component from the survey was justified on the fact that the survey was carried out throughout one month and that this type of expenditure was not generated every month given that it might be seasonal (Figuerola, 1942, p.327). Moreover, how the adjustments in each of the goods and services were made in order to round up to a value spent on clothing to m\$*n* 6.36 was not explained, neither was it analysed why that specific amount was chosen. Some goods and services that were part of the average of the four budgets were completely omitted in the theoretical budget which helped round up the to the value of the clothing component. Such was the case of chicken, beer, eating out, schooling related expenditures, medicines. The exclusion of these items can relate to the fact that their prices were harder to gather or to their very low value in the budgets. One can further speculate that the lag between the official publication, where this issue was not mentioned, and Figuerola's assessment of the matter in 1942 might have been intentional. Not assessing the issue in due course might have been linked to the fact that there was no justification for these actions. By 1942, the CLI was well established as well as credible, and its methodology was not questioned, so it was likely that no one would pick up on this issues.

As mentioned earlier, once the surveys were returned to the DNT, there was a categorisation process following the monetary and demographic conditions. Out of the 6,000 initially distributed, only 3,020 replies were labelled as satisfactory and thus considered as pieces of data (Figuerola, 1942, p.277). Though the notion of satisfactory was not clearly defined, Figuerola stated that the DNT carried out

a rigorous selection process, considering only those surveys where the monthly wage was between m\$115 and m\$525 per month, and where the family structure corresponded to solely the couple, or the couple with 1, 2, 3, 4, 5 or 6 children, all under the age of 14 (Figuerola, 1935, p.118). Thus, one could consider this narrowing down process of family budgets as to have had two main conditions, one monetary and one demographic, respectively. Moreover, Figuerola stated that there were other two conditions: that families should be residents of the city of Buenos Aires and that they should not include other family members than that of what is here called the demographic condition. Nevertheless, when looking at the disaggregated data of the 1935 report, which claims to have all the data considered (DNT, 1935, p.13), one can see that only the budgets of 308¹ families were published. This was a reduction of almost 90% of the information initially gathered. The question that follows is why and how was the number of budgets narrowed down if the necessary conditions the budgets had to comply to were already considered in the first reduction previously mentioned. Possible reasons, although not conclusive ones, relate to poorly as well as wrongly answered surveys, lack of other basic information, budgets that were too far off from the average ones in terms of goods and services consumed, and the fact that the head of household was not the only one receiving an income in the household. This latter issue was of great importance to Figuerola (1942, p.281-3).

To sum up, Argentine public organisations during the 1930s and the mid-1940s elaborated a CLI to foster the analysis of the standard of living mainly of workers. They considered they were successful at this (DNT, 1935, p.4). The characteristics and particularities of this general CLI were never discussed by the authors that used it. But a thorough analysis of the theoretical budget estimated with the 1933 survey data raised up several questions, especially since that survey was the basis of the CLI used for a substantial period. The theoretical budget was estimated as a result of a one month survey carried out in October 1933. The survey was very extensive in terms of the income ranges and demographic characteristics of families surveyed. Despite all the information available, the theoretical budget solely considered the preferences of four families with three children under the age of 14 of the lowest wage category of the city of Buenos Aires, which in that month carried out expenditures that equalled their income. There was no information about the techniques used to select the families who answered the survey, nor how the narrowing down of the sample was made. The quantities of the goods and services of the theoretical budget were not directly measured. What were measured were the values of the goods and services consumed, and quantities were obtained later on. Moreover, how the DE of the DNT arrived at the definite quantities that formed the theoretical budget was not completely specified: issues regarding how the clothing component was estimated, for example, were never addressed. Consequently, a CLI with specific problems became the basis of many authors' analysis without them recognising it. Up until now, no studies have been done with all the budgets the 1935 DNT publication gathers. This task will be performed in the following section.

