

# LATIN AMERICAN FOREIGN TRADE STATISTICS FOR THE 19<sup>TH</sup> AND EARLY 20<sup>TH</sup> CENTURIES\*

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## ABSTRACT

This essay aims to introduce an issue of the *RHE-JILAEH* dedicated to the reconstruction of historical trade statistics of Latin American countries. It comments on the early perceptions of the quality and utility of historical trade statistics and on the way in which more recent analyses have overcome the distrust that prevailed until the last third of the 20<sup>th</sup> century. It then summarises the different criteria and methodologies that have been used to assess the accuracy and reliability of trade statistics in order to make them useful for the purpose of reconstructing new, more complete and precise trade series or re-estimating those available. The introduction ends with a brief description of the contents of this volume.

**Keywords:** Latin America, reconstruction trade statistics, imports, exports, balance of trade

**JEL Code:** F14, N56, N76

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\* Received 26 March 2017. Accepted 27 September 2017. I thank all the colleagues who participated in this project for their commitment to our goals and for the careful reciprocal reading that allowed us all to improve our papers.

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## RESUMEN

Este ensayo se plantea como propósito introducir el número de la *RHE-JILAEH* que se dedica a la reconstrucción de estadísticas históricas del comercio de países latinoamericanos. Comenta las percepciones tempranas sobre la calidad y utilidad de las estadísticas históricas del comercio y la manera en que análisis más recientes han superado la desconfianza que prevalecía hasta el último tercio del siglo XX. Luego, el ensayo resume los distintos criterios y metodologías que se han utilizado para valorar la exactitud y confiabilidad de las estadísticas comerciales con el fin de hacerlas útiles para el propósito de reconstruir nuevas series, más completas y precisas, o re-estimar las existentes. La introducción concluye con una breve descripción del contenido de este volumen.

**Palabras clave:** América Latina, reconstrucción de estadísticas comerciales, importaciones, exportaciones, balanza comercial

### 1. INTRODUCTION

The study of foreign trade and its role in the economic growth of nations has been a favoured topic among economic historians and development economists. In the case of Latin America, the debate on this issue has led to extremely polarised views; for some scholars, the integration of Latin America into the world system represented the beginning of modern economic growth. For others, it had the opposite meaning, being seen as the origin of modern dependency and underdevelopment. In the centre of this debate lies the question of foreign trade as the first and, for a time, most important form of participation in the world system.

The lack of empirical evidence has often been a serious obstacle to settling controversies about these and other relevant issues (Carreras *et al.* 2003). Only rarely did Latin American states gather statistics on trade from the beginning of their existence as independent entities. In fact, for most of the 19<sup>th</sup> century information on this and other macroeconomic indicators is scarce and fragmentary. In the last decades, scholars have intensified their efforts at reconstructing foreign trade statistics in order to use them for purposes that include the construction of other macroeconomic indicators, the study of this dimension of economic activity and of its role in national economic development and for international comparison, to name just a few. In this issue of the *RHE-JILAEH*, we aim to contribute to this field by providing a set of papers that embrace the

challenge of revising or rebuilding trade statistics for a particular period within the «long» 19<sup>th</sup> century on a country-by-country basis. Depending on the state of the art for each country and on the sources available, some studies deal with both dimensions of trade (imports and exports) while others address only one of them; some revisit previous exercises and provide further analysis, whereas others make a first approach to the subject. Our goal is to put together, in a single volume, updated and critically reviewed trade statistics for five Latin American countries, namely, Argentina, Bolivia, Brazil, Honduras and Mexico. As these papers are part of a broader project, similar exercises may be published in subsequent issues of this journal.

### 1.1. Some general remarks on the study of trade statistics

There is a saying attributed to Benjamin Disraeli that reflects a widely held opinion about quantitative information: «There are three kinds of lies. Lies, damned lies, and statistics». Economic historians have learnt to deal with this kind of judgement, accepting the challenge represented by using quantitative data sensibly, but knowing also that, provided they are carefully scrutinised, statistics may be a powerful aid in our understanding of economic processes. As important as they may be, it is also true that quantitative data related to the past can hardly be found in a «ready-to-use» form. In one way or another, they must be constructed or *reconstructed* to be useful for historical interpretation. Reconstructing historical statistics is a complex analytical process. It requires a number of methodological tools, the adoption of certain criteria, as well as some knowledge of the historical context in which they were collected.

