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ABSTRACT

Latin American Household Budget Surveys 1913-1970 and What They Tell Us about Economic Inequality among Households*

The article reports an analysis of the findings of a search for household budget surveys for Latin America for the period from the earliest surveys to the late 1960s. Over one hundred studies were located. References to these surveys are available at http://www.sussex.ac.uk/globalincomeinequality/. In Appendix 1 we offer a synopsis of the history, context and contents of all the surveys, including those that did not contain useable data. We discuss the comparability of each country's surveys in turn, offering a table for each country with indicator of size, scope and other features. Our final work is to model the progress of inequality, as reflected in Gini coefficients, 90/10 and 50/10 percentile ratios in the region. We find that the bulk of the measured rise is inequality from the 1930s to the 1960s is due to changing survey methods and objectives, in particular the expansion of the scope of the surveys from a narrow focus on urban manual worker-headed households to a later broad focus on the population. Finally, we predict the pattern of inequality over time that might have been found had the earlier surveys been unrestricted in terms of target population and randomly sampled. We find a modest increase from the early years to the 1960s in Gini inequality.

JEL Classification: N36, O15

Keywords: inequality, working households, Latin America, 20th century

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* Funded by ESRC grant ES/L002523/1 'Global Income Inequality, 1880-1960', February 2014–January 2018.

Introduction

The received wisdom among researchers is that there is little extant pre-1960 household survey data from which to estimate household historical income inequality in the countries of Latin America. See, for instance, Table 12, which gives the earliest household level Gini coefficients given by Jain (1975). Jain's paper is the source used by inequality databases, such as the UNU-WIDER database,[1] and it has no household inequality measures for the period before 1960. One of the purposes of this article is to correct that view. For Latin America, significant amounts of surveys exist. There is not the volume of surveys that exists for Europe and North America, where governments and others were carrying out detailed household budget surveys with increasing frequency and sophistication from before the turn of the 20th century. Our research suggests that comparable Latin American household budget surveys first took place in the 1910s for Argentina and mid-1920s for Mexico, followed in the 1930s for the other larger countries of the region. Thus, our analysis falls mainly within the state-led industrialisation period (1920s–1970s), which is the second period of the periodization traditionally used in Latin American economic history.[2]

We have located well over one hundred official, academic and private surveys. A proportion of these latter surveys focus on nutrition rather than income. Where income and expenditure data exists pre-WW2, they are usually far less detailed than in European surveys of the same period. However, expenditure on key food items is sometimes given by income group.

In this region, methodologies developed domestically and with relatively less international statistical co-operation than in Europe and North America. However, from the 1930s onwards, the survey reports begin to refer to their regional counterparts as well as ILO studies. This ILO influence coincides with the changes that existed in the ILO/Latin America relationship at the time.[3] In the late 1940s and 1950s, countries were advised by the UN and

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[1] See https://www.wider.unu.edu/project/wiid-world-income-inequality-database

[2] See Victor Bulmer-Thomas. 2014. *The Economic History of Latin America since Independence*. 3rd ed. Cambridge: Cambridge University Press; André Hofman. 2000. *The economic development of Latin America in the twentieth century*, Cheltenham: Edward Elgar.

[3] For the changes in the ILO/Latin America relationship regarding labour matters, see Ferreras, N.O., 'La misión de Stephen Lawford Childs de 1934: la relación entre la OIT y el Cono Sur', in F. Herrera León and P. Herrera González (eds.), *América Latina y la OIT. Redes, cooperación técnica e institucionalidad social (1919-1950)*, Morelia, 2012, p. 169. An example of the changes in the ILO/Latin America relationship regarding statistics can be found in C.T. Lanata Briones, 'Constructing Public Statistics: The History of the Argentine Cost of Living Index, 1918-1943', PhD Thesis, London School of Economics and Political Science, 2016, pp. 139-40 http://etheses.lse.ac.uk/3319/

the ILO to conduct cost of living surveys in order to develop consumer price indices.[4] Many Latin American countries did so. The influence of the United States is tangible in the survey data, particularly that from the post-war period and that related to agriculture. The US Department of Agricultural Relations and the Institute of Inter-American Affairs each carried out several rural surveys and advised on more.

The structure of this article is as follows. First, there is a summary of the general traits of the region's surveys. This is followed by a discussion of the techniques used in the main contributions to the study of early twentieth century Latin American inequality. Next comes a discussion of issues in the estimation of inequality from historical surveys. We then present summary discussions, country-by-country, of the surveys that allow the estimation of measures of inequality, displaying some inequality measures derived from the recovered data. There follows, after a brief discussion of methodology, an empirical enquiry into two questions. The first question is over the extent to which the general rise in household economic inequality clearly observable in the surveys of the region is due to the evolution of method and scope that took place in our period. We approach answering this question via regression analysis and find that the bulk of the measured growth was due to changes of scope, from urban working class households to much wider target populations. We also use the regression results to predict counterfactual Gini coefficients, estimated as if full-population, randomised survey techniques been employed throughout the period. We confine this to the three large countries with large numbers of surveys: Argentina, Brazil and Mexico. We find that measured inequality would have been higher in the earlier part of our period, especially in Argentina and Brazil and we find a remaining, small but significant rise from the pre WW2 period to the 1960s.

Appendix 1 is a much fuller country-by-country description of the enquiries we have located for Argentina, Brazil, Chile, Colombia and Mexico, as well as a final section on the countries for which we have less comprehensive coverage: Costa Rica, Dominican Republic, El Salvador, Guatemala Honduras, Panama, Paraguay, Peru, Puerto Rica, Uruguay and Venezuela. Appendix 2 summarises our inequality estimation strategy.

[4] See ILO, 'Reports of the Subcommission of Statistical Sampling to the United Nations Statistical Commission: Report of the First Session, 22 to 27 September 1947', Geneva, 1947; ILO, 'International Labour Office Methods of Family Living Studies: Report prepared for the Seventh International Conference of Labour Statisticians', *Studies and Reports*, 17, Geneva, 1949.

1. General idiosyncrasies of the Latin American surveys

Latin American household budget surveys first appear in Argentina in the 1910s and they were focussed upon the working class of the City of Buenos Aires. The other countries followed and all were active by the 1930s. All the early work concentrated on the living standards and cost of living of the urban working class. This focus should perhaps be understood in the context of increasing (mainly state led) industrialisation throughout the region. The main aim of these surveys was the construction and maintenance of cost of living indices that could be used for a number of purposes: as an aid to wage negotiations and the setting of welfare benefits and to generate a better understanding of the standard of living of the emerging working class. In the 1910s and 1920s some Latin American countries (Brazil, Mexico, Peru, Uruguay, for example) started publishing cost of living indices but eschewed surveying and based them on constructed or "theoretical" budgets.

Throughout our period, these irregular enquiries leave us with a patchy data record, over both time and space. Where there was an aim to produce countrywide studies, the constituent regional surveys did not occur simultaneously, but rather in stages, suggesting continuity and the existence of projects within the national statistical systems. For example, Colombia had several surveys throughout the late 1930s and 1940s in different cities/regions. Thus, the comparable data sets that exist are generally for the capital city of the country or the main/biggest city (the latter is the case for Brazil and the City of São Paulo). This seemingly piecemeal approach across the region is likely related to inadequate funding and to relatively de-centralised national statistical systems, as in Argentina.[5] Argentina is the exception to this piecemeal approach to national surveys: Argentinian studies almost exclusively relate to the City of Buenos Aires.[6]

The information gathered in the earlier surveys was mainly expenditures on food and, less frequently, housing, rather than other components of household budgets. The documentation in the reports is also patchy: in many cases the reports do not provide information on household income distribution, or details on the sampling methodology. In the

[5] H. González Bollo, *La fábrica de las cifras oficiales del Estado argentino (1869-1947)*, Buenos Aires, 2014; Lanata Briones, 'Constructing Public Statistics'.
[6] In fact, until recently the national CPI was based on an average budget for the City of Buenos Aires and its surroundings (Greater Buenos Aires).

earlier years, surveys were very small in scale, particularly, though not exclusively, in Mexico and Brazil. On the other hand, there were clear attempts to create continuity across time and space. For instance, reports often cite and make comparison of results with earlier studies.

Another feature of the reports is that, through the 1930s, there is an increasing concern to comply with international standards and terminology, mostly generated by the ILO and its International Conference of Labour Statisticians. Reports also demonstrate a degree of awareness of efforts being made in other countries in the continent. We observe from around 1940 a gradual widening of the scope of the surveys from the urban working class to other workers and non-working households, but less of a widening geographically. In addition, by the 1960s there is a widespread, if not complete, adoption of stratified random sampling.

2. Our study in context

Scholars' concern on income inequality in Latin America is not a novelty. In the 1950s, Latin American Structuralists claimed that productive structures hamper a country's ability to generate and distribute income.[7] More recently, many researchers concerned with Latin America's economic performance have focussed on the relationship between inequality and the region's disappointing long-run development performance.[8] Furthermore, the discovery that the region is the most unequal in the world triggered long-term studies to trace the history and dynamics of that imbalance. In this latter group of studies, a wide range of data to carry out their research, though none use household budget surveys. For example, Williamson[9] merges national account information with other data and in his study of pre 1940 Latin America. He constructs ratios of unskilled wages to GDP per worker for Argentina, Brazil, Colombia, Mexico, Cuba and Uruguay that showed that a structural break in the secular inequality trend

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[7] Celso Furtado. 1959. *Formação Econômica Do Brasil*. Rio de Janeiro: Fundo de Cultura and Raúl Prebisch. 1950. *The Economic Development of Latin America and Its Principal Problems*. Lake Success, New York: Economic Commission for Latin America, United National Department of Economic Affairs.

[8] Just to name a few: Acemoglu D., Johnson, S., Robinson, J.A. 2002. Reversal of fortune: geography and institutions in the making of the modern world income distribution. *Quarterly Journal of Economics* 117(4): 1231–1294; Bértola, L., Castelnovo, C., Rodríguez Weber, J., & Willebald, H. (2010). Between the colonial heritage and the first globalization boom: on income inequality in the Southern Cone. *Revista de Historia Económica* 28: 307–341; Coatsworth, John H. 2008. Inequality, Institutions and Economic Growth in Latin America. *Journal of Latin American Studies* 40 (3):545-69; Engerman S.L., Sokoloff, K.L. 1997. Factor endowments, institutions, and differential paths of growth among new world economies. In *How Latin America Fell Behind? Essays on the Economic Histories of Brazil and Mexico, 1800–1914*, Haber, S. (ed.). Stanford University Press: Stanford: 260–304; Prados de la Escosura L. 2005. Growth, inequality, and poverty in Latin America: historical evidence, controlled conjectures. *Economic History and Institutions Series Working Paper* 05- 41(04), Dpto. de Historia Económica e Instituciones, Universidad Carlos III, Madrid.

[9] Williamson, Jeffrey G. (2002). Land, Labor, and Globalization in the Third World, 1870-1940, *The Journal of Economic History* 62 (1): 55-85.

occurred in the years 1914-1920. Frankema[10] uses wage and economically active population data extracted from statistical and/or industrial yearbooks, population and/or industrial censuses and ILO reports, and combines these with GDP data. Building on Williamson's methodology and extending it to the entire twentieth century, he generates labour income shares for Argentina, Brazil and Mexico. Frankema concludes that labour income shares in the mid-twentieth century were considerably higher in all three countries than around 1920. These shares peaked in the early 1950s in Argentina, the early 1960s in Brazil and the mid-1970s in Mexico.

FitzGerald[11] produces estimates of earnings dispersion for four skill/occupational groups with changing shares in the labour force in Argentina, Brazil, Chile, Colombia, and Mexico over the period 1900–2000, which he then uses to generate Gini coefficients. He concludes that income distribution has not been stable in Latin America over the long run: it deteriorates during the first third of the century, to improve temporarily in the 1930s and steadily for the four decades after 1940. Arroyo Abad and Astorga enhance FitzGerald's methodology.[12] In their study of pre-fiscal earnings in Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela they conclude that the region's inequality trajectory over the nineteenth and twentieth century follows the form of an ‘‘m’’ pattern with peaks around 1880 and the 1990s and a trough around 1920/1930s.

3. Estimating inequality from household expenditure surveys

There are three main challenges in this regard. First, there is the choice of unit of measurement: income, expenditure, per household, *per capita* etc. Where we have individual household-level data, the surveys vary in the range of questions asked of respondents but usually several possibilities exist. Where we have grouped tables, the unit of measurement of the group is what we have to use, most commonly, total household income. Thus, limitations to the available information on household composition affect our choice of the key unit of measurement. Second, there is a set of issues surrounding the creation of parameter estimates

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10 Frankema E. 2010. Reconstructing labor income shares in Argentina, Brazil and Mexico 1870- 2000. *Journal of Iberian and Latin American Economic History* 28 (2): 343-374; Frankema E. 2006. A Theil decomposition of Latin American income distribution in the 20th Century: Inverting the Kuznets Curve?. *Working paper Groningen Growth and Development Centre University of Groningen*.

11 FitzGerald, VFK. 2008. Economic development and fluctuations in earnings inequality in the very long run: the evidence from Latin America 1900-2000. *Journal of International Development* 20: 1028-1048.

12 Arroyo Abad, L., Astorga, P. 2017. Latin American earnings inequality in the long run. *Cliometrica*, 11(3): 349-374. In another study, Astorga focuses on the period 1900-2011 using the same methodology; see Astorga, P. 2017. Functional Inequality in Latin America: News from the Twentieth Century. In Bértola L., Williamson J. (eds) *Has Latin American Inequality Changed Direction?*. Springer: Cham, 17-41.

from income-grouped tables. Third, for estimates derived from either grouped tables or individual-level data, there is the question of population representativeness of the samples, and the possible adjustments that can be made. Here we take a regression approach by treating the sampling characteristics of a survey as explanatory variables in regression seeking to explain differences between survey inequality measures. This is further discussed below. Here we discuss the first two challenges.

In most cases where we rely on grouped tables, households are grouped by total household income. There are cases where we have tables giving averages for households that are grouped by *per capita* or equivalised incomes or expenditures. For instance, the 1933 Argentinian survey, see below, presents results grouped by equivalised incomes. For grouped data, there are various existing ways of estimating measures of inequality. Perhaps the simplest and certainly the best-known method is to employ Chen, Datt and Ravallion's Povcal[13] software which is designed to estimate poverty and inequality from grouped statistics via the estimation of General Quadratic and Beta Lorenz curves, originally formulated by Villasenor and Arnold (1984, 1989) and Kakwani (1980), respectively.

This approach, however, has its downside for our study, since the Gini coefficient is Povcal's sole distributional statistic and this is very restrictive in terms of inequality measurement. So instead, we programmed our own suite of methods. Gutierrez Rufrancos and Newell (2017) describes and tests these methods, and results are summarised in Appendix 2. There is a range of good methods. However, previous experimentation on historical European data, suggest that for comparative and analytical work, the choice is not important (Gazeley et. al., 2018). Here, for simplicity we simply report the averages of three methods: Naïve interpolation and the parametric methods that employ Lognorrmal and Kakwani's Beta-Lorenz approach (Kakwani, 1980).

[13] http://go.worldbank.org/YMRH2NT5V0

4. Country summaries

The discussion in Appendix 1 gives bibliographical and methodological details of the surveys and the published data from which we construct indicative measures of inequality. We consider our main countries alphabetically.

For Argentina, all the pre-1940 surveys we report in Table 1 were undertaken and reported by the *Departamento Nacional del Trabajo* (DNT) and they focussed entirely upon the City of Buenos Aires, and almost all concentrated upon the urban working class, the exception being the 1933 survey that also included some households headed by white-collar workers. Thoughout the period the desire to sample mainly households containing nuclear families put clear demographic limitations on the samples. For these surveys, measures of household income/expenditure inequality are predictably low, and rise for 1933 when white-collar workers are included, though non-nuclear households are excluded. Sampling methods are not generally recorded, but it is likely that they were carried out by either some form of snowball sampling or self-selection in response to advertised calls.

By 1960, responsibility for household budget surveys had moved to other national agencies, in particular the *Dirección Nacional de Estadística y Censos*. The survey reports indicate that stratified random sampling had been adopted by 1960 at the latest. As can be seen in Table 1, many of the 1960s surveys are limited to cities, in particular but not only, the City of Buenos Aires. Some of the surveys also put demographical or occupational limits on the samples. The data in the table suggest strongly that these limitations reduce measured inequality.

Table 1 about here

The 1934 City of São Paolo study is the earliest household budget survey for Brazil, as far as we can establish. The report claims that this sample represents conditions among the better-paid part of the working classes. All the surveys, except those of the Getúlio Vargas Foundation, see below, are urban in focus. All up to 1954 are focussed upon working class households and many of these are restricted to particular groups of workers, see our appendix discussions. Early Brazilian survey designers tended not to limit the demographic focus of their surveys, unlike their Argentinian counterparts. Perhaps as a consequence, we do not find the very low levels of estimated inequality that we found in the early Argentinian surveys. Note the lowest Gini we report is for the 1937 survey that did restrict itself to ‘typical’, i.e. nuclear families.

Perhaps understandably given Brazil’s huge size, logistical and financial constraints seem to have restricted the geographical scope of many of the surveys. The surveys around 1961 and 1962 need explanation. As discussed in Appendix 1, the *Instituto Brasileiro de Economia* of the *Getúlio Vargas Foundation* conducted a set of surveys in this period. The first 1961 survey in Table 1, with a sample of 9121, is the combination of all these surveys and is the most comprehensive in the set. The Instituto’s first survey was of major conurbations with a sample size of 4625, and that is the 2nd 1961 survey in table 2. This was followed in 1962 by two surveys, a survey of 2684 households in smaller towns and cities in the regions of the larger cities and a rural survey of 1813 households. This is the only survey that covers rural Brazil. Table 2 also separately reports this later pair of surveys.

Tables 2 and 3 here

These three surveys in Table 3 are the only Chilean studies for which the reports provide sufficient statistics to allow the estimation of income inequality. The 1942 survey is reportedly restricted to working class nuclear households but covers rural and urban regions. The 1956 and 1965 surveys are urban, but include middle class as well as working class households. We can see here again how these occupational and demographical restrictions see to generate lower inequality measures.

The Colombian surveys reported in Table 4 are mostly urban, but not all are taken in the big cities. The two surveys of quite small towns in 1945 both feature relatively low inequality. All interview households headed by working class, that is, manual workers, but some also include middle class/non-manual worker headed households. By contrast, the Mexican surveys of Table 5 might be simply thought of as dividing into two distinct eras the sequence of smaller surveys prior to the mid-1950s show a greater concern to reflect the costs of living in rural areas as well as the urban centres. The surveys of 1924, 1939 and 1941all include households of rural workers, whereas those of 1931, 1934 and 1938 are studies of city-dwellers. Almost all the surveys from 1956 are very large, nationally representative surveys, the exception being the 1960 survey that is an enquiry into urban households. Interestingly, the Gini coefficients for the 1941 and 1956 surveys are quite similar. In addition, these results suggest the mid-1960s was an era of higher inequality in Mexico.