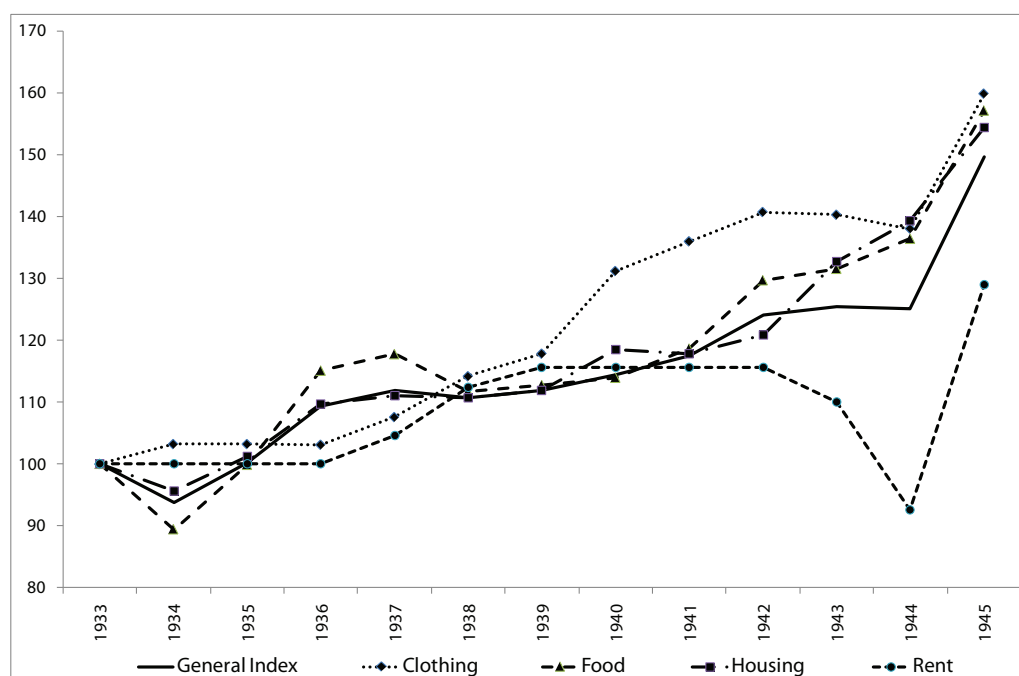
¹ Out of the 308 families, 196 were workers' families and 112 were employees' families.

The general cost of living index, its main components and the 1933 theoretical budget

Before carrying out new estimations with the 1933 survey data, it is worth looking at the official series of the CLI. As stated, the CLI that started to be published in the mid-1930s was based on the 1933 survey and thus on the 1933 theoretical budget. This means that it reflected the consumption of the poorest segment of workers of the city of Buenos Aires, embodied in a family with three children under the age of 14. It was not representative of the whole country or of the Argentine society at large. It was based on just four family budgets. The cost of living can be analyzed by just looking at the general index as well as by considering its main components.² Graph 1 shows the evolution general CLI and its components.

Graph 1: Cost of Living Index: general and components, 1933-1945

Base 1933=100



Sources: ILO (several years), DNT (1937), Dirección Nacional de Estadísticas y Censos (1968), and Secretaría Técnica (1947)

Graph 1 shows that between 1933 and 1945 the general price level in the city of Buenos Aires increased around 50%. The series showed an increasing trend throughout the whole period. The rent component was rather stable for some years. It showed an important decrease between 1943 and 1944 due to a decree passed by the military government in July 1943 that froze rent variations. In those years rent decreased close to 20%. Nevertheless, in 1945 it grew almost 40%. Given the government’s inclination to control rent prices, it was the component that increased less when comparing 1933 and 1945. The rest of the components—clothing, food and housing—showed trends rather similar to the general price level. Sometimes the modules moved closer to the general CLI while during other years the gaps widen. The food module showed an important increase during some years of the Second World War, due to the increase in the prices of basic goods. The component that grew apart the most from the