Trade statistics are the oldest and most consistent sets of data gathered by a public agency in almost any nation-state. The reason is quite simple: the regular recording of trade was crucial to fulfil a vital goal of any government, that of collecting revenue (Coatsworth and Williamson 2004). In early developed countries, such data started to be compiled as early as the 17<sup>th</sup> century. This interest is consistent with the fact that the consolidation of national power and sovereignty requires gaining control over the in- and outflows of goods to obtain fiscal resources from them. In fact, imposing duties on external commerce is the most basic form of sustaining the state apparatus (Helleiner 1972). Notwithstanding this, the official recording of foreign trade flows started rather late in most Latin American countries — Chile and Brazil being exceptional cases in this regard. In Mexico, Argentina and Uruguay it began only in the last third of the century, and in countries such as Peru, Bolivia and Honduras, even later.

Apart from being the oldest data series available, foreign trade statistics have an additional virtue. Unlike most of the quantitative data produced by a

public agency, the quality of trade statistics of a particular country can be contrasted against the same evidence as gathered by a disinterested counterpart, namely, its trading partners. This unique feature of trade statistics allows us to account for their reliability and accuracy, and in many cases, to identify possible sources of discrepancy and to correct them. In order to do this, it is crucial that statistics of foreign trade are (or are made) susceptible to international comparison.

Despite some early attempts at the standardization of trade records, their use for international comparison was uncommon until recent times. The reason seems to have been the lack of confidence in the comparability of data collected by different governments under very dissimilar criteria and with varied purposes. The general belief seems to have been that even when the statistics of many countries were available, they were hardly of any use for analytical purposes.

One of the first serious efforts to approach foreign trade statistics with the explicit aim of making international comparisons took place in the aftermath of World War II. Emerging from a stage of disruption in the world system, national governments faced the need to find markets and sources of supply and to reestablish trade routes and flows. They also had to achieve or maintain national solvency through import quotas and export goals (Allen and Ely 1953, p. 1). For all these purposes, dependable and comparable international trade statistics were of vital importance.

In 1953, Allen and Ely edited a volume containing the results of an international project concerned with the reliability of trade statistics and their possible use for comparative purposes. This group of scholars analysed official publications containing this type of information for a broad sample of countries over a long time span. They concluded that trade statistics were not deliberately falsified and their compilation was not arbitrarily made. In general, the discrepancies that could be found in the same data as published by different countries were due to several reasons that could be identified and explained. Once the sources of discrepancy had been detected, it was often possible to provide the adjustments necessary to make statistics uniform and apt for comparison (Allen and Ely 1953, pp. 24, 118-119).

The optimism underlying Allen and Ely's study was strongly contested in their time. In the same decade Oskar Morgenstern, an economic analyst and precursor of game theory, published a book titled *On the Accuracy of Economic Observations*. He aimed at criticising what he considered naive attempts at explaining complex economic phenomena through a limited and dubious set of quantitative evidence. After examining trade data from a group of countries for the 20<sup>th</sup> century, Morgenstern concluded: «even for ordinary description, which is in itself not intended to be an application of high-powered economic theory, the statistics are so grossly bad that for most purposes they must be rejected». (Morgenstern 1963, p. 143). It would not be too hard to challenge his assertions on this subject, given the nature of the data he chose. However, what matters here is to highlight the degree of

distrust and dispute that surrounded early attempts to open the field for the analysis of international trade using official statistics.

Early approaches to sources dealing somehow with Latin American foreign trade seemed to confirm that adverse perception. At least two important articles condemned any survey on the subject to certain failure. In 1960, Matthew Simon published an estimate of the historical evolution of the U.S. balance of payments. When he came to deal with American trade with Mexico, he did not even attempt to make use of Mexican trade statistics in order to collate U.S. data, but categorically stated: «The statistics compiled by the Mexican government on imports from the United States were inadequate» (Simon 1960, p. 636). Even more influential was the paper published in 1971 by D.C. Platt concerning Latin American trade figures before 1914. After listing in detail the many shortcomings to be found with those statistics, he summarised his skepticism quoting the pessimistic conclusion from a 1908 analysis: «you require to have a great deal of faith in order to feel that you are reasoning on a secure basis» (Platt 1971, p. 129).

However, efforts at gathering statistical information from different countries soon started to take hold within the discipline, fostered in part by the needs of historical research and the lack of alternative sources. Perhaps the best known example of this is the work by Brian R. Mitchell who, from the 1980s, compiled a series of volumes containing, among other series, official trade information for a comprehensive sample of countries over a very long time span (for recent editions on Europe and the Americas, see Mitchell 2003, 2007). Data collections of this kind were of a rather dissimilar quality and lacked a critical appraisal, but helped change the mindset on this matter. Instead of rejecting quantitative information of a historical nature as unreliable, it seemed appropriate to assess its sources and features critically, to make its flaws explicit, and to search for the means to improve its quality and usefulness.