Tables 4 and 5 around here

Perhaps because of its status as an unincorporated US territory, stratified random sampling was adopted quite early in Puerto Rico. The first such survey was in 1941. Of the five earlier surveys in Table 6, four were specifically rural or farm surveys. Several were concerned with plantation workers for specific crops and one was concerned with own-account farmers. As soon as the new technology was adopted, and, consequently, surveys became larger, measured inequality was much higher, as we have already noted in discussion of other countries.

Tables 6 and 7 around here

Venezuelan surveys are given in Table 7. Surveys in the period 1939-1961 are all limited in region. The 1939, 1945 and 1960 surveys all relate to Caracas, while the 1945 survey is limited to a single region. The 1961 survey took place in the mountain city of Merida. Later surveys had wider geographical reach. Lastly, in Table 8 we summarise the surveys we have for other countries in the region. The great majority are surveys taken in the capital city, of in the capital city plus a few other cities. The exceptions are the large 1966 survey for Guatemala, which is a rural survey, the Honduran survey that covers bother rural and urban areas, and the Uruguayan survey, about which we know very little.

Table 8 about here.

Graph 1 and Table 9 summarise these observations. In Graph 1 we can see how measured Gini inequality grows over time across the region, as does its variance. The two most obvious reasons for this growth are the switch to stratified random sampling and the widening of the scope of the surveys away from an initial concern with urban manual worker's families. These trends are clearly illustrated in Table 9.

Graph 1 and Table 9 about here.

So far, we have made it clear that the diversity of geography, sampling method and scope of these surveys makes it dangerous to try to infer anything about the time path of inequality. Nevertheless, it is worth asking if the any generalisations can be made, and what they tell us, in this important set of countries.

5. Analysing and estimating time-consistent inequality

In this section, having previously established an important and rich historical record, we ask and provide answers to two big questions. First, is the upward trend in measured inequality in the region entirely due to the changes in scope and method of the household surveys over our period? Our second question stems from the way we attempt to answer the first. We ask and answer what counterfactual Gini inequality coefficients might have been, had there not been some much change in method and scope.

We approach the first question by exploiting our knowledge of the characteristics of the surveys. We create indicator variables for: the method of the enquiry, where known; the geographic focus, where urban and/or rural and whether national or regional; the occupational scope, that is, if manual workers, non-manual workers, and non-working households are included; and finally if we know that particular demographic household structures were targeted. We then take three dependent variables from the average data presented in Tables 1 to 8: the Gini coefficient, and the 90/10 and 50/10 percentile ratios and regress each on the indicator variables for method, geography, occupation and household demography.

We also include a temporal measure in the regressions. We report results for regressions where we include the start year of the enquiry. We experimented with other possibilities, particularly decade indicator variables, and the results were very similar. An important point is that we do not have enough observations for most countries to be able to estimate different time paths country-by-country, so our discussion of trends are only of those that are common across the region. Finally, country indicator variables are included throughout. We report a set of results in Table 10. For each inequality statistic, we report two regressions, one without the occupational scope variables and one with them. This is because initial experimentation made it clear that these were the critical controls; their inclusion, and only their inclusion, rendered the start year variable conventionally insignificant and much smaller.

Perhaps because of the diversity of the surveys in this collection, not much else is conventionally significant. The default indicator for sampling method is ‘unknown’ which of course must include stratified random sampling, snowball sampling, self-selection and so on, and so it is perhaps not surprising that known methods do not look very different to that default. In addition, the inclusion of broad occupational groups may be a characteristic of surveys featuring random sampling, so that controls for the social breadth of the survey might help to render insignificant our imperfect sampling method control. : Our geographical indicator variables, though mostly not conventionally significant, attract plausible coefficients.

This set of experiments suggests that a key reason for the higher levels on inequality is the expansion of the scope of enquiries from an early focus on urban manual workers' households to a broader target of enquiry by the 1960s. Finally, we turn to our second question: what might counterfactual inequality have looked like had the same sampling techniques been applied to the same target populations at the beginning and end of our range of years? The results are given for early and later periods in three countries where there are a large number of surveys: Argentina, Brazil and Mexico. We make regression predictions exploiting coefficients from Table 10, column (2), and assuming random sampling of a population unrestricted by geography, occupation or demography. We collect the results in Table 11. The main impact of the predictions is to raise inequality especially for the earlier periods in Brazil and Argentina where, in particular, the target populations were highly restrictive. However, there remains a smaller, but potentially important, predicted rise of inequality to the 1960s in all three countries.

Conclusions

The article reports on three activities. First, we report our discovery of a large number of household budget surveys for Latin America for a period from before the First World War until the late 1960s. This period is generally seen being one in which there was no significant household survey activity in Latin American countries. We show that this view is mis-informed. The data in these surveys are often reported in grouped tables and this limits but does not eliminate the usefulness of these surveys for a number of social scientific enquiries. We find that for Argentina, Brazil, Colombia and Mexico, in particular, the historical record of household survey enquiry is quite extensive. References to these surveys, their documentation, if available, and some of the summary statistics we have derived from them is available to researchers at http://www.sussex.ac.uk/globalincomeinequality/ . In Appendix 1 we offer a synopsis of the history, context and contents of all the surveys, including those that did not contain useable data.

Secondly, we discuss the comparability of the surveys for each country in turn, offering a table for each country with indicator of size, scope and other features. Our final work is to model the progress of inequality, as reflected in Gini coefficients, 90/10 and 50/10 percentile ratios in the region.   We find that the bulk of the measured rise is inequality from the 1930s to the 1960s is due to changing survey methods and objectives, in particular the expansion of the scope of the surveys from a narrow focus on urban manual worker-headed households to a later broad focus on the population. Finally, we predict the pattern of inequality over time that might have been found had the earlier surveys been unrestricted in terms of target population and randomly sampled. We find a modest in increase from the early years to the 1960s in Gini inequality.

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Table 1 Selected Argentinian working household budget surveys, 1913-1969

Year	*1913*	*1914*	*1923*	*1924*	*1925*	*1926*	*1928*	*1929*
Sample size	221	156	123	360	1000	700	1198	680
Method	0	0	0	0	0	0	0	0
Limitations	DGO	DGO	DGO	DGO	DGO	DGO	DGO	DGO
Gini	0.160	0.141	0.175	0.135	0.169	0.154	0.166	0.181
90/10	1.358	1.410	1.756	1.356	1.577	1.582	1.608	1.751
50/10	1.185	1.152	1.372	1.179	1.255	1.293	1.277	1.287
Year	*1933*	*1960*	*1963*	*1965*	*1966*	*1966*	*1969*	
Sample size	308	1419	3514	2022	211	354	1350	
Method	2	1	1	1	1	1	1	
Limitations	DG	DG	None*	G*	DG	DG	GO	
Gini	0.262	0.262	0.355	0.333	0.196	0.175	0.349	
90/10	2.468	2.829	3.903	3.893	1.718	1.555	5.938	
50/10	1.487	1.802	1.810	1.930	1.331	1.166	2.599	

Key. Method: 0 = unknown, 1 = stratified random sampling, 2 = other. Limitations: O = occupational, G =Geographical, D= demographical, * = whole population. The Gini coefficient and 90/10 and 50/10 decile ratios are averages of estimates from three methods: 'naïve' interpolation, lognormal and Kakwani's Beta Lorenz method, see Appendix 2.

Table 2 Selected Brazilian household budget surveys, 1934-1967

Year	*1934*	*1936*	*1937*	*1941*	*1943*	*1948*	*1954*	*1961*
Sample size	221	306	271	165	54	396	925	9121
Method	1	0	0	1	0	2	1	1
Limitations	GO	GO	DGO	GO	GO	GO	GO	*
Gini	0.282	0.236	0.227	0.245	0.272	0.368	0.266	0.418
90/10	3.105	2.194	2.263	2.709	2.750	4.902	2.681	6.631
50/10	1.754	1.370	1.672	1.404	1.470	2.399	1.931	2.206
Year	*1961*	*1961*	*1962*	*1962*	*1962*	*1967*	*1967*	
Sample size	4625	800	2684	327	1813	2430	3578	
Method	1	1	1	2	1	0	1	
Limitations	G	GO	G*	G*	G*	G*	G*	
Gini	0.411	0.289	0.395	0.286	0.470	0.383	0.392	
90/10	5.767	3.185	5.770	3.796	7.217	5.782	5.526	
50/10	2.414	1.616	2.382	2.965	2.021	2.449	2.173	

Key. Method: 0 = unknown, 1 = stratified random sampling, 2 = other. Limitations: O = occupational, G =Geographical, D= demographical, * = whole population The Gini coefficient and 90/10 and 50/10 decile ratios are averages of estimates from three methods: 'naïve' interpolation, lognormal and Kakwani's Beta Lorenz method, see Appendix 2.

Table 3 Selected Chilean household budget surveys, 1942-1965

Year	*1942*	*1956*	*1965*
Sample size	286	885	431
Method	1	1	1
Limitations	DO	G	G
Gini	0.171	0.359	0.398
90/10	2.196	4.641	5.074
50/10	2.161	2.153	2.153

Key. Method: 0 = unknown, 1 = stratified random sampling, 2 = other. Limitations: O = occupational, G =Geographical, D= demographical, * = whole population. The Gini coefficient and 90/10 and 50/10 decile ratios are averages of estimates from three methods: 'naïve' interpolation, lognormal and Kakwani's Beta Lorenz method, see Appendix 2.

Table 4 Selected Colombian household budget surveys, 1936-1967

Year	*1936*	*1938*	*1939*	*1940*	*1945*
Sample size	225	201	279	53	112
Method	0	0	0	0	0
Limitations	G	GO	DGO	GO	GO
Gini	0.260	0.237	0.260	0.245	0.195
90/10	3.320	2.501	3.397	2.358	2.980
50/10	1.794	1.612	1.883	1.527	2.022
Year	*1945*	*1946*	*1947*	*1953*	*1967*
Sample size	88	418	270	1473	2949
Method	0	0	0	1	1
Limitations	GO	GO	GO	DG	G
Gini	0.199	0.261	0.261	0.273	0.176
90/10	2.121	3.028	2.892	2.865	1.803
50/10	1.447	1.792	1.683	1.797	1.283

Key. Method: 0 = unknown, 1 = stratified random sampling, 2 = other. Limitations: O = occupational, G =Geographical, D= demographical, * = whole population. The Gini coefficient and 90/10 and 50/10 decile ratios are averages of estimates from three methods: 'naïve' interpolation, lognormal and Kakwani's Beta Lorenz method, see Appendix 2.

Table 5 Selected Mexican household surveys 1924-1969

Year	*1924*	*1931*	*1934*	*1938*	*1939*	*1941*
Sample size	unknown	1944	281	86	328	3205
Method	0	2	2	2	0	0
Limitations	DO	GO	DGO	GO	GO	GO
Gini	0.384	0.268	0.259	0.257	0.258	0.429
90/10	6.204	2.806	3.580	3.363	3.353	10.978
50/10	2.329	1.445	2.102	2.254	2.114	1.351
Year	*1956*	*1958*	*1960*	*1963*	*1968*	*1969*
Sample size	5.8m	7.9m	1.7m	7.3m	8151	194
Method	1	1	1	1	1	2
Limitations	*	*	G*	*	*	GO
Gini	0.415	0.406	0.409	0.475	0.457	0.177
90/10	6.908	4.636	7.414	7.555	7.453	1.686
50/10	2.503	1.957	2.730	2.489	2.675	1.334

Key. Method: 0 = unknown, 1 = stratified random sampling, 2 = other. Limitations: O = occupational, G =Geographical, D= demographical, * = whole population The Gini coefficient and 90/10 and 50/10 decile ratios are averages of estimates from three methods: 'naïve' interpolation, lognormal and Kakwani's Beta Lorenz method, see Appendix 2.

Table 6 Selected Household budget surveys in Puerto Rico, 1936-1963

Year	*1936*	*1937*	*1937*	*1938*	*1939*
Sample size	745	3069	5073	1901	439
Method	0	2	0	0	0
Limitations	GO	GO	GO	?	?
Gini	0.165	0.239	0.388	0.321	0.297
90/10	1.710	2.796	6.256	4.411	4.181
50/10	1.174	1.468	2.104	1.817	2.404
Year	*1941*	*1946*	*1952*	*1953*	*1963*
Sample size	4999	1044	786	2545	223000
Method	1	1	1	1	1
Limitations	O	*	*	*	*
Gini	0.414	0.424	0.269	0.397	0.296
90/10	9.83	5.122	2.718	4.823	3.997
50/10	4.305	2.318	1.734	2.179	2.264

Key. Method: 0 = unknown, 1 = stratified random sampling,; 2 = other. Limitations: O = occupational, G =Geographical, D= demographical, * = whole population. The Gini coefficient and 90/10 and 50/10 decile ratios are averages of estimates from three methods: 'naïve' interpolation, lognormal and Kakwani's Beta Lorenz method, see Appendix 2.

Table 7 Selected Venezuelan Household budget surveys, 1939-1968

Year	*1939*	*1945*	*1945*	*1960*
Sample Size	362	111	2867	878
Method	2	0	0	1
Limitations	GO	GO	GO	GO
Gini	0.279	0.216	0.323	0.282
90/10	2.743	2.719	3.758	3.091
50/10	1.489	2.092	1.969	1.674
Year	*1961*	*1962*	*1967*	*1968*
Sample Size	148	3697	1262	350
Method	0	0	1	1
Limitations	G	?	G	G
Gini	0.385	0.433	0.349	0.409
90/10	4.876	7.275	3.835	6.864
50/10	1.909	2.566	1.698	2.574

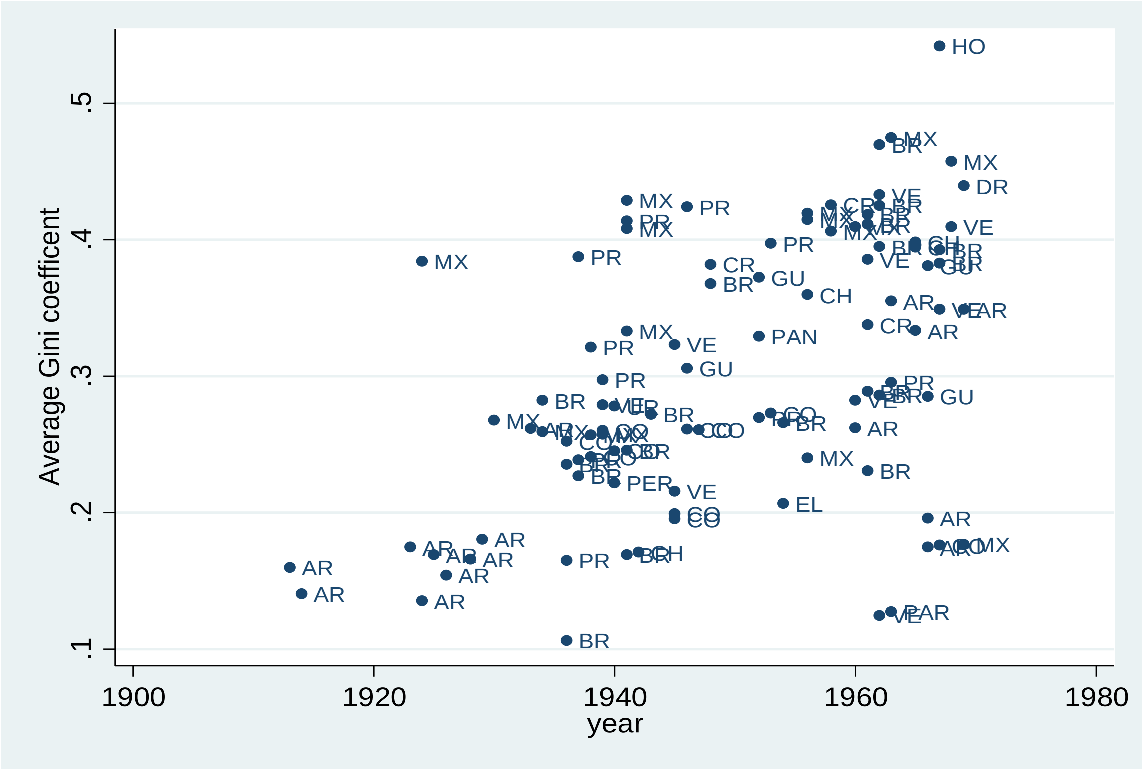
Key. Method: 0 = unknown, 1 = stratified random sampling,; 2 = other. Limitations: O = occupational, G =Geographical, D= demographical, * = whole population. The Gini coefficient and 90/10 and 50/10 decile ratios are averages of estimates from three methods: 'naïve' interpolation, lognormal and Kakwani's Beta Lorenz method, see Appendix 2.

Table 8 Selected Latin American household budget surveys, various countries, 1940-1969

Country	Costa Rica	Costa Rica	Costa Rica	Guatemala	Guatemala	Guatemala	Guatemala
Year	1948	1958	1961	1946	1952	1966	1966
Sample size	258	1922	483	179	776	1759	2300
Method	2	1	0	0	0	1	1
Limitations	G	G	G	G	DG	G	G
Gini	0.382	0.425	0.338	0.306	0.372	0.285	0.381
90/10	4.111	8.226	1.831	3.814	6.246	2.822	4.740
50/10	1.972	2.529	1.750	1.816	3.028	1.540	1.941
Country	Dominican Republic	El Salvador	Honduras	Panama	Paraguay	Peru	Uruguay
Year	1969	1954	1967	1952	1963	1940	1940
Sample size	552	300	1760	449	671	81	353
Method	1	1	1	1	1	0	0
limitations	G	DGO	*	DG	G	GO	?
Gini	0.439	0.207	0.542	0.329	0.127	0.222	0.278
90/10	6.023	1.930	11.771	4.108	1.383	2.175	3.147
50/10	2.160	1.371	2.326	1.911	1.239	1.443	1.493

Key. Method: 0 = unknown, 1 = stratified random sampling,; 2 = other. Limitations: O = occupational, G =Geographical, D= demographical, * = whole population. The Gini coefficient and 90/10 and 50/10 decile ratios are averages of estimates from three methods: 'naïve' interpolation, lognormal and Kakwani's Beta Lorenz method, see Appendix 2.

Graph 1. The historical record. Estimated Gini coefficients from Latin American household budget studies 1913-1969



Key. AR =Argentina, BR = Brazil, CH = Chile, CO = Colombia, CR = Costa Rica, DR = Dominican Republic, EL = El Salvador, GU = Guatemala, HO = Honduras, MX= Mexico, PAN= Panama, PAR = Paraguay, PER = Peru, PR = Puerto Rico, UR = Uruguay, VE = Venezuela.