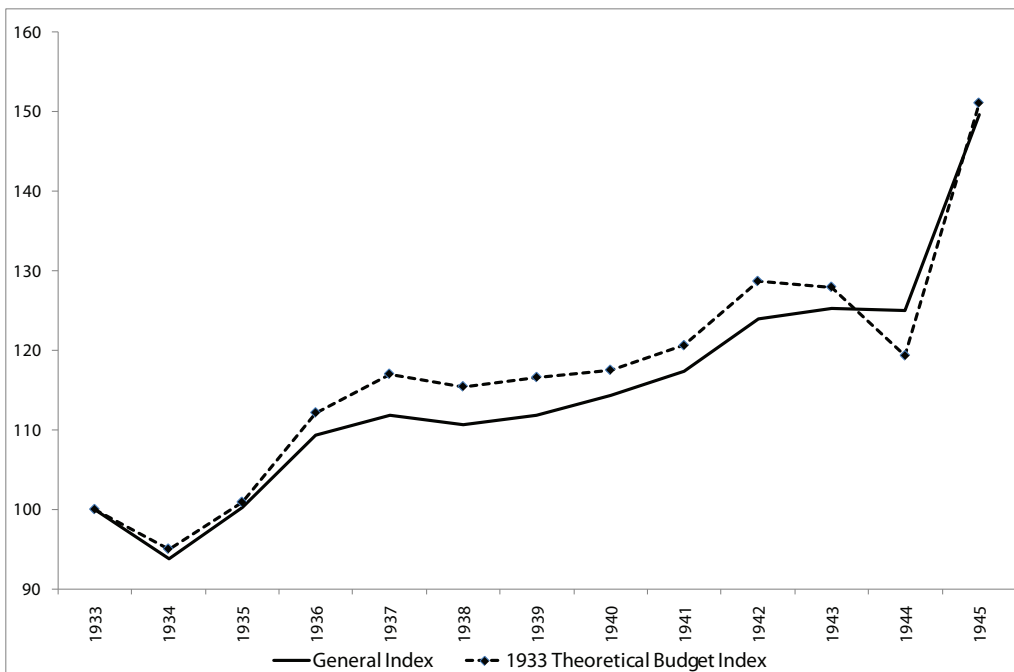
² There is also a general expenses component, which includes transport, newspapers and hairdressing service. This component is excluded in Graph 1 due to its stability between 1933 and 1942.

general price level was clothing, increasing between 1933 and 1945 around 60%. Food and housing moved quite closely to the general level until 1941, when they started to diverge from it.

The general CLI was based on the theoretical budget, so they should present rather identical trends. Given that there is only price data of certain goods and services available for this period, the analysis of the two indices aims to show the differences amongst them to then compare the theoretical budget to the new estimates, as the theoretical budget will be strictly comparable with those other budgets in terms of components. The estimate of the theoretical budget considered here excludes the modules listed as clothing and general expenditure—given the lack of price data. Consequently they do not merge the exact same items considered in the general CLI elaborated by the DNT. In the general CLI, the food component represented 57.5% of the total budget, rent was 25%, and housing was 4%. Considering the three main components, as the theoretical budget here elaborated, implies analysing 86.5% of the general CLI. As mentioned earlier, the poorest families had practically no income to spend on other goods and services apart from rent and food, which can be seen in this high percentage. The following graph shows the two indices.

Graph 2: General and Theoretical Cost of Living Indices, 1933-1945

Base 1933=100



Sources: My calculations based on DNT (1935; 1937), Dirección de Estadística Social (1947), and Secretaría Técnica (1947)

Graph 2 shows that the two indices moved in the same direction throughout the whole period. They moved quite closely until 1936 when the general CLI started to show even lower values. This was given the larger increases in the food component, which had a higher weight in the theoretical budget. In the theoretical budget, food represented 61.5% of the budget while rent accounted for 33% and housing for the remaining 5.5%. The narrowing down of the gap that started in 1937-8 related to the rise in prices of the clothing module. The 1944 drop related to the major decrease in rent. Since that item had a bigger share on the theoretical budget, the fall was bigger relative to the general CLI. During the last

three years of the period, the gap narrowed down once again. The growth in the missing components of the theoretical budget helped to close the gap, even though these two components' incidence in total spending was rather low. The clothing module increased. The general expenses component, after a decade of stability, increased in 1944 and 1945. The rise between the 1933 and 1945 was very similar the same for the two indices: 49.6% for the general CLI, and 51.1% for the theoretical budget.