## 1.2. Recent approaches and methods

In the early 1990s, some scholars undertook the task of assessing the reliability and comparability of historical trade statistics (Tena-Junguito 1989; Federico and Tena-Junguito 1991; Tena-Junguito 1992). They found that discrepancies in bilateral trade flows as reported by different sources did not necessarily result from faulty data, but from causes that were detectable and, at times, susceptible to rectification. Among the most important were different compilation criteria regarding the geographic origin and destination, coverage and classification of goods, and valuation systems; the inclusion — or not — of transportation and other costs in the recorded value of trade; contraband, under-recording and clerical errors<sup>1</sup>. Exercises of this sort

<sup>1</sup> For a review of these issues in current trade statistics see Kellenberg and Levinson (2016).

led to the growing conviction that early studies (such as those compiled by Allen and Ely 1953) were right in their main assessment. The statistics of the countries that became the main trading powers during the 19<sup>th</sup> century (Great Britain, France, the United States and, from a later date, Germany, a group of four countries — or G4) were generally of a good quality, while their weaknesses could be made explicit and accounted for, if not entirely corrected. As for the statistics of other countries, even if they were of a variable quality and reliability, many of their faults were also identifiable and, at times, susceptible to amendment. From this new perspective, comparison between countries was not only feasible, but could be used as a way to test the accuracy of any given country's official statistics and even to help fill gaps of information for particular flows, countries or periods.

This exercise encouraged scholars to work with foreign trade statistics of different countries in order to make them comparable, assess their quality and accuracy, and improve them. If official information from the country was lacking, they could resort to statistics from the main commercial powers, using bilateral flows of trade with the country as a second best alternative for rebuilding this country's value series of trade. In time, at least three different procedures to improve or reconstruct historical trade series have taken hold within the field. The first and simplest is applicable when a country's official trade statistics are available, complete, and presumably of good quality. A second approach departs from the absence of trade data from the country, in which case the reconstruction exercise must rely solely on the partner's official sources. A third, more complete approach, consists of the comparison of the country's own official statistics with those of its main trading partners on a bilateral basis. This requires, of course, the availability of both sets of statistics. Let us take a brief look at each of these procedures.

The first procedure consists simply of taking the country's statistics and trying to identify the sources of bias in order to explain them and, if possible, make adjustments that allow the original series to be improved. Possible biases stem from deficient systems of valuation, commodity classification standards, under-recording and contraband.

Valuation problems arise when countries used official or fixed prices instead of current market prices to calculate the value of trade, without updating those prices with due frequency (Prados de la Escosura 1981). Among countries using this kind of unit values were the United Kingdom (for imports until 1853) and France (for imports and exports until 1847). The bias created by this recording method may be corrected by replacing official prices with export prices registered at the place of departure (as in Rayes 2015) or with international prices (as in Tena-Junguito and Willebald 2013).

The problem with commodity classification arises when a country follows a fiscal instead of a descriptive criterion, or when it disaggregates some of its trade in detail while paying little attention to another part that it considers of lesser importance. Changes in the classification methods also pose

difficulties in long-term series. Certainly, these problems would not hinder the reconstruction of the total yearly value of trade, even if they affect a more in-depth analysis of its composition.

Under-recording may be associated with a number of circumstances, such as deficient gathering, custom rules and procedures, changes in the means of transportation, among others. For an example of the latter, before 1892 the statistics of the United States did not register trade that was carried out by land with its neighbouring countries, a mistake of growing consequences as railroad communication fostered commerce by land with Mexico and Canada. Under-recording of trade may also originate in the fact that, while dutiable imports (or exports) were subject to scrutiny by custom officials, those that were introduced free of duty were recorded less carefully. These types of bias may be corrected to the extent that there are alternative, complementary sources, which provide specific information in those regards.

Contraband is a distinct phenomenon that was common in many countries and resulted in the under-recording of trade. It was usually related to the existence of high tariffs<sup>2</sup>, and attributed to deficient custom administration, inadequate vigilance and insufficient customhouses. It is hard to measure the specific incidence of this problem in trade statistics, although it may be assessed resorting to witness reports and contemporary appraisals.