Table 9 Latin American household budget studies: trends in methods and in scope 1913-1969

	Pre-1940	*1940-1960*	*Post-1960*	*Total*
Sampling				
Unknown	19	13	4	36
Stratified random	1	15	26	42
Other	6	2	2	10
Total	*26*	*30*	*32*	*88*
Non-manual households included?				
Yes	5	16	25	46
No	20	12	7	37
Total	*25*	*28*	*32*	*85*

See text for discussion

Table 10 Explaining the rise in measured inequality.

Dependent variable:	*Gini*	*Gini*	*90/10*	*90/10*	*90/50*	*90/50*
	(1)	(2)	(3)	(4)	(5)	(6)
Year initiated	0.003***	0.001	0.036*	0.001	0.012**	0.007
Sampling (default: unknown)						
Randomised	-0.013	-0.003	-0.027	0.140	-0.061	-0.034
Other	-0.023	-0.021	-0.900	-0.889	0.035	0.054
Geography						
Rural	0.043	0.041	2.53***	2.51***	0.26	0.23
Urban	0.054	0.047	2.35**	2.35**	0.35	0.31
Restricted	-0.042	0.021	0.318	1.53	-0.043	-0.24
Households included						
Restricted demography		-0.034		-0.497		0.132
Non-manual workers		0.049**		0.57		0.089
Non-working		0.076**		1.66*		0.43*
R^2	0.49	0.60	0.44	0.50	0.32	0.35
N	87	85	87	85	87	85
Country controls?	Yes	Yes	Yes	Yes	Yes	Yes

Method of estimation: OLS.conventional significance levels: ***, 1%; **, 5%; *, 10%.

Table 11. Estimated actual and regression predictions of Gini coefficients, Argentina, Brazil and Mexico.

	Mean estimated Gini	Regression predicted Gini
Argentina 1920s	0.171	0.357
Argentina 1960s	0.278	0.383
Brazil 1930s and 1940s	0.266	0.404
Brazil 1960s	0.370	0.425
Mexico 1930s and 1940s	0.373	0.421
Mexico 1960s	0.379	0.443

The mean estimated Gini is the mean of the relevant Ginis in the country tables. The regression predicted Gini is the Gini coefficient predicted from Table 10 column (2) for each country and time period under the assumption of randomised sampling unrestricted by geography, demography or occupation.

Table12: The earliest Latin American household Gini coefficients given by Jain (1975)

Argentina	61NL 0.4375	61NAG 0.4204	61AG 0.3549	63URB 0.5082
Chile	68NL 0.4658	68URB 0.4269	68RUR 0.4210	
Costa Rica	61NL 0.5207	61NAG 0.4364	61AG 0.3481	
Dominican Republic	69URB 0.4728			
Guatemala	66RUR 0.2996			
Honduras	67-8NL 0.7340/0.6611	67-8URB 0.4874	67-8RUR 0.4681	
Mexico	63NL 0.5793/0.5393	67-8NL 0.5243	68NL 0.6106	69NL 0.5827
Panama	62URB 0.3609			
Puerto Rico	63NL 0.4526	63NAG 0.4464	63RUR 0.4236	
Uruguay	67NL 0.4279			
Venezuela	62NL 0.5445	62URB 0.4647	62RUR 0.4394	

Each cell contains a code over a Gini coefficient. The code is the last two digits of the year, so, for instance '61' refers to 1961, followed by a letter code: NL= National, NAG = non-agricultural, AG = agricultural, URB = urban, RUR = rural. Where two numbers are separated by a forward slash, this signifies two or more estimates from the same source data with the highest and lowest given here.

Appendix 1.

Historical household expenditure surveys in Latin America[1]

ARGENTINA

Table A1 Argentina

Year	*1913*	*1914*	*1919*	*1922*	*1923*	*1924*	*1925*	*1926*	*1928*	*1929*	*1933*	*1935*
Sample size	221	156	84	110	123	360	1000	700	1198	680	308	887
Duration	1 y	1 y	1 y	1 y	1 y	1 y	1 y	1 y	1 y	1 y	1 m	1 y
Region	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA
Scope	W	W	W	W	W	W	W	W	W	W	W, E	W
Year	*1936/7*	*1936/7*	*1941*	*1943*	*1943*	*1960*	*1963*	*1965*	*1966/7*	*1966/7*	*1969/70*	
Sample size	600	?	250	933	18795	1419	3514	2022	354	211	1790	
Duration	1m	?	1m	1m	3m	1y	2m	1w	1y	1y	1y	
Region	BA	N	BA	CBA	BA	BA	N	BA	CBA	MZA	BA	
scope	W	?	?	W	W	W	ALL	?	W, E	W, E	W	

Key. Regions: BA= Buenos Aires City, CBA=Cordoba City, MZA=Mendoza City, N=National. Scope: W=workers, E=Employees

Official household budget surveys began in the early 1910s, five years after the National Labour Department (*Departamento Nacional de Trabajo*, DNT) was created in 1907.[2] They were established by Alejandro E. Bunge, who was head of the Statistical Division of the DNT when the first two (1913 and 1914) were carried out. His methodology and procedures were reproduced until the 1930s.[3] There was clearly continuity between these surveys throughout the whole period since the DNT focused its research on working class families of the City of Buenos Aires. However, there was an increasing 'improvement' because the budget was more and more detailed and there was more explanation on the methodology followed. Also, there was an increasing reduction in the type of household surveyed: from working class households as a whole, to just those of a certain characteristic.

The surveys left the sphere of the DNT in the 1960s, when they began to be taken by the national statistical agency. This change has to be understood in the context of the initial de-centralised Argentine national statistical system (from its origins in the mid-1800s to the

[1] This appendix is mostly the work of Rose Holmes, Cecilia Lanata Briones and Hector Gutierrez Rufrancos

[2] Working class families, however, were studied by different Argentine academics, like Juan Bialet Massé, José Ingenieros and Juan Alsina, from the turn of the century. Their works were qualitative rather than quantitative, see H. González Bollo, 'Ciencias social y sociografía estatal. Tras el estudio de la familia obrera porteña, 1899-1932', *Estudios Sociales*, 16, 1999, 20-2.

[3] Bunge, an Argentine but German-trained engineer, 'revolutionised' Argentine statistics, see H. González Bollo, *La teodicea estadística de Alejandro E. Bunge (1880-1943)*, Buenos Aires, 2012; Lanata Briones, 'Constructing Public Statistics'.

1940s), which became much more vertical and centralised as the state became an important player in planning the economy, particularly in the 1960s.[4]

All the surveys focused on working class families. The great majority of them were only for the City of Buenos Aires and its surroundings. The first group of surveys (1913-1929) were mainly to enhance the knowledge of the living conditions of the working class. Only the first two of that group were used to generate the basis of a cost of living index that according to Bunge was needed to estimate the purchasing power of the Argentine currency. The DNT surveys of the 1930s, 1940s and the 1960 one had the main purpose to be used to generate/update the cost of living index for wage adjustment purposes.

We have identified 18 surveys for our period (and some that fall right after it). However, not all of them give income per household. However, there are surveys with income data in the pre-World War I period, the 1920s, the early 1930s and the 1960s.

1913 to 1929

The DNT carried out ten surveys, one in each of the following years:1913, 1914, 1919, 1922, 1923, 1924, 1925, 1926, 1928 and 1929. Relative to other Latin American countries and other Argentine surveys, the advantage of this series of DNT surveys is the same methodology was used in all and the reports present the results in a consistent way. They followed the methodology established by Bunge, who worked on the first two. Unfortunately, little information exists about how these enquiries were undertake. The reports mainly focus on the actual numbers with a little analysis and provide virtually no information on the methodology. Generally, the families surveyed were only from what the DNT defined as working class neighbourhoods of the City of Buenos Aires.

Whilst the data of the first two surveys was combined and used by Bunge to generate a cost of living index,[5] the information provided by the others was not used to update the basket.[6]

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[4] See E. M. Cuesta, 'El Costo de Nivel de Vida en la Capital Federal de 1963 y los cambios de paradigmas estadísticos en Argentina', *Estadística y Sociedad*, 4, 2016, pp. 93-108; C. Daniel, 'El Estado argentino y sus estadísticas. El derrotero de un largo proceso de institucionalización (1864-1968)', *Illapa, Revista Latinoamericana de Ciencias Sociales*, 2:5, 2009, pp. 151-173; C. Daniel 'Estadísticas sociales para el proyecto desarrollista. Notas para su estudio', paper presented at the X Jornadas de Sociología de la UBA, Buenos Aires, 2013; González Bollo, *La fábrica de las cifras oficiales*.

[5] A.E. Bunge, 'Costo de la vida en la Argentina, de 1910 a 1917', *Revista de Economía Argentina*, 1:1, 1918, pp. 39-63; Dirección General de Estadística de la Nación, *El costo de la vida y el poder de compra de la moneda,* Buenos Aires, 1924.

[6] Despite the misleading change in the weights done in the 1920s, see Lanata Briones, 'Constructing Public Statistics', pp. 112-7.

The general aim of the surveys was to understand the incomes and the annual expenditure budgets of working class families as well as their living conditions.

The form used to collect data suggests that information was gathered in an aggregated way. It asked about the earnings per day, per month and per year of each member of the household to then generate a figure on the total income earned by the family. The form had columns to fill on the expenditure per month and per year of several categories, for example food, clothing, rent, transport, education, insurance, furnishing, and healthcare. However, data was presented in just three items: food, rent and other expenditure. It also asked about general demographic characteristics of each member of the household.[7] The data is presented in an annual format and refer to the whole year. But it is likely that information referring to a shorter period was annualised. There was obvious limit on a particular type of demographic household to be surveyed. As the table 1 shows, sample sizes increased substantially after 1923.

In the reports statistics are presented as the yearly averages of income and expenditure of by household size. We do not have the reports for the 1919 and 1922 surveys. There is a publication of 1919 statistics that is on the project database, but the information is not presented in the usual format the others follow.[8] The article that presents the 1923 survey numbers does not reference the 1919 enquiry and says that only four surveys have been taken so far (1913, 1914, 1922 and 1923).[9]

1933

In October 1933, the Statistical Division of the DNT then headed by José Figuerola carried out a household survey with the aim to get the information necessary to generate a cost of living index, but also to collect information on the living conditions of the rapidly emerging urban working class of the period. This enquiry was part of the administration's plan to revitalise the Argentine statistical system and improve understanding of working class living standards.[10] It claimed to follow the guidelines set by the ILO's International Conference of Labour Statisticians. Whilst almost 6,000 questionnaires were distributed, only 308 were used to

[7] *Boletín del Departamento Nacional del Trabajo*, 'Anuario estadístico del trabajo. Año 1913', 30, 1915, pp. 136-7.
[8] *Crónica Mensual del Departamento Nacional del Trabajo*, 'Presupuestos obreros', 3:32, 1920, pp. 507-509.
[9] *Crónica Mensual del Departamento Nacional del Trabajo*, 'Recursos, gastos y vivienda de la familia obrera', 7:17, 1924, p. 1390.
[10] Lanata Briones, 'Constructing Public Statistics', pp. 227-8.

generate the budget used as basis of the cost of living index.[11] Why this narrowing down of the number of budgets occurred in unknown.[12]

Working class and employee families were surveyed, focusing on those whose head of household earned between m$n120 and m$n500 per month.[13] Only traditional families were considered, that is, just those composed by parents and their children. No limit was set regarding the number of children.

The official report that released the results of this survey has individual expenditure data for the 308 households. The initial aim of the survey is that there was to collect equal numbers household in each cell of a household income-household size grid. As already stated it is not clear why only 308 households feature in the report.[14] Lanata Briones (op. cit.) argues that the distribution of the sample somewhat follows the results from the 1936 census of the City of Buenos Aires.[15]

1935

Figuerola knew that the 1933 survey had weaknesses, mainly that because it was a monthly survey it lacked accurate information on clothing.[16] A survey covering a whole year of expenditure was carried out throughout 1935 to update and make the weights of the cost of living index more accurate. This annual survey complemented the 1933 one. Unlike its predecessor, it simply focused on working class families whose head of household earned between m$n115 and m$n135 and were formed by a couple with three children under the age of 14, surveying 887 households. Also unlike its predecessor, only an aggregated budget was published. Once again, the information on the sampling method used is not clear. Like the 1933 survey, it followed the guidelines set by the ILO's International Conference of Labour Statisticians.

1936-1937

This was a survey of 600 working class (white collar and blue collar) families of the City of Buenos Aires that gathered information on incomes, expenditures, housing, literacy, health,

[11] Departamento Nacional de Trabajo, 'Costo de la Vida. Presupuestos familiares. Precios de artículos de primera necesidad. Índices del costo de la vida,' *Investigaciones Especiales. Serie C,* 1, 1935.
[12] Lanata Briones, 'Constructing Public Statistics', pp. 173-5.
[13] m$n refers to the *peso moneda nacional*, the national currency at that time.
[14] Lanata Briones, 'Constructing Public Statistics', pp. 145-51.
[15] Lanata Briones, 'Constructing Public Statistics', pp. 178-80.
[16] Departamento Nacional de Trabajo, 'Condiciones de vida de la familia obrera', *Investigaciones Especiales. Serie C,* 8, 1937, p. 36.

food consumption. The survey organised by the *Instituto Nacional de Nutrición*. The aim of the study was to collect information on the health and nutrition of working class families.[17]

The survey took place between 1 July 1936 and 30 November 1937, but the investigation covered one month of activity per household. The families included had earnings of less than m$n500 per month, just like the 1933 survey. The data the report has are only with respect to housing. The report refers to information on incomes and expenditure, but nothing is published in this report.

1936-1937

The annual reports of the DNT published data for provinces (or major cities in provinces) on average income and expenditure, but no data on households, number of budgets, or methodology. It has two types of budgets: those earning less than m$n120 and those earning more. All budgets refer to families with 2 adults and 3 children.[18] Thus it is not clear the budgets derive from household budget surveys.

1941

This is a 1941 academic medical survey of 250 households where tuberculosis was present. It was concerned primarily with factors leading to ill-health, including poor sanitation, overcrowding and nutrition. The data presented is grouped and mostly related to housing and living conditions. The report gives some information on average income and expenditure across the 250 households, but no data by income group. The households surveyed were in the neighbouring area of the medical dispensary that carried it out was located, in the City of Buenos Aires.

1943

This survey was intended to assess living conditions of the 'typical' working people in the province of Córdoba, along the lines of the surveys carried out by the DNT for the City of Buenos Aires. It was undertaken in August 1943. Typical families were composed of a working man, his wife and three children under the age of 14 years. Data were obtained from 933 households. Limited data on this survey are given in the report, much of which is concerned

[17] P. Escudero *et. al.*, *La Vivenda en 600 Familias de Obreros y Empleados de la Ciudad de Buenos Aires,* Buenos Aires, 1939.
[18] Departamento Nacional de Trabajo, *Investigaciones Sociales*, 1939.

with price data on food items. Brief grouped income and expenditure data are given for four income categories.[19] The distribution of the sample among these categories is unknown.

1943

The last of Figuerola's surveys in the DNT and of the DNT household budget surveys was carried out in 1943 when 10,000 households in Buenos Aires were asked to fill out monthly questionnaires in May, June and July. 18,795 budgets were used. Families whose head of household earned between m$n100 and m$n250 and worked in an industrial establishment were considered, which enhanced the scope of the 1935 survey slightly, but was not as comprehensive as the 1933 enquiry. Once again, only traditional families were surveyed. The aim of the survey was to collect information on the average consumption of the working class that was representative in order to complement that gathered since 1933. That is, this survey was meant to update those of 1933 and 1935.[20] There is only one budget in the report for a low-earning family of 4.

1960

The first of the surveys carried out by the national statistical office was the annual household budget survey of 1419 families of the City of Buenos Aires. It was taken with the aim to update the weights of the cost of living index. It focused on industrial workers, dividing the sample into four categories (*oficial*, *medio oficial*, *operario and peon*). To determine the sample, industrial firms of the City of Buenos Aires with more than 100 workers were identified and contacted. They were asked for a list of workers who were members of families of four individuals (parents plus two children between the age of 6 and 14 years) and for their wages. On the basis of this information, the wage categories were established and after that families were chosen randomly and visited by the surveyors to see if they actually did comply with the characteristics of the typical family. The sample was considered representative of the industrial working class as individuals working in different industrial activities were surveyed.[21]

The publication has price indices and one average household budget, the basis of the cost of living index. Just that average budget is presented but there is an income breakdown of the sample in five categories. According to Cuesta, this 1963 publication embodies the new state paradigms since it showed new information that was more precise and homogeneous,

[19] M. Ossorio y Florit, 'El Nivel y el Costo de Vida de la Familia Obrera en Córdoba', *Crónica Mensual de la Secretaria de Trabajo y Previsión,* 2:11, 1945, pp. 31-49.
[20] Dirección de Estadística Social, *Condiciones de vida de la familia obrera 1943-1945*, Buenos Aires, 1946.
[21] Dirección Nacional de Estadística y Censos, *Costo de nivel de vida en la Capital Federal. Nueva encuesta sobre condiciones de vida de la familia obrera año 1960,* Buenos Aires, 1963.

characteristics needed for state planning. It also puts forward inflation as a central problem in those years.[22]

1963

The National Development Council (*Consejo Nacional de Desarrollo,* CONADE), an official government agency in charge of state planning, took a survey in 1963 for Argentina as a whole. This is the first country-wide survey and has some income distribution of the sample. The objective was to survey both urban and rural population, but for financial reasons, only urban households were included. The urban places to be surveyed were chosen using data from the 1960 population census. Due to this definition, the survey was carried out in the City of Buenos Aires and Greater Buenos Aires and twelve provinces (Buenos Aires, Santa Fe, Cordoba, Mendoza, San Juan, Tucuman, Santiago del Estero, Salta, Entre Rios, Corrientes, Entre Rios and Misiones), which represents 92% of the country's population.

The aim of this survey was to generate information to study the distribution of the tax burden in the country. For that reason, it was not used to update the budget used as basis of the cost of living index. Despite this specific objective, the report highlights the relevance of collecting information on the consumption of families by income bands to general knowledge of economic and social conditions of a country and to generate cost of living indices.[23]

The survey was carried out throughout February and March 1963. Stratified random sampling was attempted. 4000 questionnaires were distributed and there was a re-weighting of the sample according to geographic distribution, rendering a sample of 6484. However, 3514 surveys were used. A pilot survey of 30 households was also performed. When describing the methodology, the report references what is done in the US, Canada and Europe. Housewives were interviewed, rather than left to fill out forms.

There is information on total and disaggregated expenditure by income bands. Expenditure categories include food, general expenses, housing, car, clothing and durable goods. The advantage of this survey is that there is information for the whole country. However, it is not comparable to previous surveys that only focus on the City of Buenos Aires.