Different baskets, different trends?

Given that a thorough analysis of the theoretical budget showed that it had problematic characteristics and due to the availability of data in the 1935 DNT report, this paper uses that information set to generate new estimates and compare them to the theoretical budget.

In order for the new estimates to be compatible with the theoretical budget, the budgets considered will be that of families with three children, meeting the demographic condition. Looking at the whole data sample and not only at the lower end of the income scale, one can see that this family structure gathered 49 families, distributed per wage category as follows in Chart 1.

Chart 1: Distribution per wage category of the cases surveyed. Families with 3 children

	Workers					Employees				
	m\$ n 120	m\$ n 140	m\$ n 175	m\$ n 200	m\$ n 230	m\$ n 250	m\$ n 300	m\$ n 350	m\$ n 400	m\$ n 500
Number of Families	10	10	10	2	3	3	2	2	2	5

Source: DNT (1935)

Cases were unevenly distributed among the wage categories. This might be related with an inadequate selection process of the sample or with the fact that on average most families had lower wages. The publication clearly highlighted the latter. Nevertheless, given that the highest wage category had such a big number of budgets, the publication's assertion might be put in question and the idea of an inadequate selection process might gain strength, especially given the fact that there is now information regarding the narrowing down of the sample of budgets.

Regarding the components of the budgets, in the case of the theoretical one as well as on the ones estimated here, the majority of the items were considered. The reason behind the exclusion of items was the lack of price data throughout the whole period to update the budgets. Three main components were analysed. The food component considered 18 goods—bread, potatoes, beef, legumes, eggs, pasta, fish, oil, canned foods, cheese, flour, yerba, sugar, rice, coffee, milk, wine, and soda water. As for housing, it considered three items: coal, kerosene and soap. The last component considered was accommodation, which solely contemplated rent. As mentioned, the theoretical as well as the rest of the budgets estimated here are fully comparable in terms of items considered. These items represent 86.5% of the general CLI.

Thus, with this data one can evaluate how the cost of acquiring different budgets changed over time. The procedure is simple. Given the information published for each budget, the

baskets were updated using the prices published in the official publications. The following chart shows the evolution in m\$_n of the cost of budgets corresponding to workers' families, the average cost of those five budgets, the budgets corresponding to employees' families with their average cost, the average of the ten budgets, and the 1933 theoretical budget.³

Chart 2: The evolution in the cost of budgets of families with three children, 1933-1945

In m\$_n

	m\$ _n 120	m\$ _n 200	m\$ _n 230	Average Workers	m\$ _n 250	m\$ _n 300	m\$ _n 350	Average Employees	Average All Budgets	Theoretical Budget
1933	115.2	165.9	129.7	133.7	174.7	202.5	200.7	191.8	162.7	87.0
1934	108.6	155.7	121.7	126.3	172.4	201.1	201.8	191.1	158.7	82.7
1935	116.9	169.0	133.0	136.4	181.9	211.6	211.2	200.8	168.6	87.8
1936	127.8	187.2	148.0	150.2	193.4	224.6	220.6	211.5	180.8	97.6
1937	132.3	195.4	152.5	155.9	201.1	233.9	228.5	219.5	187.7	101.9
1938	131.2	187.4	148.9	152.9	203.7	236.6	234.9	224.1	188.5	100.5
1939	132.2	188.6	151.4	154.0	206.3	238.9	238.4	227.0	190.5	101.5
1940	133.2	188.4	151.1	154.4	206.9	238.9	239.8	227.4	190.9	102.3
1941	137.7	193.5	154.9	158.7	210.4	242.8	243.5	230.9	194.8	105.0
1942	148.5	207.6	166.2	170.0	220.8	255.8	254.4	242.9	206.4	112.0
1943	147.5	207.9	166.3	169.4	217.2	251.5	248.6	238.2	203.8	111.4
1944	139.5	194.6	158.6	159.8	198.6	230.4	225.5	217.3	188.5	103.9
1945	173.4	241.0	197.8	198.9	254.7	293.8	292.0	279.5	239.2	131.5