In sum, when the reconstruction of foreign trade values must rely only on the target country's own official trade statistics, the goal has to be constrained to solve some of the problems detected in the extant data. The outcome may be improved series of trade, that is to say, series that would have the advantage of being accompanied by an appraisal of their main features and overall quality. However, by this procedure the comparability and accuracy of the new series remain untested.

In the absence of a country's own trade statistics, the most common alternative to reconstructing its trade flows is by using the official statistics of its most important trading partners. For the many cases in which the latter were at the same time the main commercial powers (as, for the 19<sup>th</sup> century, the G4 mentioned before) the task seems feasible, as records are available and considered trustworthy. Even if this is true in general, official statistics from this G4 are not perfect, and some of their features are particularly troublesome in certain aspects. A good example of this is the United Kingdom. Despite the high quality of its trade statistics, the United Kingdom failed to register specie movements (i.e. to say, international transfers of gold and silver) until 1858; starting in that year, its records provide information by groups of countries instead of single nations. Because of this, the record of trade of the United Kingdom with those Latin American countries which, at the time, exported gold and silver (such as Mexico, Peru, Chile, Colombia or

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<sup>2</sup> Or to the bad habits created by the long existence of high tariffs, as neo-institutionalists would say, see Hodgson (2006).

Bolivia) is necessarily incomplete in this source. In order to fill this gap, a reconstruction exercise must resort to alternative sources.

Another frequent problem in this approach is the mistaken geographic assignment of trade. This issue stems from the fact that some countries recorded their trade according to criteria other than the final destination of their exports or the real origin of their imports. Moreover, even countries that used a more precise criteria for origin and destination of trade failed to register some flows that took place with countries that had scant international connections, which for this reason relied to a large extent on indirect trade (i.e. to say, trade made through a third country). Bolivia was an extreme case of this situation because of its lack of outlet to the sea after the treaty that ended the War of the Pacific with Chile (1884). Recent work has tried to assess the accuracy of geographic distribution in trade statistics (Carreras-Marín and Badia-Miró 2008; Carreras-Marín and Rayes 2015) and to reconstruct real flows for particular countries (Bonino-Gayoso *et al.* 2015).

Lastly, it must be taken into account that the result of this procedure will be an aggregate of the value of trade carried out with the group of trading partners selected (a G4 or bigger). In order to obtain the total value of trade, an estimate has to be made as to the «residual», that is to say, the value of the exchange with other nations that participate in the target country's trade.

This approach shares to some extent the disadvantages of the former, in the sense that there is no way to contrast the resulting trade series as long as there are no «mirror» statistics to compare with. In any event, the quality of the outcome will depend on the specific features of the sources (regarding the bilateral flows of each partner with the target country) and the complementary information available. In short, this procedure may offer a valuable option to attain an acceptable estimate of a country's trade flows over the long run when the country's own statistics are not available.

The third approach consists of comparing both sets of statistics (from the target country and its main trading partners) in order to improve or re-estimate series of trade. This purpose can be achieved by contrasting both sets of data, taking some degree of comparability as a proof of reliability and a measure to assess accuracy (Tena-Junguito 1992), and then adopting criteria and making adjustments to correct for possible distortions.

Even if trade statistics from the target country exist, there is no assurance as to their quality and reliability. For instance, as imports were heavily taxed, there was a strong incentive for smuggling; in some countries, this was also the case with regard to exports. Bilateral comparison with the statistics of the most important trading partners allows testing the degree to which under-recording, contraband and other circumstances created a downward bias in



the target country's trade records. The methodology used for the comparison departs from the simple fact that import trade from country X to country Y should equal export trade from country Y to country X, and viceversa.

For the pair of countries' statistics to be usable in this manner, it is necessary to make them uniform and then susceptible to comparison on a bilateral basis. For this, they must meet the following standards:

1. Trade statistics are usually recorded in the target country's currency. To make them comparable, they need to be converted into a common currency using the yearly market exchange rate.
2. Trade statistics may have been recorded including the cost of transportation, insurance and commissions (designated as CIF (cost, insurance, freight) values) or excluding those costs, at a free on board (FOB) or free alongside (FAS) basis. For a pair of statistics to be comparable, both need to have been collected on the same basis, or converted into it by adding or subtracting those costs<sup>3</sup>.
3. Trade statistics may have been captured using different conventions to account for a yearly period. Some used a calendar year (from January to December) while others used a variety of fiscal years (from October to September, July to June, etc.). In order to be comparable, the bilateral series of both origins need to be (or be made) uniform in this regard.
4. In the case of studies aimed at comparing international trade by products, the attempt to create uniform criteria for the commodity classification of trade becomes relevant. Depending on the period under study and the information available, an appropriate strategy for this might be to adopt the Standard International Trade Classification.