1965

The CONADE took another survey which focused only on food expenditures in 1965, but in this case just for the City of Buenos Aires and Greater Buenos Aires. Information is published

[22] Cuesta, 'El Costo de Nivel', p. 104.
[23] Consejo Nacional de Desarrollo, *Encuesta sobre presupuestos de consumo de las familias urbanas por niveles de ingreso para 1963*, Buenos Aires, 1965.

for 2022 households. Families, who were selected by stratified random sampling, were visited 3 times throughout a week. The enquiry was carried out between 25 September and 5 December.[24]

The aim of the survey was to generate information that would be the basis of nutritional policies and programmes. It followed the procedures of the FAO and the UK's National Food Survey. Other national entities were consulted. The information presented is re-categorised in income strata defined by the publication. The food budget published is extremely detailed.

1966-1967

The provincial statistical agency of Cordoba carried out household surveys in their capital cities in 1966-1967 to generate their local cost of living index. It was carried out over a year generating information for 354 salaried urban households.[25]

It has detailed information for one average budget but no information on the income categories of the sample and household structure. The sample is distributed by occupation categories: labourer, semi-skilled workers, skilled workers and employees. Families were surveyed on the basis of the sample design generated for the employment and unemployment survey of the city carried out in 1965. From that sample, families were chosen that were formed by a couple and two children and had a head of salaried household. Other requirements included: the wife was not meant to be employed, the head had to had only one job, children were above 14 years of age.

1966-1967

The provincial statistical agency of Mendoza carried out household surveys in their capital cities in 1966-1967 to generate their local cost of living index. It was carried out over a year generating information for 211 salaried urban households.[26]

It has detailed information for one average budget but no information on the income categories of the sample and household structure. The sample is distributed by occupation categories: labourer, semi-skilled workers, skilled workers and employees. Families were

[24] Consejo Nacional de Desarrollo, *Encuesta de consumo de alimentos en la Capital Federal y en el Gran Buenos Aires*, Buenos Aires, 1968.
[25] Dirección General de Estadística de Córdoba, *Indice de precios al nivel del consumidor (costo de vida) en la ciudad de Córdoba. Encuesta sobre ingresos y gastos de asalariados urbanos (1966-1967)*, Córdoba, 1968
[26] Instituto de Investigaciones Económicas y Tecnológicas, *Indice de precios al nivel del consumidor (costo de vida) en la ciudad de Mendoza. Encuesta sobre ingresos y gastos de asalariados urbanos (1966-1967)*, Mendoza, 1968.

surveyed on the basis of the sample design generated for the employment and unemployment survey of the city carried out in 1965. From that sample, families were chosen that were formed by a couple and two children and had a head of salaried household. Other requirements included: the wife was not meant to be employed, the head had to had only one job, children were above 14 years of age.

The Cordoba and Mendoza publications have a very similar format, which suggests they were part of the same project, hinting at the fact that perhaps this was carried out in other provinces.

1969-70

The national statistical agency carried out a survey in 1969 and 1970 for a year just for the City of Buenos Aires and Greater Buenos Aires. It was a yearlong survey of 1350 working class households, taken between 1 July 1969 and 30 June 1970.[27]

The main aim of the survey was to generate information on the families' behaviour regarding their incomes and expenditures. Multistage sampling was performed, following the guidelines outlined for the Employment and Unemployment Survey of 1965.

Thanks to the survey information was generated regarding the socioeconomic characteristics of families, the composition of households, of their expenditures and incomes, of their changes in their assets and liabilities, of their savings, as well as regarding the characteristics of their housing. The methodology was discussed in the seminars of the *Programa de Estudios Conjuntos para la Integracion de America Latina* (ECIEL). Reserchers from the Di Tella Institute also participated. The antecedent referenced is the CONADE survey of 1963.Budgets are presented by income, by household structure, among other things.

[27] Instituto Nacional de Estadísticas y Censos, *Encuesta de presupuestos familiares 1969/70,* Buenos Aires, 1971.

BRAZIL Table A2 Brazil

Year	*1934*	*1934*	*1936/7*	*193/7*	*1937*	*1937*	*1937*	*1940*	*194/1*	*1942*	*1943*	*1948*
Sample size	221	500	306	12106		1726	271	793	165		54	396
Duration	3m	1w	2m	1y		1m	3m	6m			2w	1m
Region	SP	R	SP	RJ		R	R	SP	SP		PA	RJ
Scope	W	W	PSW			?	W	all	MW	R	PEW	W
Year	*1951/2*	*1952*	*1954*	*1958*	*1961*	*1961/2*	*1962*	*1962/3*	*1962/3*	*1967/8*	*1967/8*	
Sample size	300		925	104	800	4625	327	2684	1812	2430	3578	
Duration	1m		1m	1m	1w	1y	1y	1y	1y	1y	1y	
Region	SP	SP	R	SP	PE	N	RJ	N	N	RJ, PA, R	RJ	
Scope	W	TMW	PA	W	R	U	R	U	R	U	W	W

key regions: SP=São Paulo, R=Recife, PA=Porto Alegre, RJ=Rio de Janeiro, PE=Pernambuco state, N=national. Scope: W=workers, E=Employees, R=Rural, U=Urban, PSW=public sanitation workers, MW=metal workers of a particular factory, PEW=public sector workers and managers, TMW=Textile and metal workers

Summary

As with most Latin American countries, the most useful surveys for studying inequality begin in the 1930s. However, despite the popularity of the 1934 São Paulo survey, for many years the ILO's *International Labour Review* published in the Statistics Section a cost of living index for Rio de Janeiro, the capital city of Brazil at that time. A Review article mentions a 1919 study, but it does not say if it is a household survey.[28] A Brazilian publication says it is a theoretical budget.[29] But it is not clear as the same source also mentions 1919 as a year of data collection. So there may have been a 1919 budget study.

The earlier surveys show a big concern for nutrition of the working class as well as an aim to collect data from different parts of the country. There is a great influence of the Chicago School of sociology in most of the earlier surveys, which enhances the relevance and amount of nutrition data in them.

For Brazil there is a large number of surveys, but they are all of different groups of individuals, even if generally the aim is to collect information on the working class. The 1961-1963 surveys are part of a truly national project to generate information on Brazil with no specification regarding if it was a particular sector of the population.

We have identified 14 surveys. There are several we do not have a copy of, some of them are quite crucial, and those are included in this list

[28] 'Methods of Computation of Statistics: II [notes]', *International Labour Review*, 58:1, 1948, pp. 124-135.
[29] Ministerio do Trabalho, *Levantamento do custo de vida no Brasil*, Rio de Janeiro, 1946.

Surveys

1934

Jaime Rodrigues argues that the standard of living research carried out by technicians of the Department of Culture of the Municipality of the City of São Paulo (*Departamento de Cultura da Prefeitura do Município de São Paulo*) between the 1930s and 1950s had similar characteristics with the current consumer surveys. In general, the aim was to set the estimate the consumer price index and aid in (potential) salary adjustments. Those early surveys, however, had a narrower scope than currently as they were designed to collect information on working class families (manufacturing or services, in any case, low-income). Rodrigues explains that the enumerators had to undergo specific training to carry out their tasks. They were taught how to approach members of these families and convince them to participate in data collection. The collection and tabulation of data from these surveys are virtually unused sources in historiographical studies. For that reason, he groups together six surveys that followed the precepts of the Chicago School.[30]

The first of these surveys, and the first on income and expenditure to be carried out in Brazil, was taken in 1934 by Horace Davis. It was informed by surveys that had been carried out in other countries, and was intended to assess the living conditions of working-class families in São Paulo, with a particular concern over malnutrition. The survey was conducted under his direction in April-June 1934.[31]

Data are organised by type of expenditure (e.g. housing, food, milk quantity etc.) and in some places by income group. Data on receipts and expenditures were provided by 221 families through questionnaires. The families were selected at random in the city of São Paulo. The report claims that this sample represents conditions among the better-paid part of the working classes.

The survey was financed in large part by the Escola Livre de Sociologia e Politica de São Paulo and aided also by the Institute of Education (now of the University of São Paulo) and by the Institute of Hygiene. The Sanitary Education Service of the Department of Education provided some of its workers to assist.

[30] J. Rodrigues, 'Por uma história da alimentação na cidade de São Paulo (décadas de 1920 a 1950)', *Revista de Estudios Sociales*, 33, 2009, pp. 118-128

[31] The report is re-printed in C. Dieguez et. al., *As Pesquisas sobre o padrão de vida dos trabalhadores da Cidade de São Paulo. Horace Davis e Samuel Lowrie pioneiros de sociologia aplicada no Brasil*, São Paulo, 2008.

1935

The object of this 1935 survey was to determine the nutritional needs and habits of the urban working class in Recife throughout one week, to help estimate the level of public relief that was necessary in cases of hardship or unemployment. It was carried out by the Labour Ministry amongst 500 families.[32]

The report presents grouped data budgets and food prices for working households. There is a comparison of the results with international data, for example Argentina and the US. There is not much detail on survey methodology.

1936-1937

This survey, carried out by sociologist Samuel Lowrie, followed Horace Davis' 1934 survey in attempting to assess the standard of living of urban workers in São Paulo. It is the second survey of Rodrigues' grouping. This time, Lowrie chose to focus on the households of public sanitation workers. Each household was asked to keep a budget book for a period of two consecutive months between November 1936 and May 1937. A total of 306 records were used. Specialised researchers were sent to the workers' households where families where asked to record daily expenditure. The forms used were developed using both local and foreign examples. Lowrie himself acknowledged this was not a representative group, but preferred to collect information on a particular sector of the population.[33]Data are given on household composition, including ethnicity, prices, income and expenditure.

For Rodrigues, this survey introduced a methodological novelty as it was focused on a defined group. This research led to the cost of living index of the São Paulo Municipality. The main limitation of this survey is acknowledged by the man who carried it out: it is not representative of the working class of São Paulo, let alone of Brazil as a whole.

1937a

This is a survey mostly just focused on nutrition. It reviews the existing literature up to then on the topic, but focuses on the fact that little exists for the country until then and what exists belongs to the field of Biology and Medicine.[34] The data are not presented by income group.

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[32] J. de Castro, 'O Valor da Alimentação: Estudo Econômico das Condições de Vida das Classes Operarias no Recife', *Boletim do Ministerio do Trabalho, Industria e Comercio*, 5, 1935, pp. 117-131

[33] The report is re-printed in C. Dieguez et. al., *As Pesquisas sobre o padrão de vida dos trabalhadores da Cidade de São Paulo. Horace Davis e Samuel Lowrie pioneiros de sociologia aplicada no Brasil*, São Paulo, 2008.

[34] de Barros Barreto, J. et. al., 'Inquérito sobre Condições de Alimentação Popular no Distrito Federal', *Arquivos de Higiene*, 8:2, 1938, pp. 375-399.

1937b

Report of a survey carried out in Recife by the Department of Health. The survey was primarily concerned with nutrition, particularly that of children. It was reported that malnutrition was widespread, resulting in disease. Throughout a month, 1,726 families were surveyed.[35] Limited data are given in this report, but group income levels and some information on nutrition is given in the text. There is practically no information about the methodology followed.

1937c

Survey carried out by the national statistical agency between October and December 1937 on the cost of living of the Recife working class. The aim of the survey was to obtain an exact base to estimate the cost of living index of working and middle classes, though the data presented only focuses on the former. 1200 surveys were distributed, 305 were chosen and 271 were considered useful.[36] Surveys were distributed amongst households considered as typical (parents plus three children). There are group data by income (four categories) despite the clear nutrition concerns in the report. Monthly expenditure averages by income are also presented.

The report focuses a lot in trying to estimate/understand the behaviour of the typical family. For that reason it elaborates an average budget. It quotes surveys from Australia, US, Italy and Mexico. There is also an important focus on nutrition. There is no explanation of the sampling technique followed.

The problem of the survey is that it only centres on the city of Recife, but if we can extend the data, it can be complemented to the information on São Paulo for the same period, which also focuses on the working class.

1940

This is a survey primarily concerned with nutrition in São Paulo. With the assistance of co-operative societies, income and food consumption data was obtained for 793 households during the first semester of 1940, organised into income groups. The survey was carried out among families of the students of the *Instituto Profissional Femenino* since the student body was a diverse groups coming from different socio-economic conditions.[37]

Data are grouped by income, and cost and quantity of different foodstuffs is given. The report also focused on the sanitary conditions of the households.

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[35] Britto, A. et. al., 'Inquérito Alimentar na Bahia', *Bahia Medica*, 9:1, 1938, pp. 8-11.
[36] Freire A. et. al., 'Sondagem sobre o custo de vida das classes trabalhadoras no Recife', *Boletim da Secretaria de Agricultura, Indústria y Comercio*, 3:1, 1938, pp. 31-51.
[37] F. Pompeo do Amaral, 'A Alimentação da População Paulistana', *Revista do Arquivo Municipal*, 90, 1943, pp. 55-87.

The report begins by stating that accounting for the food habits of the population of a city as big and diverse as São Paulo's is very difficult. This is clearly to justify the narrow sample used, which is its main limitation.

1940-1941

This is the third of the São Paulo surveys considered by Rodrigues, along the lines of the second one as it also focused on a particular group: the metal workers of Usina Santa Olympia. The research was also coordinated by teachers of the Escola Livre de Sociologia e Politica de São Paulo and partly funded by the Rockefeller Foundation. Araujo sought to extend the research on living conditions in São Paulo that had previously been carried out by Davies and Lowrie as part of continued efforts to improve the standard of living of urban manual workers, and develop a realistic cost of living index. This was the first survey to be carried out solely in one firm. Of the 232 surveys distributed, data was collected for 165 families.[38]

This survey was carried out by means of interview and budget books. The interview method provided by far the most comprehensive data. Careful efforts were made to randomly sample the employees by geographic area. Detailed group data on monthly household income and expenditure is given, associated by income group. Emphasis is also stressed on the nationality of the workers.

The report constantly compares its results with the previous surveys of Lowrie and Davis. Because it is focused on the workers of one particular firm, the results of this survey are rather limited.

1942

Reporting of a survey on living conditions in rural sugar areas, along with sociological reporting on other surveys carried out in Brazil. We do not have a copy of this survey yet.

1943

This is a comprehensive survey of the cost of living of public sector workers and managers of the city of Porto Alegre during the first two weeks of October 1943. Data are presented by four income groups and additionally by the occupational status of the head of household. 220 forms were distributed initially, but data are only reported for 54 families, including incomes, expenditures on key items such as food, housing, clothing, and food quantities purchased.[39]

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[38] O.E. de Araujo, 'Pesquisa de padrão de vida dos operários da usina Santa Olimpia Limitada', *Revista do Arquivo Municipal*, LXXX, 1941.
[39] J. Prates, 'Padrão de Vida dos Funcionários Estaduais no Rio Grande do Sul', *Boletim do Ministério do Trabalho, Industria e Comercio,* 11:121-122, 1944, pp. 291-311.

This survey appears to be comprehensive. However, it only contains public sector workers (of different occupations) in one state and had a very low response rate. The report also highlights the general lack of interest to collaborate in the enquiry.

1948

An academic sociological survey interested in the function of human decision making and behaviour around issues of daily living and working in the tradition of Le Play, directed by a professor of the Universidade do Brasil.[40]

Data on commerce workers of the city of Rio de Janeiro was collected for 396 families in April 1948 by a combination of budget book and interview method, as used in surveys in Finland 1928, Denmark 1931 and Switzerland 1933. The report also quotes the surveys of Lowrie, Davis and Araujo. Comprehensive income and expenditure data are given by income group. The report also provides data on prices.

1951-1952

This is the fourth survey of group analysed by Rodrigues.[41] It is also mentioned in the *International Labour Review* and in a publication of the Inter-American Statistical Institute.

An expenditure survey was conducted in 1951-52 amongst roughly 300 workers' families in São Paulo by the Division de Estatistica e Documentacao Social. It took place in one month intervals. We do not have a copy of this.

1952

This is the fifth survey of group analysed by Rodrigues.[42] Josue de Castro, then president of the National Commission of Social Welfare, fostered this survey of textile and metallurgists workers of São Paulo. We do not have a copy of this despite having a reference.[43]

1954

This project sought to assess the disparity of wages and living conditions between different grades of industrial workers of the city of Porto Alegre, and in Bueno's wider work, between workers in different areas of Brazil.[44]

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[40] L. de Aguiar Costo Pinto, *Pesquisa sobre o Padrão de Vida do Comerciário no Distrito Federal*, Rio de Janeiro, 1949.

[41] J. Rodrigues, 'Por uma história da alimentação na cidade de São Paulo (décadas de 1920 a 1950)', *Revista de Estudios Sociales*, 33, 2009, pp. 118-128

[42] J. Rodrigues, 'Por uma história da alimentação na cidade de São Paulo (décadas de 1920 a 1950)', *Revista de Estudios Sociales*, 33, 2009, pp. 118-128

[43] L. de Freitas Bueno, 'A Pesquisa de Padrão de Vida em São Paulo, da Comissão Nacional do Bem-Estar Social', *Boletim do Departamento Estadual de Estatística*, 11: 1, 1953.

[44] L. de Freitas Bueno, *Padrão de Vida do Operário Industrial de Porto Alegre*, Porto Alegre, 1958

It comprises 925 families which were surveyed in April 1954. They were chosen by random sampling. The data are mostly organised by the number of people in a family, rather than by income group. Detailed expenditure on income, expenditure and food consumption is given. The survey was carried out by the Centro de Estudos e Pesquisas Economicas da Faculdade de Ciencias Economicas of the University of Rio Grande do Sul. This survey has a narrow geographical scope but it is wider than its predecessors in terms of the sector surveyed.

1958

This is the sixth and last of the surveys grouped together by Rodrigues.[45] Families of workers associated in 18 of the main unions of São Paulo that were affiliated to DIEESE[46] - the Inter-Union Department of Statistics and Socioeconomic Studies - were surveyed throughout October 1958. This was the first of a series of surveys conducted by the DIEESE on the cost of living of workers that triggered the development of an index. It was the first article published in the first issue of its journal.[47]

The survey was conducted in two phases. In the first, the questionnaires aimed to find the family composition, income and housing conditions. As a result, the standard family was defined. In the second stage, there were more detailed questionnaires and books so families can record daily all expenses incurred by them throughout one month. Students of the Universidade de São Paulo helped running this survey. 12,000 forms were initially distributed while the final sample used to elaborate the average budget was of 104 households.[48] The only available information is a single average budget.

To gauge the representativeness of this association, we would need to supplement the data from this survey with information on how many unions this had as members vis-a-vis the total number of unions and how relevant they were. However, there is no income data, so there is not much we can do with this, except to compare the average budgets of the six São Paulo surveys as they extend for 20 years.