Source: My calculations based on DNT (1935; 1937), Dirección de Estadística Social (1947), and Secretaría Técnica (1947)

As the monthly wage perceived per worker increased, the families tended to spend more money. The workers' families spent more than 60% of their income in food items and a bit more than 25% of it on rent. On the other hand, employees' families spent around 45% of their income in food and around 50% on rent. The remaining share corresponded to housing goods, the third component of these budgets. Families whose head of household received a higher wage had a bigger consumer capacity. Nevertheless, this was not always the case, like the m\$_n200, m\$_n300 and m\$_n350 budgets show. This might be related to the low number of cases considered in each wage category (see Chart 1). Another issue to consider is the representativeness of the budgets if the survey refers to the expenditures of a single month.

Chart 2 shows a discrepancy between the values in the m\$_n120 budget and the theoretical budget. They should be equal or at least similar, since the theoretical budget refers to the lowest wage category of a family with three children. As previously shown, the difference was based on the fact that the quantities of the theoretical budget were not based on the ten families that correspond to the m\$_n120 wage category, but solely on those four who in October 1933 spent what they earned. Given that the remaining six families spent well above their earnings, throughout the period the theoretical budget here estimated represented, on average, 76% of the m\$_n120 budget. Despite that, between 1933 and 1945 both series increased an almost identical percentage, while the theoretical budget increased 51%, the m\$_n120 increased 50%. The comparison of the average budget of the ten

³ This chart does not gather the data of all the wage categories analysed. It picks the most representative ones. Four categories are omitted.

wage categories and the theoretical budget is also interesting. That is, the average spending of the 49 families surveyed who have the same family structure and that of the four families with the lowest spending. The theoretical budget estimated here represented around 54% of the average budget. When looking at the growth throughout the whole period, the average budget increased 47%.

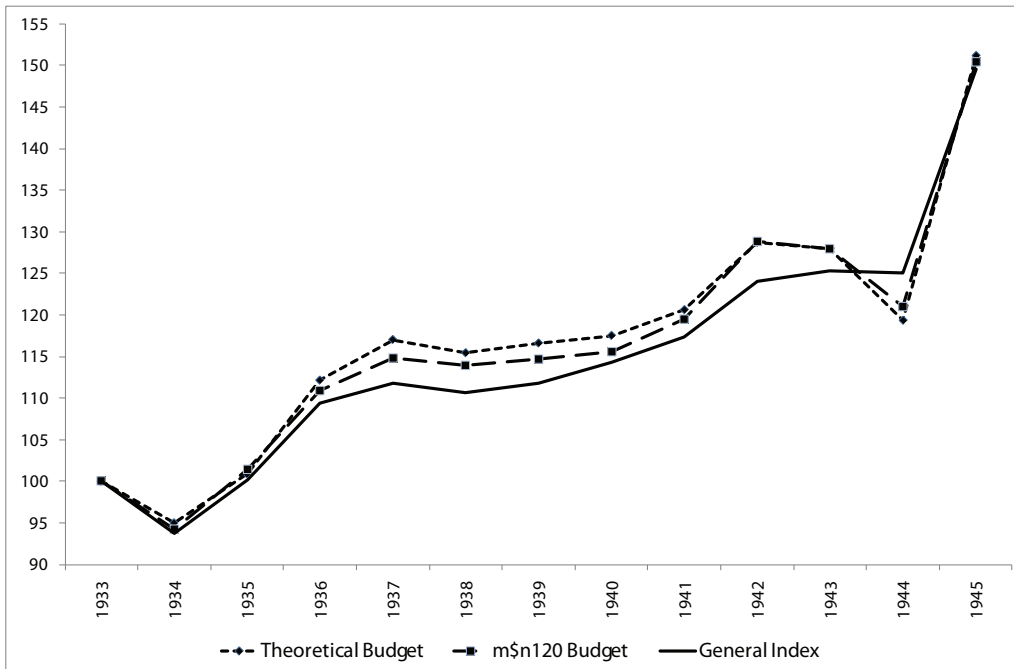
When considering all the budgets, the cost of acquiring the different baskets increased between 45.1% and 52.5%, comparing 1933 and 1945. The lowest bound corresponded to the m\$300 budget, while the upper bound referred to the m\$230 budget. The m\$230 budget was followed by the theoretical budget and then the m\$120 budget. How the last two budgets mentioned rank is an indicator that inflation tends to affect relatively more those that earn a lower income. The discrepancies between groups in the overall increase throughout the period reflected the different shares each component had. Given that rent increased less than food, workers' families had to spend relatively more money to acquire the same goods in 1945 compared to 1933.