By comparing the pairs of series on a bilateral basis it is possible to assess the extent to which they are similar in terms of behaviour, levels and trends, and whether they have an acceptable degree of consistency over time. Some discrepancy is to be expected even if statistics are of acceptable quality. In fact, there are some legitimate reasons why differences between partner countries' statistics may exist. As long as these reasons can be identified and explained, they cannot be used to disqualify statistics as defective or even as inaccurate. This is in fact the second step of the reconstruction exercise: to identify the sources of discrepancy and, when possible, make the necessary adjustments to improve the comparability of each pair of statistics.

Recently, a number of scholars have published reconstructions or re-estimates of foreign trade series for Latin American countries using this procedure (namely accuracy analysis based on bilateral comparisons).

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<sup>3</sup> Then, for the purpose of presenting the balance of trade, imports must be CIF and exports FOB.

Sometimes they aim at building value series of a country's total trade (Bonino-Gayoso *et al.* 2015; Absell and Tena-Junguito 2016), while at others they take some specific lines of exchange (Yáñez and Badía-Miró 2007; Ducoing and Tafunell 2013). There are, of course, mixed cases, in which the method of comparing bilateral trade according to both partners' statistics must be complemented with the use of only the partners' aggregate series for periods in which no statistics of the target country are available (as in Kuntz Ficker 2002, 2007; Notten 2012). The most ambitious outcome in the use of international trade statistics with the purpose of reconstructing flows of trade is Federico and Tena-Junguito (2016).

### 1.3. The contents of this volume

In this issue of the *RHE-JILAEH*, we present five papers dedicated to the reconstruction of foreign trade statistics for the same number of Latin American countries using approaches of this kind. They all take advantage of previous studies made within the field and of the primary sources that were available to their authors. Some essays concentrate on the sources, requisites and methodological aspects of the reconstruction, while others provide means to improve the extant series. In some cases, the reliability of the resulting series is discussed in order to enhance their use.

In the first article, Agustina Rayes addresses Argentine official import statistics in order to assess their general quality and reliability. By means of contrasting them with those of seven trading partners, she assesses the accuracy of the value series, identifies some of the sources of discrepancy and offers some alternatives to improve import series for the years 1880-1913 in future studies. By presenting the series of total export values already published (Rayes 2015), this paper offers a new series of the balance of trade for Argentina during this period.

The second article, by Anna Carreras-Marín and José Peres-Cajías, deals with the case of Bolivia. Given the fact that this country started recording its trade rather late, their exercise covers the period between 1900 and 1950. The authors revise the extant series and analyse their reliability, identifying the most visible sources of distortion and stressing the effects that being landlocked may have on the mirror analysis. A corrected export series for Bolivia is presented for the first time in this article.

In the third article, Christopher Absell and Antonio Tena-Junguito revise official trade statistics from Brazil for the period 1821-1913 under the light of accuracy tests. Correcting some of the sources of discrepancy, they re-estimate import series based upon partners' sources and provide alternative series of exports under varying assumptions about the cost of transport. They also calculate a new import price index for most of this period.

In the fourth article, Rafael Ángel Ledezma offers an original reconstruction of the imports and exports of Honduras for the period 1880-1930 based almost entirely on primary sources, as very few previous studies of this topic exist for the years before 1900. Sources include statistics from Honduras, its main trading partners, as well as complementary — non official- information from different origins. Based upon an analysis of comparability of the different sources available, the author provides new foreign trade series, as well as an estimate of the balance of trade.

Fifth in order is the article by Sandra Kuntz-Ficker and Antonio Tena-Junguito in which, after offering an overview of the existing sources and literature, they estimate yearly value series of Mexico's foreign trade for the period 1821-1870. As official information from Mexico is scarce and fragile, the authors rely mostly on Mexico's main trading partners' information in order to build a first almost complete series of imports and exports for the five decades after independence, and an estimate of the balance of trade.

We hope that the reader finds this set of essays useful in at least two respects. First, because it shows the variety of sources available for the reconstruction of trade statistics, the difficulties that the exercise presents and the different ways to approach this task. Second, since it provides foreign trade series that have been newly built, revised or improved, for a group of Latin American countries over a long time span. Economic historians may use these series as a part of their own research, be it at a national or regional — Latin American level, knowing that they have been constructed with explicit methodology and criteria, and are to some extent comparable. Finally, scholars from these and other countries may find an incentive to undertake similar endeavours that result in more and better statistics for the purpose of historical research.

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