1961

This is an academic survey carried out in 1961 where the objective of this survey was to assess living standards among rural workers in the 'Zona da Mata' (State of Pernambuco) in order to

[45] J. Rodrigues, 'Por uma história da alimentação na cidade de São Paulo (décadas de 1920 a 1950)', *Revista de Estudios Sociales*, 33, 2009, pp. 118-128
[46] This department was formed in 1955.
[47] Pesquisa do Custo de Vida da Classe Trabalhadora, see http://www.dieese.org.br/metodologia/pof.html
[48] 'O índice do custo de vida da classe trabalhadora do São Paulo', *Boletim do Dieese*, 1:1, 1960.

generate policies to improve those living conditions. Particular emphasis was also placed on the problem of rural labour.[49]

Random sampling was attempted. There was substantial work done to define the geographical area to be surveyed in order to establish a homogenous area. Data are mostly presented by geographic area and family age/size. Data presented includes information on demographic characteristics, mortality, education, migration, housing and sanitation, transport and food. The quantities of certain foodstuffs purchased and average calories consumed are given by region. The problem with this data is its narrow geographical focus as well as the fact that it is for the rural population, whilst most of the previous surveys are urban. We need to know how representative the population of this area is of rural population as a whole. However, the sample of this thorough study is larger than previous surveys.

1961-2 (urban-cities)

The government commissioned a survey of the whole of Brazil. It had a rural, an urban and an interior of states component. That is, it was conducted in three different types of places between 1961 and 1963. The enquiry was carried out by Instituto Brasileiro de Economia of the Getulio Vargas Foundation, a prestigious academic institution. The aims of the study were to generate knowledge of the socio-economic and cultural characteristics of the population, gather information to generate a cost of living index, and provide elements for studies of the consumption patterns in order to generate policies economic policies that are closer to reality as well as theoretical studies. The data collected was meant to complement and enhance the national accounts information.

The first one took place between July 1961 and June 1962. It included eight urban surveys in the cities of Rio de Janeiro (762 households), São Paulo (671 households), Curitiba (493 households), Belo Horizonte (503 households), Salvador (588 households), Recife (515 households), Fortaleza (610 households) and Belem (483 households). In total, 4625 households were surveyed.

Comprehensive income and expenditure data is presented, mostly grouped by income.

Budgets are extremely detailed and other publications show the weights given to each item in each city as well as average expenditure and income and summary data on income distribution of the sample.[50] Those detailed budgets are published separately. The publications

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[49] T.F. Maciel, *Nível de Vida do Trabalhador Rural da Zona da Mata-1961*, Recife, 1964
[50] Getulio Vargas Foundation, *Food Consumption in Brazil. Family Budget Surveys in the Early 1960s*, Rio de Janeiro, 1970.

have the same format and data but lack detailed methodological information as to how the survey was carried out. Reports say random sampling was followed.

It seems to be the first national attempt at a household budget survey with relatively large samples. The combination of all the three parts of the survey is useful for our purposes and should be aggregated.

1962

A rural household budget survey, conducted for the year of 1962 by the agricultural department of the Instituto Brasileiro de Economia of the Getulio Vargas Foundation in the state of Rio de Janeiro. The sample was chosen on the basis of the 1960 population census and the 1960 agricultural census. 400 rural establishments (were several families lived) were selected on the basis of the agricultural census and on the basis of that the sample was determined.[51]

Households were selected from across the area, with the interview/budget book methodology adapted from that used in the São Paulo survey that took place at a similar time.

Data includes information on the composition of the households, as well as detailed expenditures by income group and information on education, household equipment and standards of hygiene. The results problematise rural poverty, as differences in expenditure are taken to be down to socio-cultural differences as much as to differences in income.It does not seem to be part of the 1961-63 series, though it clearly complements it. I would add it up to that data.

1962-3 (urban -interior of states)

Between 1 July 1962 and 30 June 1963 the interior cities of the state surveys that complemented the urban of 1961-2 took place in the states of Rio de Janeiro/Espirito Santo (639), São Paulo (654), Minas Gerais (721), and Parana/Santa Catarina (670). In total, 2684 households were considered. The cities considered were divided according to their size in three types. Large cities (group A) were those with more than 50,000 inhabitants, medium cities (group B) those with 20,000 to 50,000 inhabitants and small cities (group C) with 5,000 to 20,000 inhabitants.

Data on income and expenditure is presented by income group and group A, B or C location.

Those detailed budgets are published separately. The publications have the same format and data but lack detailed methodological information as to how the survey was carried out.

[51] Centro de Estudos Agrícolas, *Pesquisa Agrícola no Estado de Guanabara. Orçamentos Familiares*, Rio de Janeiro, 1967.

Reports say random sampling was followed. Summary data on income distribution of the sample is found on a general publication.[52] We have all the individual reports. It seems to be the first national attempt at a household budget survey with relatively large samples. The combination of all the three parts of the survey is useful for our purposes and should be aggregated.

1962-3 (rural)

Either between January and December 1962 or January and December 1963 the rural survey that complemented the urban enquiry of 1961-2 took place in the rural areas of the states of Ceara (202), Pernambuco (252), Espirito Santo (214), Minas Gerais (196), São Paulo (480), Santa Catarina (246) and Rio Grande do Sul (222). In total, 1812 households were considered. The samples were chosen based on the data of the 1960 agricultural census.Data on income and expenditure are presented by income group. Six income bands exist in the reports.

Those detailed budgets are published separately. The publications have the same format and data but lack detailed methodological information as to how the survey was carried out. Reports say random sampling was followed. Summary data on income distribution of the sample is found on a general publication.[53] Individual reports were published for each state, we have all of them.

It seems to be the first national attempt at a household budget survey with relatively large samples. The combination of all the three parts of the survey is useful for our purposes and should be aggregated, adding onto the Rio de Janeiro enquiry from 1962.

1967-8

This is a survey of 3,578 urban households in Greater Rio de Janeiro. The survey was carried out by the Companhia Central de Abastecimiento do Estado de Guanabara together with the Pontificia Universidade Catolica between 1 November 1967 and 31 October 1968. The report includes a thorough explanation of the definitions used. Stratified, proportional random sampling was used. The fieldwork was carried out by university students together with trained supervisors.[54]

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[52] Getulio Vargas Foundation, *Food Consumption in Brazil. Family Budget Surveys in the Early 1960s*, Rio de Janeiro, 1970.

[53] Getulio Vargas Foundation, *Food Consumption in Brazil. Family Budget Surveys in the Early 1960s*, Rio de Janeiro, 1970.

[54] Companhia Central do Abastecimento, *Resultado de Pesquisa sobre consumo alimentar e orçamentos familiares no Grande Rio*, Companhia Central do Abastecimento,

Demographic data as well as information on housing characteristics, expenditure, schooling/education and consumption habits/preferences is presented by income categories. Twelve income categories are established on the basis of the minimum wage.

This is useful as it complements previous reports as well as the other 1967/8 survey as it covers a state not considered in the official survey. There is little information of the population surveyed, however.

1967-8

This is the next big survey after the 1961-63 enquiries. It was also done by the Getulio Vargas Foundation (FGV) and not by the national statistical bureau. It was an urban survey, taken in the cities of Recife (695), Rio de Janeiro (1020) and Porto Alegre (715). It was carried out between April 1 1967 and March 31 1968 by quarter. Thus data is presented quarterly.

All expenditure data are presented by income levels. Nine income levels exist and they are established on the basis of quarterly minimum wages. The expenditure data is very thorough. The reports we have are basically the data plus definitions of particular concepts.

This survey was part of the Programa de Estudos Conjuntos sobre Integracao Economica Latino-Americana of the ECIEL that aimed to establish a comparative study of the urban consumption structures in Latin America. The FGV claims to have substantial experience in this type of studies, which it has been carrying out since the 1940s. At the beginning, these surveys were needed to establish cost of living indices. In the late 1960s and 1970s they had multiple uses: study the consumption/demand of particular products and establish nutritional parameters of the population

Unlike its predecessor, it does not have such an extensive scope in terms of rural and urban households as well as different cities/states. It surprisingly does not cover São Paulo, the biggest Brazilian city.

CHILE

Table A3 Chile

Year	1903	1928	1933	1935	1935	1935	1939
Sample size	1	68*	48	90	593	60	33
Duration		1m	5m	1m	3w		1d
Region	SGO	SGO	VM	SGO	N	Chillan	Choapa
Scope		E	W	W	W	all	rural
year	1942	1946-7	1951	1956/7	1965	1968/9	
Sample size	286	200	179	885	431	1260	
Duration	1m	1m	1m	1y	4w	1y	
Region	nation	SGO, C,A	SGO	SGO	SGO	SGO	
Scope	W	E, W	E	E, W	E, W	E, W	

Key. * Individuals. Regions: SGO=Santiago, VM=Viña del Mar , C=Concepcion, A=Antofagasta, N=National. Scope: W=workers, E=Employees

Summary

Household surveys started relatively early in Chile. The survey reports generally quote each other, showing continuity over time in the study of household budgets. We have identified eleven surveys for our period. However, due to the way the data is presented, we would only be able to start a sort of income inequality analysis from the 1946/7 survey. For the previous years (particularly the 1930s), the Chilean surveys have a clear focus on nutrition. These were undertaken by non-statistical agencies.

Surveys

1903

A one household monographic study of a family of Santiago de Chile was carried out by Errazuriz Tagle *et. al.*[55] We are still waiting for the original publication, but the data was used in 1983 by an academic to determine a cost of living index.[56] Unfortunately, in that paper, the budget data is not presented, just referenced.

[55] J. Errazuriz Tagle *et. al.*, *Estudio social; monografía de una familia obrera de Santiago,* Santiago de Chile, 1903.

[56] P. DeShazo, *Urban Workers and Labour Union in Chile. 1902-1927*, Madison, 1983

1928

Probably throughout March 1928, a survey was carried out. Such enquiry was used to establish the weights of the cost of living index released by the main statistical office in 1933. The survey was taken amongst employees of the office. The sample gathered 68 adults and 6 children under the age of 10. There is no mention to number of households nor is there income data. The budget presented is an average one. The survey was only on food consumption, which was estimated per person. The other parts of the cost of living index were generated on the basis of estimates.[57] The generation of such index was the objective of the survey.[58]

It is not clear when the survey was performed and for how long. It was probably carried out throughout March 1928, for what the reminder of the publication states.

According to a later publication, the weights of the cost of living index were not updated until the 1956-7 survey.[59] Unlike its regional counterparts, this index was not based on the preferences of a working class household budget, but of employees.

There is no other information on the budget survey nor any other type of data published that is not the average budget.

1933

A survey of 48 households with 319 people was taken between 16 March and 15 August 1933. It focused on workers of a sugar refinery located in the city of Viña del Mar and on nutrition information. We still do not have the original publication, we found it on another report that uses and presents the data on the average budget obtained from the survey.[60]

1935

A survey of 90 working class households with 428 people of Santiago de Chile was undertaken throughout June 1935. It mostly focused on nutrition. We do not hold the original publication, we found it on another report that uses and presents the data on the average budget obtained from the survey.[61]

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[57] Dirección General de Estadística, *Comercio Internacional y Comunicaciones. Año 1928*, Santiago de Chile, 1930.

[58] A cost of living index had been initially published in 1923, and extended all the way back to 1913. It was based on a theoretical budget, not a household budget survey. See National Industrial Conference Board, *The Cost of Living in Foreign Countries*, New York, 1927, pp. 85-8.

[59] Dirección General de Estadística, *Comercio Internacional y Comunicaciones. Año 1957*, Santiago de Chile, 1962, p. 453.

[60] Mardones, J.R. et. al., *La Alimentación en Chile: Estudios del Consejo Nacional de Nacionalización*, Santiago de Chile, 1942.

[61] Mardones, *La Alimentación en Chile*.

1935

This survey was a significant international intervention investigating the manifestation of malnutrition in Chile, with a particular concern in its relationship to infant mortality. The project was conceived and organised by the League of Nations. The survey was carried out in two parts, between 3-17 July 1935 and 1-9 August 1935, in 15 different locations throughout Chile. The 593 working class households included 3,383 people.[62]

Detailed reporting of agricultural and economic life in Chile is provided, with data including the production of various foodstuffs and climate reports. The survey concluded that the nutritive value of diet increased with income, so malnutrition was directly related to poverty rather than any other factors.

For nutrition purposes, the 1933 and the two 1935 surveys on nutrition could be compared. There is already a comparative table in the publication where we found the references.[63]

1935

Study of 60 urban families in Chillan taken in 1935. The families were those of insured persons. Almost all of the mothers were clients of the Children's Clinic (Oficina *del Niño de Consultorio*). The entire group studied consisted of 306 persons (155 of whom were children under 14 years of age), equivalent to 192 adult males on the basis of standards set by the League of Nations. The reference to this report comes from the *Monthly Labor Review*.[64]

1939

This is a detailed medical survey of the rural region of Choapa, undertaken by researchers from the Department of Health of 33 households between Sunday and Monday (though the month of the year is not specified). The focus of the survey was nutrition and its effect on the health of the population.[65] Methodology was inspired by the 1935 research of Dragoni and Burnet for Chile as a whole. The survey provides a very detailed account of the housing situation of the 33 families, counting not only for the number of rooms, but also for the furnishing and basic kitchen equipment. The results are compared permanently with the 1935 survey and with the 1930 population census.

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[62] C. Dragoni et. al., 'Report on Popular Nutrition in Chile', *Bulletin of the Health Organization of the League of Nations*, 6:3, 1937, pp. 299-370.
[63] Mardones, *La Alimentación en Chile*, p. 242.
[64] 'Expenditures for Food and Housing by Urban Families in Chile', *Monthly Labor Review*, 44:2, 1937, p. 520.
[65] A. Macciavello et. al., 'Encuesta sobre la alimentación campesina en el valle del Choapa', *Revista Chilena de Higiene y Medicina Preventiva*, 2:7/12, 1939, pp. 265-323.

The report considers that the provision of data on the income of the households was difficult, as poor rural communities did not operate on a pecuniary basis. Individual data is given on income, land holdings, demographics and food consumption. There is also qualitative information that enhances the charts of income and land holdings. Detail information is provided on what was eaten during each of the meals of the day.

To generate a snapshot study of the 1930s food situation in Chile, it would seem that the 1930s surveys listed so far that focus on nutrition would be adequate.

1942

This is a nation-wide survey of 286 households throughout December 1942 sponsored by the national statistical agency. The sample is divided in four regions.[66] The forms asked about family composition, income, expenditure, housing and sanitary conditions with the aim to update the Chilean cost of living index (so far based on a 1928 survey) following the Second International Conference of Labour Statisticians, focusing on the working class (so far based on employees). There was an aim to determine the list of basic goods needed for consumption so as to update the CLI (because since 1928 there have been transformations) in order to know what to do regarding the minimum wage, the standard of living, housing and nutrition policies.[67]

Random sampling was followed in order to collect information on normal families of the cities of these provinces, that is, the ones formed by parents (working male) and their children. Information on income, expenditure, housing, calories is presented by geographical zone. Like the 1930 studies, there is still a concern for nutrition in this report.

The reports references extensively ILO reports and recommendations. It explains the ILO as an organisation concerned with studying different aspects of standard of living of workers needed to design public policy. The ILO/ICLS report on household budget surveys is referenced as well as the resolutions put forward in the first Latin American ILO meeting of January 1936 regarding the need for cost of living indices.

Moreover, the document worries about comparisons in time of the local index as well as international. It presents cost of living indices for Latin American countries and the US between 1937 and 1942 referencing a 1943 report of the Pan-American union.

[66] Region 1 covered the provinces of Tarapaca, Antofagasta and Atacama. Region 2 covered the provinces of Coquimbo and Nuble. Region 3 covered the provinces of Conception and Llanquihue. Region 4 covered the provinces of Chiloe, Aysen and Magallanes.
[67] Dirección General de Estadística, *Veinte años de legislación social*, Santiago de Chile, 1945

One interesting point of this report is that it claims to establish a regular and yearly household budget survey. However, we have found no reference about it anywhere else. Even in later reports, this 1942 survey is not referenced. In fact, despite being an official budget survey and notwithstanding its aims, with these data there is no update in the weights of the cost of living index. This is useful as it is a nation-wide survey, though it is only on the working class

1946-1947

A comparative cost of living survey across three cities: Santiago (September and October 1946), Concepción (October 1946) and Antofagasta (December 1946-January 1947). The survey was undertaken by the government statistical office as part of updating price information to improve the cost of living index. In Santiago, both working class and employee households were surveyed, whilst in Concepción and Antofagasta it was just working class families. 200 families were considered.[68]

There was a particular focus on food prices. Where possible, households were asked to keep a record for the full month, although this was not possible for all households. The reported data is limited, and mostly relates to the price information gathered from the survey but information on household composition, housing and food consumption is additionally presented. The statistical office used students from the University of Chile to help them collect the information in the case of Santiago, particularly to monitor the daily registers of the households in order to minimise mistakes and omissions.

There is no information on income groups or incomes. The only information we can use is the food expenditure table that compares the group data for workers of Concepción, workers of Antofagasta, workers of Santiago and employees of Santiago. This could tie in with the 1930s nutrition data.

1951

This academic survey was sanctioned by the Banco de Chile and also by the government's statistical office. It was a survey into the economic condition of employees registered in the social security system in Santiago throughout the month of November 1951, with the aim of using the results to calculate a cost of living index. The households selected for inclusion in the survey were 'typical' households - that is, comprising a male breadwinner, a spouse, and

[68] Dirección General de Estadística, 'Encuesta sobre costa de vida de la clase obrera en Santiago, Concepción y Antofagasta', *Estadística Chilena*, 20:7, 1948.

perhaps children. Households were asked to complete a budget book, which was verified by interview. Data was collected mainly with the help of woman who went to the households at least five times throughout the month. Of 234 households, 179 provided sufficient data for inclusion in the results.[69] Comparisons were made to the 1928 results and index weights. There is no clear information regarding the sampling method.

Data presented includes income and expenditures on a range of items. Households are sorted into three groups, based on income, and data is presented according to these groups.

1956-1957

This survey, which attempted representativeness, sampled families in the Greater Santiago area headed by either middle-class employees (960 households, of which data shown for 431) or workers (1, 139 households, of which data shown for 454). Participants were divided into four groups, sampled in November 1956, February 1957, May 1957 or August 1957.[70] The generation of a cost of living index was the objective of the survey. There was an attempt to collect information from a representative sample of the employee and working class families of Santiago and Greater Santiago, following random sampling techniques using as basis the 1952 population census.[71]

The report gives comprehensive grouped data, organised by class and further disaggregated by family size, income group, education level or occupation. Detailed information on food expenditure is given (although without quantities).

Two types of forms were used to record data: one for daily expenditure and another for less frequent purchases. All families completed the daily expenditure forms, but only half of them the general questionnaire. Data is shown in the report for the families that completed both forms, that is, for 885 households.

For the national statistical institute, this is the first household survey taken in Chile, though a later report acknowledges the 1928 survey.[72] This publication provides a lot of information on the sample by income groups. For example, households are divided by income group according to the gender of the head or their education level. The employee sample is divided in six wage categories while the working class households are divided in five bands.

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[69] Parry Orrego, P., *La situación económica de los empleados particulares (encuesta de noviembre de 1951)*, Santiago, 1953.