The chart also shows an increasing gap between how much each basket cost and the average wage it referred to. The data reflects how much the cost to consume the same basket changed over time. It does not say anything about the feasibility of acquiring it. If wages were not adjusted, the lower wage categories—the families whose head of household was a worker—would have had increasing deficits. This was not the case when considering the families whose head of household was an employee.

As mentioned, there were discrepancies in the budgets of the lowest wage category and the theoretical budget. The following graph compares the growth in the general CLI, the theoretical budget and the m\$120 per month budget between 1933 and 1945.

Graph 3: Growth in the general, theoretical and m\$120 budgets, 1930-1945

Base 1933=100



Sources: My calculations based on DNT (1935; 1937), Dirección Nacional de Estadísticas y Censos (1968), Dirección de Estadística Social (1947), and Secretaría Técnica (1947)

Graph 3 shows the growth trends of the three indices. The three indicators should have had similar trends since they refer to the same group of individuals—the lowest wage earners with the same family structure. According to the three of them, the cost of acquiring the same basket between 1933 and 1945 increased around 50%. Nevertheless, the growth between 1936 and 1944 varied, the gaps in the trends opened and closed. Between those years, the variations in the general index were lower than the variations in the other two, which moved closely together. In 1944, rent decreased substantially and thus the theoretical as well as the m\$120 budgets decreased relatively more, due to the higher weight that rent had in the general index.

The differences with the general index corresponded to the evolution of the clothing component and the stability of the general expenses for almost a decade, both excluded in the theoretical as well as the m\$120 indices. It is worth recalling that the theoretical and the m\$120 budgets considered goods that represented more than 85% of the general CLI. From 1938 to 1944 the clothing module—which represented only a 5.3% of the general CLI—showed a rather large increase. The general expenses component, which had a share in the total budget of 8.2%, was stable for the majority of the period. Apart from the few numbers of cases considered by the DNT to elaborate the theoretical budget—which says a lot about how representative of society as a whole the general CLI was—, these different trends can be considered as an indicator of underestimation of Argentina's CLI during those years.

Different baskets show different trends. The cost of acquiring the same basket increased for all the baskets considered in a rather similar amount—between 45% and 52%. Nevertheless, there were differences in the trends. These discrepancies stand out when comparing the theoretical budget, the m\$120 budget and the general CLI, which should not be significant since they refer to the same group of individuals. Given also the difference between the general CLI and the trend in the average budget of all 49 cases, there is an indication of an underestimation of Argentina's CLI. This can be related to the fact that the base for the general CLI was the budgets of only four families that earned what they spent in the month the survey was carried out.

Conclusions

With José Figuerola as head of the DE of the DNT, Argentine social and labour statistics thrived. This upsurge has to be understood in a wider context that considers the changes the country had been experiencing. The rise in the number of workers generated a need to understand their economic situation. Thus, it is why the main premise behind the budget surveys was that an average budget is the most eloquent proof of the standard of living (Dirección de Estadística Social, 1946), and that such knowledge and the way to deal with it would contribute to maintain social justice (DNT, 1935, p.3). Moreover, Figuerola had the knowledge needed to develop those statistics. The first family budget survey was carried out in October 1933, which became the basis of the CLI developed in that decade. This paper is the first enquiry on how that CLI was methodologically built and has found several pitfalls. The general CLI was a result of a one month survey carried out in October 1933 in the city of Buenos Aires. The survey was very extensive in terms of the income ranges and demographic characteristics of families surveyed, much more than its successors. Nevertheless,