[70] Dirección General de Estadística, *Estudio socio-económico de las familias de empleados y obreros del Gran Santiago. Encuesta del presupuestos familiares 1956-57*, Santiago de Chile, 1964.

[71] Dirección General de Estadística, *Comercio Internacional y Comunicaciones. Año 1957,* Santiago de Chile, 1962, p. 454.

[72] Dirección General de Estadística, *Encuesta nacional de presupuestos familiares. Distribución del gasto familiar en el Gran Santiago*, Santiago de Chile, 1970, p. 3.

The national statistical institute claimed to be aware of the problems of not updating the basis of the cost of living index for 30 years that was just based on employee information. It also suggests that amongst the reason for not doing so is the lack of funding as well as the lack of staff with the sufficient expertise.[73]

1965

Survey taken in 1965 by the Institute of Economic Research (Universidad de Chile) and financed by the Budget Bureau of the Finance Ministry. This survey was carried out by using statistical sampling and the interview method, between 23 August and 19 September 1965. Professor Houthakker provided technical assistance. The study had two main aims: gathering essential data for designing a survey of similar nature on a national scale and acquiring necessary experience to ensure successful large surveys.[74]

Of the 655 surveys were handed out, 431 were used. The data presented is divided between blue-collar and white-collar workers, and further subdivided by income group and family size.

The report states that it was an experimental study, acknowledging difficulties in number and quality of replies and loss of observations. For those reasons, it claims that it is impossible to generalise the results to the entire area's population.

1968-9

This is a survey of Santiago and Greater Santiago households of different income strata throughout September 1968 and August 1969. The aim of the survey was to find out certain characteristics of household income and expenditure in order to revise/generate a cost of living index, know aspects of the standard of living, study consumption trends and obtain information to feed into national accounts. Forms were handed out to record daily expenditure, whilst interviews were done to record other types of expenditure.[75]

For Greater Santiago, panel sampling was used. And the sampling method is sophisticated. This procedure is thoroughly explained.

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[73] The Chilean Central Bank provided 10 million pesos to conduct the 1956-7 survey. Such enquiry was also carried out with two experts from the United Nations, see Dirección General de Estadística, *Comercio Internacional y Comunicaciones*. *Año 1957*, Santiago de Chile, 1962,, p. 453.
[74] Instituto de Economía, *Family Incomes and Expenditures in Greater Santiago. An Experimental Survey*, Santiago, 1966.
[75] Dirección General de Estadística, *Encuesta nacional de presupuestos familiares, Distribución del gasto familiar en el Gran Santiago*, Santiago de Chile, 1970.

This is identified by the national statistical institute as the second household budget survey, after the 1956-7 study, suggesting continuity with it, which clear plus of this enquiry.

Not entirely sure how the sample is distributed among the different income levels. But there are different budgets according to income distribution. The budget is very detailed.

1260 households, 1 year

COLOMBIA

Table A4 Colombia

year	1936	1938	1938	1939	1940	1943	1945
Sample size	260	201	10	279	53	517	
Duration	1m	1m	1w	1m	1m	?	
Region	BO	MED	MON	ANT	BO	TA	BU
Scope	W	W	WS	RW	MC	rural	
Year	1945	1945	1946	1947	1953	1967-8	
Sample size	88	112	418	270	1473	2949	
Duration	1m?	1m	1m	1m	1m	4m	
Region	MAR	Honda	BAR	MAN	Urban	Urban	
Scope	W	W	W	W	W,E	W, E	

Key. Regions:BO=Bogota, MED=Medellin, MON=Moniquira, ANT=Antioquia Department, TA=Tabio county, BU=Bucaramanga, MAR=Mariquita, BAR=Barranquilla, MAN=Manizales. Scope W=workers, E=Employees, WS=workers sugar cane industry, RW=railway workers, MC=Middle class

Summary

Though they started relatively late when compared to other Latin American countries, the Colombian reports that release the figures provide very detailed data as well as substantial analysis of the figures. There is a clear continuity between the surveys and a purpose to generate comparable, consistent and systematic data. The existence of this project was fostered by the Comptroller's Office, who backs most of the official surveys in this period. There is a clear idea of the need for representativeness in the surveys and the need to have comparable and consistent data. These latter characteristics show the influence of the ILO and its International Conference of Labour Statisticians.

Particularly the studies of Bogota 1936, Medellin 1938, Bucaramanga 1945, Honda 1945, Maniquita 1945, Barranquilla 1946 and Manizales 1947 are part of a series of studies with statistical and sociological aims on how workers' lives are shaped by culture, social context and work. These surveys want to generate information on the socio-economic conditions of the working class as well as to be the basis for a cost of living index. From all of these studies there is a consumption pattern of an average/representative family that is then used to produce the weights of an index. In most of them, the sampling was done on the basis of the 1938 census. However, to generate representative samples the 1938 census figures are updated. The format of these surveys is more or less the same and they provide the same type of information.

There were eleven surveys during this period. The data to hand will allow us to start an analysis in the late 1930s, extending all the way up to the 1950s. However, we would need to keep in mind that such analysis will be of different parts of the country as the surveys that exist are not that consistent geographically throughout this period.

Surveys

1936

A pilot study with the aim of finding out the main consumption articles of the working class of Bogota in order to have a guide for more ambitions study of the cost of living in the city.
The survey of 85 families lasted 4 days between 24 and 28 July 1936. The head of household were either labourers, non skilled or skilled workers or craftsmen. No information on sampling methodology. Information on the distribution of families by wage bands. This is the preliminary survey to the following survey.

1936

This official survey, the first significant household budget survey in Colombia, took place in 1936, and focused on the working classes in Bogota. It was enabled by the National Council's 1935 decision to begin seriously researching the cost of living, with a view to developing reliable price indices.[76] The Comptroller's Office made a detailed study of the living and buying habits, first of 85 families and later of 750 families, in various districts of Bogota. Eventually 225 records were selected. Survey was conducted in phases. First, special visitors went to the houses to record information in the last week of June, 1936 generating monographic records of the consumption of the households. In a second instance, throughout September 1936, books were distributed to the 750 working class families of all industries and trade, which were monitored daily. Also, 350 forms were distributed to middle class families, from which 35 records were selected. However, the report highlights the better predisposition and cooperation of the working class families. The forms distributed in September had all the goods listed in the monographic records of June.[77]

Researchers were particularly concerned with establishing international comparison between Colombia and the rest of the world. Detailed notes on other household budget surveys

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[76] This was also the case with the 1933 Argentine survey. It was carried out because a 1932 presidential decree gave the DNT the task to develop a cost of living index.
[77] Hermberg, P., 'El costo de la vida de la clase obrera en Bogotá', *Anales de Economía y Estadística*, 1:1, 1938, pp. 1-104.

from Latin America and the rest of the world are given. This and the reference to the Third International Conference of Labour Statisticians shows the extent of the ILO weight in the region, which had a turning point in the 1930s in general but also regarding statistics. An especial focus was nutritional parity (or lack of). The aim was to do a nationwide enquiry, but that was considered impossible, thus the focus on Bogota.

Detailed group data is presented, mostly organised by family size. Information on income and expenditure, including food quantities, is given. This is a very thorough report, with much more analysis than any of its regional counterparts.

1938

This is an official survey of the city of Medellin, taken between May 8 and June 7 1938, ordered by a decree. Luis B Ortiz C was in charge of it. The aim of this enquiry was to describe in an objective way through different dimensions how Medellin workers live and to determine their cost of living as well as how this cost varies. It followed the essential guidelines of the Bogota survey. The survey had three modules: demographic composition of households, economic situation and hygienic situation (which included housing, food and furnishing).[78]

Forms were handed out but supervision of the households existed throughout the whole month. 800 households received the forms. Only 575 of them were received. Only 201 forms were considered for analysis.

The report quotes the 1939 Caracas survey and a 1936/7 Buenos Aires enquiries to suggest that the final number of forms used (relative to the ones handed out) was better than in those regional counterparts.

The reference was found in the report that compiles information on several household budget surveys in Colombia in this period.[79] This is a very thorough report. The advantage of this survey is that it is part of a series of surveys carried out in different big cities of Colombia in the 1930s and 1940s. However, it is only for one city, for the working class and carried out for only one month.

1938

Between October and November 1938, and for a week at a time 10 households of Moniquira, in the Department of Boyaca were surveyed. Moniquira is the main producer of honey from

[78] F. de Abrisqueta, 'Las condiciones y el costo de la vida de la clase obrera en Medellín', *Anales de Economía y Estadística*, III, 1940

[79] Bernal Salamanca, R., 'Memoria de las encuestas sobre ingresos y gastos de las familias de empleados y obreros de Bogotá, Barranquilla, Cali, Medellín, Bucaramanga, Manizales y Pasto, Metodología aplicada para actualizar las bases de los índices del costo de la vida', *Anales de Economía y Estadística*, 4: 85, 1958, pp. 1-350.

sugar cane in the Department. In a more monographic study, small tenants living in families of at least three members were surveyed. The main objective of this study was to determine basic consumption to estimate a cost of living as well as to establish the economic conditions of those that grow sugar cane. The report quoted the Bogota and Medellin surveys. The budgets it presents are very detailed.[80]

Due to being a small and short survey, the report acknowledges its descriptive rather than statistical strengths. It argues it is not a conclusive/definite study on the cost of living, it is part of an initial essay. For the study, the value of the research is to describe practices common to all peasant families of the region in terms of what they eat, how the live and how they clothe themselves.

There is not too much information regarding how the survey was carried out. It is a rural, small and short survey, mainly a monographic study with little use. I believe it just fits within the others, so if we can expand its results to the whole rural population, it can be useful.

1939

This is an official survey of railway workers in the Antioquia department, carried out between 10 June and 11 July 1939. 300 forms were distributed among families of at least three members, though only 279 were filled regarding the standards required. The workers that received the forms should live within the railway path of that line and work in different sectors of the railway line. Thus, the survey involved different cities and towns. The enquiry had two phases: a- first a study of all the workers of the railway line was performed, which rendered 2320 families; b- actual survey of 300 families.[81]

Several types of forms were completed in this process. Only the draft forms that recorded the expenditures were filled in by the families. The form with demographic, housing and clothing information of the families and the final form with income and expenditure data were filled in by the inspectors.

This survey is part of the series of official cost of living surveys in Colombia between 1937 and 1947 that assessed working class income and expenditures on a city-by-city basis, for purposes of internal comparison and creating a CPI. Like the 1936 survey, it was the Comptroller's Office that fostered the enquiry. However, this survey is not summarised in the Salamanca 1958 article that summarises many of these surveys.

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[80] Luis B. Ortiz C, 'Ensayo sobre las condiciones de vida rural en el municipio de Moriquira-Boyaca', *Anales de Economía y Estadística*, 2:3, 1940, pp. 27-65.

[81] F. de Abrisqueta, 'El Costo de la Vida de los Obreros del Ferrocarril de Antioquia', *Anales de Economía y Estadística*, 4:3, 1941, pp. 1-79.

Data is mostly presented by family size. Information on income and expenditure group is also presented. The income data is according to the daily wage earned and it is comprised of 23 categories.

The report is very detailed, just like most of the Colombian reports. However, it is a biased sample, mainly geographically, as many different occupations were involved.

1940

This official survey of 53 families took place in July 1940 as part of the large government programme to develop a cost of living index with a series of household budget surveys. This survey focused on public sector employees as they were considered representatives of the middle class of Bogota. All types of families were surveyed.[82]

The report mentions the 1936 Bogota survey, the 1938 Medellin enquiry and the 1939 railway study. Like its predecessors, it was also an enquiry fostered by the Comptroller's Office.

There is information on income distribution of the sample, distributed in 21 categories, as well as data on expenditure, demographics, with particular emphasis on food consumption habits of the middle class.

The report is very detailed, just like most of the Colombian reports.

1943

A sociological survey of the small county of Tabio (Department of Cundicamarca), 51 km north of Bogota, undertaken by the Department of Agriculture (*Departamento de Tierras*) in conjunction with the US embassy, this was the first survey of its kind. The methodology was influenced by US Rural surveys. The county was representative only of the Savannah of Bogota, one of the most important agricultural parts of Colombia. However, it claims not to be representative of all rural Colombia.[83]

In this study, special attention was given to the demographic composition and trends, relations of people to land, levels and standard of living, social stratification and shape of the social pyramid, and major social institutions.

The objectives of the study were:

- to generate an enquiry on the social situation in a Colombian rural community
- to acquaint Colombian researchers with scientific methods used in rural sociological research in the US

[82] R. Bernal Salamanca, 'Las Condiciones Económico-Sociales y el Costo de la Vida de la clase Media en Bogotá' *Anales de Economía y Estadística*, 2: 19-20, 1946, pp. 1-95.
[83] T. L. Smith, *et. al.*, *Tabio: A Study in Rural Social Organization*, Washington, 1945.

- to carry out one research project from beginning to end.

The 517 participant households were selected using the 1938 census, and representativeness and exhaustiveness were attempted. All types of families were surveyed. The forms used were based on a North American template but were adjusted to the Colombian situation. Data given includes comprehensive sociological and anthropological data of the region. No income distribution information is provided

1945

This survey was carried out in the City of Bucaramanga during September 1945. We do not have the original publication yet, reference was found in the report that compiles information on several household budget surveys in Colombia in this period.[84]

1945

This was another study on the Colombian working class fostered by the Comptroller's Office and carried out by the national statistical agency. This survey was carried out in the City of Mariquita in 1945 considering 88 households and 639 individuals. The workers belong to the railway service that extends between Mariquita and Manizales. No methodological information is provided.[85]

Data are mostly presented by family size, but some data is also presented by income or expenditure group. 26 daily income wage bands are presented. There is a significant concern for nutrition in the data presented. Very detailed data and analysis.

Report enhances the fact that this study is part of a series of several enquiries on the workers of Colombia and it compares the results for the city of Mariquita with that of Honda, Bogota and Medellin, for example. The report claims that the income data provided and enquired was improved according to the experience gained from past surveys. The report also highlights that studies on living conditions, complemented by industrial and agricultural censuses, provide information on the key issues of economic policy and on potential solutions to the problems originated by production crises.

[84] Bernal Salamanca, 'Memoria de las encuestas sobre ingresos y gastos de las familias de empleados y obreros'.
[85] R. Bernal Salamanca, 'Las Condiciones Economico-Sociales y el Costo de la Vida de la Clase Obrera en la Ciudad de Mariquita', *Anales de Economía y Estadística*, 2: 35-36 (Supplement), 1947.

1945

This was another study on the Colombian working class fostered by the Comptroller's Office and carried out by the national statistical agency. It was taken between May 5 and June 4 1945 in the City of Honda (Department of Tolima). 150 surveys were distributed among households of urban industrial workers of the coffee, river transport and fur industries of at least three members. 112 surveys were finally considered. The purpose was to establish a cost of living index.[86]

It has references to the ILO's International Conference of Labour Statisticians. Data is mostly presented by family size, but some data is also presented by income or expenditure group. 19 daily income wage bands are presented. There is a significant concern for nutrition in the data presented. Very detailed data and analysis.

112 households, 1 month

1946

The study covered 418 families consisting of 2,841 persons in the city of Barranquilla. Data are for October 1946. Barranquilla is the capital city of the Atlántico department.[87]

The Report reiterates that this study is part of a series of several enquiries on the workers of Colombia. .Data are mostly presented by family size, but some data are also presented by income or expenditure group. 14 daily income wage bands are presented. There is a significant concern for nutrition in the data presented. Very detailed data and analysis.

Part of the cost of living investigations designed to compare cities within Colombia and develop a cost of living index. The reference was found in the report that compiles information on several household budget surveys in Colombia in this period.[88]

1947

This is a survey of the working class of the City of Manizales (Department of Caldas) throughout October 1947 of 270 households and 1797 individuals.[89] The report provides a comparison with the results from the other survey.

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[86] R. Bernal Salamanca, 'Las Condiciones Económico-Sociales y el Costo de la Vida de la Clase Obrera en la Ciudad de Honda', *Anales de Economía y Estadística,* 2: 15-16, 1945.
[87] R. Bernal Salamanca, 'Las Condiciones económico-sociales y el costo de la vida de la clase obrera en la Ciudad de Barranquilla' *Anales de Economía y Estadística,* 4: 40-42, 1948.
[88] Bernal Salamanca, 'Memoria de las encuestas sobre ingresos y gastos de las familias de empleados y obreros'.
[89] R. Bernal Salamanca, 'Las Condiciones Económico-Sociales y el Costo de la Vida de la Clase Obrera en la Ciudad de Manizales', *Anales de Economía y Estadística*, 4: 43-48, 1948.

Data are mostly presented by family size, but some data is also presented by income or expenditure group. 16 daily income wage bands are presented. There is a significant concern for nutrition in the data presented as well as for the housing situation. Very detailed data and analysis.

Part of the cost of living investigations designed to compare cities within Colombia and develop a cost of living index. The reference was found in the report that compiles information on several household budget surveys in Colombia in this period.[90]

1953

This is an official survey of the cities of Bogota, Medellin, Cali, Barranquilla, Bucaramanga, Manizales and Pasto. The survey in Bogota was taken throughout August 1953, whilst in the other six cities it was during October 1953. It focused on the urban, wage earning (employees and working class) population and all types of families, not just nuclear, traditional ones (parents and their children). Households of just two adults were excluded.[91]

The survey was carried out in three phases, using random sampling. The households were selected on the basis of the data of the 1951 census. Initially 1950 surveys were distributed, but only 1473 were used. The sample distribution is the following: Bogota 308, Barranquilla 295, Cali 310, Medellin 268, Bucaramanga 111, Manizales 121 and Pasto 60. The final sample had 432 employee households and 1041 working class families.

Three types of forms were used asking for information on: a-demographic and housing characteristics; b-incomes and expenditures on food, drink, fuel, cleaning products; c-expenditure on toiletries, medicines, clothes and services. Daily expenditures were recorded.

It is a very good survey with many charts that show the characteristics of the sample by income. The employee sample is divided in twenty wage bands and the working class in eleven.

1967-8

There is one survey of 2949 households in four Colombian main cities (Bogota, Medellin, Cali and Barranquilla) in May, August, November 1967 and May 1968. 798 households were from Bogota, 727 from Barranquilla, 636 from Cali and 788 from Medellin.[92]

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[90] Bernal Salamanca, 'Memoria de las encuestas sobre ingresos y gastos de las familias de empleados y obreros'.
[91] Bernal Salamanca, 'Memoria de las encuestas sobre ingresos y gastos de las familias de empleados y obreros'.
[92] R. Prieto Duran *et. al.*, *Encuesta de presupuestos familiares: Barranquilla, Bogotá, Cali, Medellín, mayo 1967-mayo 1968*, Bogotá, 1970.

Privately owned properties were surveyed. Stratified sampling was used in three phases based on the 1964 population census data. The survey was done by both the national statistical agency and the Universidad de Los Andes.

Sample is divided by income strata (high, middle, low), but no information on how those strata were estimated is provided, which is a problem. This was carried out to then generate data on consumption per income band.