the budget that became the basis of that index solely gathered the preferences of four families with three children under the age of 14 of the lowest wage category that in that month spent what they earned. There was no information about the techniques used to select the families who answered the survey, nor how the narrowing down of the sample was made. The quantities of the goods and services of the theoretical budget were not directly measured. What were measured were the values of the goods and services consumed and quantities were obtained later on. Moreover, how the DE of the DNT arrived at the definite quantities that formed the theoretical budget was not completely specified: issues regarding how the clothing component was estimated, for example, were never addressed. Given Figuerola's qualifications and expertise, questions can be raised as to why the CLI has the previously mentioned pitfalls.

Up until now, the methodology behind the construction of the CLI had not been analysed. Moreover, no studies have been done with all the budgets the 1935 DNT report published. Thus, given the methodological pitfalls found in the construction of the CLI and due to the extremely detailed data, this paper then estimated the costs of acquiring different baskets between 1933 and 1945. Looking at different wage categories, results showed that the cost of acquiring the same basket increased for all the baskets considered in a similar amount—between 45% and 53%. Nevertheless, there were differences in the trends. The general CLI showed discrepancies with the theoretical budget estimated here—which was the basis of the general CLI and it was based on the budgets of those families with the lowest levels of income and expenditure—and with the m\$120 budget—the lowest monthly wage category. Even if the two budgets estimated here did not consider all the goods and services of the general CLI—due mainly to the lack of data—they accounted for around 86% of what the general index considered. The two new estimates showed that prices increased more than what the general CLI showed. The differences amongst these estimates related to the trends of the different components analysed in each index. Also, discrepancies were associated with the amount of budgets considered in each estimate. Given also the difference between the general CLI and the trend in the average budget of all 49 cases, there is an indication of an underestimation of Argentina's CLI. This can be related to the fact that the base for the general CLI was the budgets of only four families.

Thus, this paper suggests that the CLI elaborated by the DNT and based on the theoretical budget was not representative of the Argentine society as a whole, though it was used as such. It only reflected prices and preferences of a certain type of families of the city of Buenos Aires. This generated a geographical as well as a social bias in the CLI. The first bias, which is still a characteristic of the current consumer price index, is not a minor issue. Inhabitants of the city of Buenos Aires have usually had higher incomes and consumption levels. Moreover, the index elaborated in the early 1930s only considered the consumer preferences of four families who lived on a very low wage and spent what they earned on the month the survey was carried out. All this should be revised in order to estimate a more representative index. The advantage of the general CLI remains on the fact that it covered clothing and general expenses, though their share in the total budget was less than 15%. The clothing module was not possible to trace because there is no data on consumption on the detailed budgets. As for general expenses, the consumption was stated but so far no data has been found on prices for these goods. Thus, the first revision of the general CLI hinted at an official underestimation of the price evolution during the period 1933-1945 if one considers a broader sample of families, but a narrower sample of goods and services. Such underestimation would have had an impact on other estimates, such as the standard of living of workers, measured through the real wage.

A higher CLI would show that workers could afford less goods and services. Given their wages, this would have made them poorer thus showing a more deteriorated standard of living.

The publications of the official organisations tried to set the foundations to analyse the standard of living of the Argentine society, especially the working class. This paper proved that the CLI developed with the 1933 survey data was an indicator with specific methodological pitfalls, that only accounted for the behaviour of the poorest segment of society and that might have underestimated the cost of living faced by workers and society as a whole. This paper has contributed to the idea that statistics are a form of knowledge and a source of power, but their usage has to be thought out carefully. Public statistics, specifically, are not only developed for the sake of knowledge, but also to design different types of policies as well as to give support to previous policies or the status quo. This paper was developed on the idea that it is important to consider the context in which statistics are produced and the methodology carried out to gather the information or to develop indicators. Statistics are not the revealed truth; they are an instrument that can help us understand certain phenomena with more accuracy.

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