There is continuity between this survey and the previous grouping of surveys, which allows comparison in time. Clearly, the advantage of this one is that it was carried out simultaneously.

MEXICO

Table A5 Mexico

Year	*1914*	*1922*	*1924*	*1930*	*1934*	*1935*	*1937*	*1938*	*1939*
Sample size				1944	281	91	125	86	328
Duration			1m	3m	9w	2w	3w	26w	3m
Region		N	N	N	MEX	MEX	MIC	MEX	N
Scope		W	E, W	PS	W	WG	Mining	W	R,W
Year	*1941*	*1941*	*1943/4*	*1956*	*1958*	*1960*	*1963*	*1968*	*1969/70*
Sample size	2796	419	145	5.7m	7.9m	1.7m	7.3m	8156	194
Duration		2w	6m	1m	1m	5m	2m	1w	3m
Region	central	OX	Valley	N	N	N	N	N	N
Scope	W	PW	Natives	all	all	U	all	all	MW

Key. regions: MEX=Mexico City, MIC=Tlalpujauhua, Michoacán, N= National, OX=Oaxaca. Scope: W=workers, E=Employees, PS=public sector workers, WG=workers of graphic arts, PW=palm weavers, MW=minimum wage earners, R=rural, U= urban

Summary

Much of the twentieth century research in Mexico was almost certainly triggered by research on the European continent. However, according to Bach (1935) the Aztecs were interested in equivalence scales well before Engel’s quets. Their equivalence scale was given in terms of tortillas.

Generally, the Mexican surveys in this period are rarely longer than a couple of months, which generates a problem regarding the representativeness of the expenditure data they collect. The surveys in the late 1950s are extremely large, much above the regional average. Also, they seem to be of a greater geographical coverage than its regional counterparts.

From the mid-1930s there seems to be a great effort from the national statistical agency to generate systematic and reliable data for the whole of Mexico, though comparable surveys focus mainly on Mexico City.

Surveys

1914

Bayardo Rodríguez,[93] suggests that all that remains of these surveys are 8 households for January 1914 and 11 for July 1914. We are not sure the survey documentation still exists.[94] The tables that do exist should probably be treated with some degree of care as it appears that these reports were given for an 'average' household with a given composition. We do not know how they chose to sample these individuals (or whether these are 'constructed budgets'). The survey gives a comprehensive list of expenditures that the household would have made. The survey itself is meant to represent an average expenditure during a one week period in 1914. However, there are some monthly expenditures for semi-durable goods.

1922

According to the Bureau of Labor Statistics' *Monthly Labor Review*,(1923)[95] there was a survey carried out throughout the summer of 1922 by the Mexican Department of Labour on the cost of living for workingmen in the different regions and industrial centres of the Republic. In the case of 4,100 families in the municipalities that form the Federal District, a more detailed study was made. The Review provides an average budget with information on food, clothing, housing and miscellaneous goods, but provides no other information on the survey.

1924

This Padrés survey[96] was found through references in Bach[97] and Silva Herzog.[98] For the latter, it is the first official survey of its kind as it was taken once the national statistical agency was set up. The survey is found in an article of the journal of the first Mexican statistical agency. The Padrés article cites the works of Le Play and Engel. It explains that the survey was carried out in six states: the Federal District, Jalisco, Michoacán, Mexico, Puebla and Veracruz among four categories of employment: employees, workers, miners and peasants/farmers. Within each category there was a division. Only families of 3 to 5 people were surveyed. The

[93] L. E. Bayardo Rodríguez, 'Historia del consumo moderno en la ciudad de México durante los años 1909–1970 a través de la encuestas de gastos familiares y de la publicidad en prensa', PhD Thesis, El Colegio de México, 2013.

[94] We have some photos from the Mexican National Archives, which contain some sort of either model household budgets or reports of such as part of compiling a price index.

[95] 'Cost of Living in Mexico in 1922', *Monthly Labour Review*, 16: 5, 1923, pp. 106-7.

[96] M. Padrés, 'Las Oscilaciones del costo de la vida en la Republica Mexicana', *Estadística Nacional: Revista Quincenal, Organo del Departamento de la Estadística Nacional*, 4, 1925, pp. 1–30.

[97] F. Bach, 'Un estudio del costo de la vida', *El Trimestre Económico*, 2:5, 1935, pp. 12-49.

[98] J. Silva Herzog, J., *Un estudio del costo de la vida en México,* México, D.F., 1931.

reports gave information on expenditure on food, clothing, rent, drinks, entertainment, and other types of expenditure. Monthly income was also surveyed.

The report provides average cost of living data for the four groups for families of 3 to 5 members by different types of expenditure for 1924. It also presents an average wage for the different employment divisions within the four categories by state. The following sections of the report provide an analysis on calories, prices. Thus, there is a detailed breakdown of expenditure on and quantities consumed of various food items considered to be part of the national basket of goods[99] by state and employment division for a family of 3 to 5 members. All other expenditure on food that is not in this item list is grouped together. The journal article also calculates the average caloric contents for the household implied by these expenditures. All data are presented in the form of averages of the household surveyed. All the data refer to the month of August 1924, so it seems like a valid inference that the survey was carried out around that time.

Padrés' article suggests that some form of results were published in issues of this journal in 1924, that we have been unable to locate. Thus we do not know the methodology of this survey nor the number of households surveyed. However, we have some information given in Silva Herzog, whoconsiders it an improvement on the 1922 study. This 'newer report' says that the 1924 survey was carried out by sending the questionnaires to Municipal Presidents throughout the country. Municipal Presidents were then to report back to the Statistics agency from which state level averages were worked out.[100]

There are numerous deficiencies for this data. However, the main one is the lack of information regarding how many households were surveyed.

1931

This study was run by the Office of Economic Studies of the National Railways of Mexico, supervised by the notable Mexican economist Jesús Silva Herzog.[101] The organisation was majority owned (58%) by the Mexican state.[102]

[99] Like corn, beans, meat, chillies, rice, eggs, flour, milk.

[100] For Silva Herzog, however, "there are reports that in many instances the once of the municipal President filled out the questionnaires without surveying households in their municipality, which considerably decreases the seriousness of any findings from this survey", Silva Herzog, *Un estudio del costo de la vida en México*, pp. 25-26.

[101] Silva Herzog, *Un estudio del costo de la vida en México*.

[102] They were expropriated in 1937, and were nationally run until the demise of Mexico's railway system in 1997. There now exist several semi-moribund railway companies in Mexico, but they only transport goods, and no passengers.

The study we currently have access to is actually the second survey in a series. The first was a study of the distribution of wages of railroad, government and other industrial workers. The study we have instead focuses on income and expenditure. It was the intention of Silva Herzog that his two studies cover the same groups. Unfortunately, due to lack of interest in industrial firms, and industrial relations issues with the rail workers this survey only covers public sector workers who work for the Mexican Treasury, who also helped to carry out the enquiry. This is probably the greatest limitation of this survey. However, the study is quite meticulous in terms of the survey instrument created, as well as being well aware of the issues posed by non-response bias. The objective of the survey was to generate estimates on the cost of living of the working class, and was used to inform a re-adjustment programme of the wages of the personnel of the National Railways organisation.

The report begins summarising international cost of living studies, and quoting the works of Le Play and Engel. It seems to summarises all the international surveys that were quoted in the report of the ILO's Third International Conference of Labour Statisticians of 1926. After this summary, as mentioned, the report comments on the Padrés survey and copies some of its data. It also has a copy of the form used in the 1931 survey, which was designed following the examples of surveys taken in the US and Europe.

This survey only covers public sector workers who work for the treasury. The survey is thus non random. The data are quite detailed.

The 1931 survey has information for 1,944 households throughout the months of September to December 1930. 11,185 forms were distributed, of which 4,084 were responded. The survey was carried out in various municipalities across the country with the following distribution of the 1944 final forms: Federal District: 970, Veracruz: 270, Tampico: 122, Progreso: 85, Puerto Mexico: 76, Mazatlán: 59, Nogales: 68, Nuevo Laredo: 119, Piedras Negras: 106, Matamoros: 69.

There are detailed breakdowns across 8 income groups on income (of 1927 surveys), and detailed breakdowns on expenditure in the following categories: rent; personal expenditure; extraordinary expenditure; meat, poultry and fish; milk, eggs, butter, cheese; cereals and legumes; bread and tortillas; other food; underwear; suits; hats and shoes; other clothes; fuel and electricity; culture; entertainment as well was fees for political parties or unions and other household durables and non-durables.

1934

The survey was carried out by the Mexican Statistics Agency, as attempt to improve upon the Silva Herzog study, over nine weeks between 1 July and 9 September 1934. The goal was to survey working class individuals. The survey was only carried out in Mexico City.

The main objective of the survey was to collect information for the development of a cost of living index. A secondary objective was to use the detailed data collected to generate monographs of the social and moral life of the working class and of its housing and hygiene conditions.

The lead researcher Bach aimed at observing 300 households for at least two months, and the 'best 30' for a whole year. Data exist for 281 families, but the year-long study was not realised. The selection of households was made by unions and employers across 32 different firms in Mexico City. They sought households of individuals between 4 and 6 members, which was then the average household size in Mexico City.

The report has aggregated data based on income groups as well as breakdown of expenditures for the main expenditure classes: rent, food, clothing, domestic services, entertainment, personal expenditure and other.

1935

This survey was carried out during two weeks, between August 6 and 20, 1935 to collect information on the cost of living of workers of the graphic arts of the Federal District. The study was carried out by the Social Work students of the *Escuela de Enseñanza Doméstica*, under the supervision of technical staff. The students visited daily the 91 working class households in order to the veracity and accuracy of their incomes and expenditures. The initial sample was of 113, but surveys were discarded since they did not provide information up to the standards required.

The sample was divided in five wage categories and focused on families of between 4 to 6 members, following the data obtained from the Bach survey. Very detailed data on expenditure, particularly food, is also presented by income categories. Other expenditure categories are housing, culture and entertainment, domestic services and clothing.

The occupational class was chosen because it was considered representative of the situation of the working class of Mexico City. However, the downside of the survey is that it focuses solely on one occupational class in one location. There is no detailed information about the sampling technique. The data are very detailed and there is very good disaggregated information for expenditure by weekly income.

1937

In the late 1930s, the Mexican national statistical agency began to carry out budget surveys and collect information on wages in order to produce a systematic study of the living conditions of the working class. Under this objective, three enquiries were taken.[103] The first one is the survey of 125 mining households in Tlalpujauhua, Michoacán throughout three weeks. We obtained the group data from the *Direccion General de Estadistica*'s yearbook. Aggregated expenditure data is provided that can be compared with previous surveys, and it is presented by weekly wage. Detailed expenditures on food are available. Income distribution data is not available.

1938

In the late 1930s, the Mexican national statistical agency began to carry out budget surveys and collect information on wages in order to produce a systematic study of the living conditions of the working class. Under this objective, three enquiries were taken.[104]

This survey of 86 working class households in Mexico City was a follow-up to the 1934 enquiry, and it followed a similar methodology. The survey was carried out during a 26-week period with the explicit goals of determining expenditures in broad categories (much as 1934) emphasising on housing, clothing and investment, such that a cost of living index for workers in Mexico City could be calculated.

Aggregated expenditure data are provided that can be compared with previous surveys. There are data on income distribution. We obtained the group data from the *Direccion General de Estadistica*'s yearbook.

1939

In the late 1930s, the Mexican national statistical agency began to carry out budget surveys and collect information on wages in order to produce a systematic study of the living conditions of the working class. Under this objective, three enquiries were taken.[105]

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[103] Dirección General de Estadística, *Anuario Estadístico de los Estados Unidos Mexicanos 1939*, México DF, 1941

[104] Dirección General de Estadística, *Anuario Estadístico de los Estados Unidos Mexicanos 1939*, México DF, 1941

[105] Dirección General de Estadística, *Anuario Estadístico de los Estados Unidos Mexicanos 1939*, México DF, 1941

The third survey was of *ejido* (farmers) households in a large bistate (Coahuila and Durango) area known as *La Comarca Lagunera*. The enumerators were employees of the statistics agency, and local school teachers. The survey began with 400 farming households, distributed in 23 population centres in the region. However, only 328 returns were deemed usable. The survey ran for 3 months. The data are given for both per *peso* expenditure and using the 'American' equivalence scale.

We obtained the group data from the *Direccion General de Estadistica*'s yearbook. Aggregated expenditure data is provided that can be compared with previous surveys, and it is presented by weekly wage. Detailed expenditures on food are available. Income distribution data are not available.

1941

This is another survey where all of the data is from the *Dirección General de Estadística* yearbook. Again, as the previous surveys the main goal of this publication is the replication of tables but is sparse with details on methodology. The aim of the survey was to generate information to estimate a cost of living index, more geographically representative than just for Mexico City.

The statistics yearbook explains that the survey covers 2800 households in the central region of the country, comprising the states of Aguascalientes, Guanajuato, Jalisco and Michoacán. 2,796 households are considered in the final data. The survey was run by 15 employees of the statistics agency who trained 230 enumerators in the region. The survey covered both rural and urban households in the same area and different types of occupations. There is no information on the duration of this enquiry.[106]

The survey is detailed. There is information by worker's occupation in each municipality, nested in each state. The number of households per cell range from 1–256. There are also data on the average expenditures and income for these households.

Expenditure is split into the same broad categories as with all surveys since 1925. We also have detailed expenditure data for various fine grained food categories.

1941

This is another survey where all of the data are from the *Dirección General de Estadística* yearbook. Again, as the previous surveys the main goal of this publication is the replication of tables but is sparse with details on methodology. The aim of the survey was to generate

[106] Dirección General de Estadística, *Anuario Estadístico de los Estados Unidos Mexicanos 1941*, México, 1943

information to estimate a cost of living index, more geographically representative than just for Mexico City.

There is another survey towards the end 1941 carried out in the Mixteca region of the state of Oaxaca due to a request from the Presidency. 419 families, mainly of palm weavers, were surveyed. Specialised personnel was behind the enquiry that lasted two weeks. [107]

The survey covered different types of occupations across the region. There is no information on the methodology followed. Data are quite detailed, particularly regarding food expenditure by occupation.

1943-1944

This is a nutrition study in four Otomi Indian villages in the Mezquital Valley of Mexico, two of which were surveyed from October to December of 1943, and the others in March to September of 1944. The Mezquital Valley lies 60 to 120 miles to the north of Mexico City. The four villages lie in the southern end of the valley about 75 miles from Mexico City. The people are predominantly Indian.

A record of family income and expenditure for food was kept for all families. In so far as possible the entire population of each village was examined A record of food consumption was obtained on both a household and an individual basis. Each family was visited daily for one week. Of the 226 families in the villages, 145 records were obtained.[108]

This enquiry is focused on nutrition and contains no income information.

1956

The statistics yearbooks for the interwar period as well as the early 1950s suggest that the last major scale survey run in Mexico were those in 1941. The 1950 census was taken as the base for all new research. The next incomes and expenditures survey occurred in 1956.

This survey took place during the presidency of Adolfo Ruiz Cortines. His administration was focused predominantly on improving living conditions, but at the same time he was also focused on reducing corruption in the public sector. Perhaps to further these goals his administration made two surveys, with the second being in the last year of his presidency.

This survey is the first nationally representative survey of Mexico. The Survey bureau of the Secretariat of Economy surveyed incomes and expenditures across the whole country.

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[107] Dirección General de Estadística, *Anuario Estadístico de los Estados Unidos Mexicanos 1941*, México, 1943 and Dirección General de Estadística, *Anuario Estadístico de los Estados Unidos Mexicanos 1942*, México, 1943.
[108] R. K. Anderson et. al., 'A Study of the Nutritional Status and Food Habits of Otomi Indians in the Mezquital Valley of Mexico', *American Journal of Public Health and the Nation's Health*, 36:8, 1945, pp. 883-903

The survey was designed with a statistical framework in mind and is perhaps the first random survey of the country. The design of the survey was clear, and the results document contains detailed information on survey design as well as the form used.[109]

In order to keep costs down the enumerators for the survey were school teachers, as this was thought would generate trust amongst families to reveal their true levels of consumption. We also have copies of the enumerator's manual.

The entire survey was carried out exclusively during a single month (October) in 1956. Whilst every state in the country was surveyed we are unable to break down the data beyond larger regions of the country. The data results that we have are given for 6 geostatistical regions. The survey interviewed 5.7 million households across the country.

1958

The July 1958 survey is very similar to the 1956 survey. However, in this particular instance we have detailed breakdowns of income and expenditure by income groups for each state in the Mexican Republic. 7.9 million households were surveyed. The other major difference with respect to the previous survey is the level of disaggregation. There is information per each state and expenditure group data for both urban and rural areas.[110]
7.9 million households, 1 month

1960

The 1958 survey was clearly seen to be incredibly expensive to run, as such the budget and the appetite for large scale surveys waned. The last survey in our time period of interest would limit itself exclusively to the 16 largest cities in Mexico and would attempt to be representative solely for these. *21,433 households* were interviewed. But as with its predecessors it is a random survey.[111]

1963

This is a sample survey organised and taken in 1963 by the Mexican Central Bank with the aim to forecast the internal demand for agricultural production between 1970 and 1975 due to the lack of updated information. The survey was designed and carried out by the firm CEIR Mexico SA. The survey allowed the estimation of per capita consumption of a number of agricultural

[109] Dirección General de Estadística, *Ingresos y Egresos de la Población de Mexico En el mes de octubre 1956. Investigación por muestreo*, Mexico DF, 1960.
[110] Dirección General de Estadística, *Ingresos y Egresos de la Población de Mexico En el mes de octubre 1956. Investigación por muestreo*, Mexico DF, 1960.
[111] Dirección General de Estadística, *Las 16 ciudades principales de la Republica Mexicana: Ingresos y Egresos Familiares. Agosto-Diciembre 1960*, Mexico DF, 1962.

products with the aim to estimate income elasticity. The selection of the urban and rural sample was based on the 1950 territorial distribution of population. The survey had three parts: one on demographic data, one on expenditure and one on income. A pilot survey was taken before the actual enquiry. The initial sample was of 5,070 families spread throughout 492 geographical units (327 rural and 165 urban) following the 1960 census. 4,650 households participated, which renders a 92% response rate.[112]

Stratified sampling was followed in stages, using around 250 interviewers. Field work was completed in two months, but in Mexico DF it extended for slightly longer. Monthly family income and monthly family expenditure data was collected. Income data is presented in nine categories. Expenditure information is highly disaggregated given the aims of the enquiry, particularly of certain food items. Data are presented divided in various categories, by size of city, by family household size, by the head of household's occupation.

The report clearly explains that given the aim of the survey, any other use of it should consider the original objectives and thus the potential limitations. It also highlights the limitations of these enquiries in general.

1968

In the first week of April 1968 the Mexican Central Bank carried out a survey that included both rural and urban households across Mexico.[113] A stratified three-stage sampling method was implemented, using the results of the 1963 household survey as basis.[114]

The aim of the survey was to generate information on the income levels and expenditure structure of Mexican families in order to have data that will allow the examination of consumption functions and income elasticity of demand coefficients for different goods. Other objectives were to be used as basis of the cost of living index as well as to quantify family characteristics needed for socio-economic studies.

The report has expenditure and income data. The sample is divided in seven monthly income categories. The publication presents substantial comment and analysis of the data. It includes quantities consumed of food items. The report has several tables, which it claims are presented following previous Mexican reports, what other countries usually report and the recommendations that appear in UN publications. There is a clear aim for continuity with other

[112] Oficina de Estudios sobre Proyecciones Agrícolas, *Encuesta sobre ingresos y gastos familiares en Mexico-1963*, Mexico DF, 1966

[113] In the state of Oaxaca there was a slight delay in the timings and in Mexico City the survey was taken throughout three more weeks.

[114] Banco De Mexico, *La distribución del ingreso en México, Encuesta sobre los ingresos y gastos de las familias 1968*, Mexico City, 1972

Mexican enquiries (particularly with the 1963 survey as it is explicitly referenced) as well an aim for standardisation in order to generate internationally comparable information. Among its advantages is that it covers both rural and urban households at a national level. However, it only lasted a week.

1969

This 1969 survey covers families subsisting on the minimum wage. 204 forms were handed out and information of 194 households was used taken from 171 cities, including Mexico DF. The national enquiry was carried out between January and March. It had 300 questions, covering the following topics: demography, education, culture, political and social participation, public health, religion, languages, social rights, economic aspects.[115]

The aim of the survey was to collect information on characteristics of family consumption. Sampling was not random as families were chosen by the pollsters. The report considers that the information of this study helps interpret and understand the data from the national statistical system.

The report reports statistics income groups. It places substantial emphasis on the quality of the household building itself. It contains income of the household head as well as the whole family income. It also contains simple categories of expenditure classes.

The group data that survives is highly aggregated. It may be of marginal interest, but the sample size is small and the small fraction of the overall population that it surveys, suggests that perhaps the 1968 survey by the Central Bank may be better.

B. Countries for which we have fewer surveys

Costa Rica

1948

This survey of 258 families - the first significant one in Costa Rica - was carried out by the Department of Social statistics with the intention of using it to construct a consumer price index based on data about the lives of urban working-class and middle-class households. The investigation was carried out in September 1948 when trained investigators went to interview households on their expenditure for the previous week. Those figures were then extrapolated

[115] Comisión Nacional de Salarios Mínimos, *Familias con salario mínimo: Algunas características económicas, sociales y culturales*, Mexico City, 1971

into monthly averages. Data for the San Jose only. Sampling techniques were used to get a representative sample. Families were interviewed. Not entirely clear how families were selected but a sampling method was established and followed and the report expresses success in that regard.

1958

A preliminary survey for the larger 1961 survey, this investigation was partly to test methodology. 1922 families. It focused on San José, and was carried out in October and November 1958. The intention was to update results from the 1948 survey, and to update the consumer price index. It was taken by the Department of Social Statistics. The geographical scope of this survey is greater than the 1948 one. No restriction on type of families. Random sampling was attempted. The families surveyed were 5% of the total in the San José metropolitan area and were selected by grouping households according to income then selecting 30 households from each income group to survey in more detail.

1961

An urban survey taken by the Costa Rican National statistical agency into the income distribution and living conditions in the metropolitan area of San Jose, with the aim of producing a Consumer Price Index. It took place over April, May and June 1961. 500 surveys were distributed, 483 families constitute the final sample size. No methodological explanation. Greater area covered than in 1959.

Dominican Republic

1969

An urban survey of 552 families, held in the capital Santo Domingo and conducted by a team of investigators supervising the keeping of budget books. The purpose was to develop a proper consumer price index, as the existing one was based on a 1941 survey. The data collection was funded by USAID. Survey was designed by CEPAL. Survey taken by the Banco Central de la Republica Dominicana and the Oficina Nacional de Estadística between January and December 1969. Stratified sampling on the basis the data from the 1960 Census. 606 families were chosen initially, 552 surveys were finally used.

El Salvador

1954

This survey taken by then national statistical agency was motivated by an interest in the living conditions of urban workers and a desire to construct a realistic Retail Price Index, and was the first of its kind in the country. It was carried out over 30 days between 25 May and 23 June 1954. Households selected randomly using information from the 1950 census. It covered 300 wage earners' families of five members each, in San Salvador, Mejicanos and Villa Delgado.

Guatemala

1946

A survey of living standards in Guatemala City, which took place during the month of August 1946 and was carried out by the national statistical agency. This was the first time such a survey had been undertaken in Guatemala, with the intention being to use the data to begin compiling a Consumer Price Index and get information on the different standard of living of families of different incomes. 'Typical' working-class, service sector employees, government employees and self-employed households were selected from 13 different districts in the city. Data on which to base the sampling was lacking do to a lack of appropriate census information. Thus, help was requested from different associations regarding the members that formed them, like trade unions of different occupations. Questionnaires were distributed among 495 families but only 179 were used. No information as to how these families were selected is provided in the report.

1952-1953

Survey of 10 cities (Guatemala, Escuintla, Quezaltenango, Coatepeque, Huehuetenango, Coban, Flores, Puerto Barrios, Chiquimula and Jutiapa) and households (two or more persons) of wage and salary earners between May 1952 and April 1953. Data was organised in 9 groups, classified by annual income. Survey of 776 households was meant to be used to update the weights of the cost of living index but weights remained the same. Taken by national statistical agency. We don’t have original report, so we have no more info on the survey, but do have data.

1966-1969

The third significant household budget survey in Guatemala, this was an academic-led survey in two parts - urban and rural - designed to assess the cost of living. The urban part of this nationwide survey (which included 2300 households) took place in five cities including the capital. Families were selected for representativeness. All types of families were considered, from a wide range of occupations. The rural part of the survey included 1759 households and took place in various regions across the country and it was only of salaried families. Sample survey that would take into consideration the regional differences across the country. Families were interviewed directly during a week. Particularly for the cities of Guatemala and Quezaltenango stratified sampling was carried out on the basis of the 1964 census. Particularly for the selection of the rural municipalities, the 1964 census was also used. 6 families per farm estate were studied. These families were selected randomly using the information from different farm/agricultural associations. Income data referred to a year whilst expenditure between a week or a year depending on the type. The survey was taken throughout the 52 weeks of 1969.

Honduras

1967-1968

This survey took place between 15 April 1967 and 14 April 1968, with the Honduras governmental statistical agency working in conjunction with the Ministry of Labour and ODECA [Organizacion de Estados Centroamericanos]. The central bank helped financially to pay for the enquiry. 1961 census information was used to stratify rural and urban areas and households were randomly selected with the strata. 2158 surveys were distributed and data was obtained from 1760.

Panama

1952

This survey in Panama City was undertaken by Pauline Paro, a U.N. consultant, in collaboration with the Panama Statistical and Census office. It was intended to form the basis of a new Consumer Price Index. Data was obtained by interviewing families 449 in 1953 about what they remembered of income and expenditures in the calendar year 1952. Working and middle-class households were selected from eight areas of the city. Data is for families that had an annual income up to B/13,000. A sampling method was applied.

Paraguay

1963-1964

The first significant survey in Paraguay, this was conducted by the International Labour Organisation for the purposes of developing a consumer price index. It was undertaken in conjunction with the Banco Central de Paraguay. Budgetary investigations of 791 working class urban households in the five main cities were undertaken with a combination of budget book and interview during the months of August and November 1963, and then in February, May and August 1964. Probabilistic sampling was followed on the basis of the 1962 population census. Data for 671 families exists.

Peru

1940

Survey of 81 families living in the city of Lima. Data was collected during the first week of November 1940. Surveyors had a list of families to visit and they visited 2 to 3 families. No information as to how that initial list was elaborated is provided. Working class households were selected, and data is presented by family size, occupation of head of household and income group.

Puerto Rico

1928-1929

This sociological survey conducted under the auspices of the Brookings Institute includes detailed reportage on the geography, climate and way of life in 'Porto' Rico [sic]. Work of scholarly character. Substantial amount of context and analysis of the island as a whole. More of a monographic work than anything else. The section on finances includes four forms of information on wages, all giving wages in income groups: 1. a reporting on wage differentials between different types of agricultural workers (Sugar, coffee, tobacco and fruit). This information was taken from plantation wage books and covers 10, 883 workers. Self-reported weekly wage data for 6, 398 adult male workers

1933

Study of rural families taken by the Insular Department of Education in 1933 of 150 families. We do not have the original report, so have no other information on the survey.

1936

This survey by the Puerto Rico Reconstruction Administration (PRRA) and the School of Tropical Medicine focused on workers in the sugar region [the Lafayette area of the island], and surveys all the 'colonias' in the region. 860 families were surveyed, of which there is economic data for 745. Sanitary inspectors, nurses and social workers surveyed the area, interviewing households on all aspects of life (health, house, furniture, land, livestock, food consumed, income, distribution of income, debts). They visited every house in the area.

1937

A rural household budget survey interested in living conditions among poor rural labourers. Data was gathered by the Health Division of the Puerto Rico Reconstruction Administration (PRRA) , and report made with help of Insular Department of Labour and BLS. Study of 3069 rural families of small farmers operating tracts of land of 5 to 34 ‘cuerdas’. The survey covers 470 rural barrios of 60 municipalities of Puerto Rico. Limitations of funds made it advisable not to extend the study to all the municipalities of Puerto Rico. The island was divided in 5 districts. The Treasurer of Puerto Rico gave the enumerators the necessary information as to the number of farms of 5 to 34 cuerdas in each municipality, name of owners, location. From this list, the farms to be visited were selected by the enumerators. The enumerators were instructed to see that the farms visited should be as scattered as possible throughout the barrio and that at least they should not be contiguous. They were further instructed to omit all farms not operated directly by owners or tenants.

1937

Part of the 1937-1940 series of Puerto Rico Reconstruction Administration/School of Tropical Medicine surveys into health and socio-economic conditions in rural areas of the island. This survey focused on the tobacco, coffee and fruit regions (regions in which more than 50% of agricultural workers were employed in these agricultural sectors). All 246 barrios in the relevant agro-geographic areas were investigated thoroughly, with nurses and social workers visiting households to question them on various aspects of health, social and economic life. No information on how families were selected, exactly for how long the households were studied, etc. Data on 5073 wage earning families.

1938

This survey of food consumption in households of 22 other towns and cities in June 1938 was carried out by researchers interested in comparing dietary patterns and nutrition across Puerto Rico. 2007 household reports were obtained, 1901 were used. No methodological information.

1939

An academic survey on food consumption in rural areas of Puerto Rico that began in August 1939. In each municipality studied, some neighbourhoods were selected that were seen as representative of the municipality. 5313 families lived in these neighbourhoods of which 439 were studied. No information of how this narrowing down was performed, only that it was done for cost reasons. No other methodological information

1941-1942

This is a comprehensive and significant survey of 4999 wage earners in Puerto Rico, carried out in 1941 and 1942 by the U.S. Bureau of Labor Statistics in conjunction with the Puerto Rico Ministry of Labor. Random sampling was used to get a representative sample and the survey was carried out by trained Puerto Rican investigators using a combination of budget book and interview methodology.

1946

An academic study undertaken at the University of Puerto Rico as part of renewing the Home Economics curriculum. 1044 households (601 urban and 443 rural) were selected using sampling to try to provide a representative group for analysis and surveyed for 1 week.

1952

Survey of 786 wage-earning households taken by the Department of Labor. Households were selected using random sampling. Data was collected in the month of July 1952 using a combination of budget-book and interview method.

1953

Detailed yearlong survey designed to update the consumer price index. Households from across the island were selected using random sampling. The report was divided into those households who had at least one wage earner paying income tax (677) and those who did not (1,868).

1963

A comprehensive survey undertaken using random sampling methods to select participant households from all areas of Puerto Rico and all income groups. 223000 families surveyed throughout a year by the Puerto Rican BLS.

Uruguay

1940

Survey carried out by the Direccion de Estadistica Economica del Ministerio de Industrias. We haven't found original report to know the methodological information of the survey, but have a secondary report that has data on 353 households.

Venezuela

1939

This investigation - the first of its kind in Venezuela - was concerned with the living standards of urban workers of Caracas. This survey is comprised of two smaller surveys taken in the city of Caracas, one of 213 households carried out in January 1939 (1599 initially distributed, though only 204 were useful) and one of 149 households (1485 initially distributed) carried out in February 1939 with monthly incomes ranging from 500 to 3,000 bolivares. The demographic of employed urban family-living workers (who volunteered for the survey for the chance of winning a prize) was the same for both surveys, and results are presented together.

1945

Undertaken in January 1945, this survey was of the households of workers (rural, urban and managerial) living in the region of El Tocuyo. Housewives noted incomes, expenditures and food consumption for 15 days in the month. The survey-takers were particularly interested in nutrition, with Dr. Bengoa being a leading expert in the field. No information as to how households were chosen. Information by type of occupation rather than income bands. 150 surveys were initially distributed, data is presented for 111 households.

1945

This survey took place in the months of June and July 1945. The purpose was to establish the living standards of working and middle class households in Caracas. The survey was the first large government survey in Venezuela and was the basis for the 1951 Cost of Living Index.

Data presented is particularly concerned with nutrition. No information on how the 2867 families were selected is provided.

1960

University study of 878 Caracas households that lived on 4,000 or less bolivares per month. The sample was selected in three stages and the urban households were classified according to the occupation of the head of household. There was an aim to generate a representative sample of four occupational groups: professionals, semi professionals, qualified/trained workers and non qualified/non trained workers.

1961

The objective of this survey was to investigate the cost and conditions of living in Merida, in part to look at the wellbeing of workers, in part to help inform the Banco Central (Central Bank) in considering a cost of living index, and in part to inform economics students in the methodology involved in undertaking such a survey and in processing the results. Households were selected using census information, then were interviewed on their expenditures between 8 and 21 March 1961.306 households were originally selected, of which the data gathered on 148 was suitable for detailed processing.

1962

The first national household budget survey in Venezuela, covering 15 cities, 5 smaller towns and 8 rural regions taken by the national statistical office. Prepared in conjunction with Luis B. Ortiz, a United Nations household budget survey expert, this survey took place in June-December 1962. Its information became the basis of a cost of living index. No methodological information. Sample is presented divided in 12 income groups. 4000 households were to be investigated, but information actually collected for 3697 families.

1967

As the 1966 survey had focused on Caracas,[116] this 1967 survey focused on the other four largest cities: Merida (264 households), Valera (360 households), San Cristobal (378 households) and Balinas (260 households). The survey data was collected over a fortnight in each city in the summer of 1967. Households of all occupations were selected using random sampling. Carried out by the Venezuelan Central Bank.

[116] No income distribution of sample in the Caracas report.

1968

Survey of 350 households carried out by the Venezuelan Central Bank in the cities of Puerto La Cruz and Barcelona between September and November 1968. In terms of the definitions used, the survey procedure and the presentation of the data, this publication follows that of previous enquiries of the city of Caracas and the one carried out in Merida, San Cristobal, Valera and Barinas. The survey was conducted in two phases. The first, called preliminary, established the family composition, housing characteristics and family income. The second, called definitive, determined daily expenditures. Stratified sampling was used. Different types of households were surveyed: urban, residential, ranches.

Appendix 2

Testing alternative methods of estimating inequality from grouped data

In order to sketch our methods here, we present some results from testing for the biases of different estimators of inequality measures. The testing approach employs bootstrap sampling. We repeatedly drew random subsamples from two different individual data sets, and from each subsample create a grouped data set this data is then tabulated with vary number of income groups created. Then for each set of grouped data, we make up to six different estimates of the Gini coefficient and various decile ratios using various estimation methods. We then compare these estimates with the inequality measure taken directly from the subsample of individual households, the average of the differences between these two measures across the 500 repetitions, is thus the bias of the estimators. The estimates were drawn for tabular data grouped by income ranging between 5 to 10 groups, as these are the most frequest numbers of groups in the tables we located.

Consider Table A1, which is taken from Gutierrez Rufrancos and Newell (2017). The data used to generate this table were from Ministry of Labour (). The table provides the evaluation of six methods for income inequality estmatioinm, as listed in the first column. Each cell can thus be thought of as our assessment of the bias associated with using this estimation technique. The 'Groups Naïve Frequency Method' simply assigns the group average income to each household in the group and then calculates the Gini coefficient using the usual unit record formulas[117] Thus we find that this first method overestimates the Gini on this dataset by between one and two points on average.

The second row gives the bias, similarly defined, of using Hermite interpolation within the groups, , as suggested by Gastwirth and Glauberman (1976).Gutierrez Rufrancos The third row reports the bias from a parametric approach, estimating lognormal parameters from an interval regression exploiting the upper and lower bounds of the groups. The fourth method simply estimates lognormal with an ordinal least squares regression on group means. The fifth method estimates Kakwani's Beta Lorenz curve (Kakwani, 1980), and the sixth method combines Hermite-interpolation with Beta Lorenz estimation see Gutierrez Rufrancos and Newell *op. cit.* for a discussion.

[117] In practice this was estimated using Jenkins (1999) module for unit record estimation in Stata -ineqdeco-.

Table B1: Bias on Estimates of Gini Coefficient using Income from Group data, UK 1953/4

# of Bins (Groups)	5	6	7	8	9	10	Rank
Groups Naive Freq. Weighted	0.010	0.014	0.017	0.018	0.019	0.020	1
Hermite Interpolation (bands)	0.041	0.038	0.036	0.034	0.033	0.031	5
Lognormal interval regression (bands)	0.014	0.017	0.019	0.021	0.023	0.024	2
Lognormal OLS	0.046	0.048	0.057	0.060	0.064	0.074	6
Beta-Lorenz	0.027	0.027	0.027	0.026	0.026	0.026	4
Hermite-Beta Lorenz (bands)	0.044	0.033	0.025	0.021	0.018	0.014	3

Notes to Table 1. Each cell gives the mean bias from 100 bootstrap replication of each group data estimation method, by the assumed number of bins or groups.

The last column of Table A1 ranks the estimators inversely with the size of the mean bias across the different number of group sizes. Across both datasets, Gutierrez Rufrancos and Newell op. cit. find the least-biased estimator to be the Beta-Lorenz. It characterises the decile ratios very well. It does not, however, provide the best estimate of the Gini coefficient. Where the data only provides interval information, the best estimator is the combination of the Beta-Lorenz and the Hermite interpolation. However, in some extreme cases this fails to resolve numerically the non-linear least squares. When this is the case, the suggested second-best performer is the interval regression based lognormal estimator. As a result, eleven of our twenty-five inequality estimates based on grouped data are estimated by Hermite-interpolated-Beta Lorenz, eight are estimated by Beta-Lorenz and six by the interval based lognormal estimator.

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