

Filling the Gap in Argentina's Inflation Data*

Alberto Cavallo Manuel Bertolotto
MIT Sloan and NBER *PriceStats and UdeSA*

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Abstract

The official consumer price index (CPI) of Argentina became widely discredited after January 2007 and the National Institute of Statistics and Censuses of Argentina (INDEC) ceased its production in December 2015, leaving the country with no official measure of inflation after this date. This gap in official data poses a major problem for researchers and policymakers who need access to longer time series. In this paper, we provide a consumer price index that uses official CPI data from 1943 to 2007 and chain it to an online price index which spans from 2007 to the present. The chained index will be updated regularly on a monthly basis until a new official CPI is released.

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1 Introduction

We construct and publish a consumer price index for Argentina from 1943 to the present by filling the gap that exists in official inflation data since January 2007 with an index developed by PriceStats, a private company based in the US that collects and uses online price data to compute inflation statistics in many countries.

Starting in early 2007, Argentina’s official CPI produced by the National Statistics Insitute (INDEC) went through a series of methodological changes that seriously weakened its credibility. The statistical offices of some provincial governments, such as those of San Luis and Mendoza, delayed the implementation of these changes and consistently showed a much higher inflation rate than the rate shown by the federal government’s headline CPI. These higher estimates were in line with results obtained by private-sector economists producing alternative price indices. Some examples include: Inflacion Verdadera (the first unofficial indicator that measured the inflation rate on a daily basis using online prices and a precursor of PriceStats), Buenos Aires City (a think tank lead by a former head of INDEC’s CPI team, published in 2009), and the Congressional Index (an average of private inflation indicators published by a group of national congressmen since 2011). In December 2015, when a new government was elected, INDEC halted the production of its CPI in order to re-evaluate its methodology and to try to regain its credibility. Since then, Argentina has had no official national measure of inflation. INDEC currently plans to launch a new CPI in the second half of 2016¹.

The aggregate price index is primarily designed for use by researchers and policymakers that need a long time series for Argentina’s inflation rate. We will continue to update and publish the index at www.inflacionverdadera.com until a new official CPI is released by INDEC.

Section 2 provides a brief overview of the literature regarding online price indices and how they complement official CPIs. Section 3 describes the methodology used to fill the gap in Argentina’s inflation rate, and Section 4 explains how to download the price index and its monthly and annual inflation rate time series.

2 Online prices as a complement of official CPI

The prices of many household goods can now be found online in many countries. The web offers a unique opportunity for the construction of innovative price indices. Online prices can be collected from websites more efficiently, with more frequency and at lower costs than offline prices by using a methodology called “web-scraping”. To do so, a piece of software connects to the webpage of a particular retailer and scans the underlying HTML code. It then records prices and details of individual products, along with identifying information used to track products through time. A more detailed description of this approach can be found in Cavallo [2015] and Cavallo and Rigobon [2016].

One potential criticism of online-based price indices is that not all of the products included in traditional CPIs are well represented online, especially in Argentina and other Latin American countries where internet proliferation is still relatively low. Prices for items such as rents, hospital procedures, and educational services are difficult to collect from online sources, and online-based CPIs do not directly cover these sub-sectors. However, these indices have been proven by a growing

¹The first attempt to recover its credibility was in January of 2014, when the NSO discontinued the Great Buenos Aires area CPI and released the National-Urban CPI. However, the new index was criticized similarly to its predecessor.

body of academic research to be able to closely resemble indices constructed from offline data. In particular, Cavallo [2013] showed that indices constructed from online prices approximate both the level and movements of the official inflation rates in several Latin American countries (Argentina being the only exception). Cavallo and Rigobon [2016] built on this further and found similar results when comparing online based price indices to the official CPIs of China, Brazil, South Africa, the UK, Germany, Japan, and the US. They showcase that this behavior also holds true at the disaggregated level, even in sectors with frequent hedonic adjustments. Cavallo [2016] uses online and offline prices collected simultaneously to document a high degree of similarity of price levels in large multi-channel retailers in 10 countries, and additionally shows that price changes occur with similar frequency and are of similar average sizes in both locations. Aparicio and Bertolotto [2016] present further evidence of the high correlation between online and offline indicators, and find that movements in online price series anticipate movements in the headline CPIs of France, Germany, the Netherlands, the UK, and the US. Other uses of these data include Cavallo et al. [2014c], Cavallo and Rigobon [2011], Cavallo et al. [2014b, 2016, 2015, 2014a], Cavallo et al. [2014c], Cavallo and Rigobon [2011], Cavallo et al. [2014b, 2016, 2015, 2014a].

In the case of Argentina, the greatest advantage of using online prices for inflation measurement is that these indices can be constructed remotely, independently, and without having to rely on the governments' data collection efforts. This ensures that inflation statistics can be provided on a continuing basis. Other advantages of online price indexes are discussed in Cavallo and Rigobon [2016].

The online data for Argentina used in this paper started being collected in 2007, and has been used for several academic and private initiatives, including InflacionVerdadera.com², [The Billion Prices Project at MIT](http://TheBillionPricesProject.com)³, and [PriceStats](http://PriceStats.com)⁴, a private company that publishes daily online price indices in 22 countries. The PriceStats Index for Argentina used in this paper to fill the gap in official statistics has been publicly available with only a ten-day lag since 2011. It has also been published by The Economist magazine since 2012 as a replacement for the Argentine official CPI⁵.

3 Chaining methodology

This section shows how to calculate a single long run time series from January 1943 to April 2016. The chained index uses three sources of information⁶:

- The headline CPI, based on prices of the Great Buenos Aires area (CPI^{GBA}), from January of 1943 to December of 2006.
- The CPI calculated by the local statistical office of San Luis province (CPI^{SL}), from January of 2007 to November of 2007.
- The online CPI developed by PriceStats (CPI^{ON}) from December of 2007 onwards.

²See www.inflacionverdadera.com

³See bpp.mit.edu

⁴See www.pricestats.com

⁵See <http://www.economist.com/node/21548242>

⁶The source file for INDEC's CPI is available at www.inflacionverdadera.com/sh_ipc_2008.xls. We used the series labeled "Nivel General" ("All Items"). This file was downloaded from INDEC's website in late 2009. At the time of writing, it can also be downloaded from INDEC's website at http://www.indec.mecon.ar/ftp/nuevaweb/cuadros/10/sh_ipc_2008.xls. The CPI for San Luis was manually copied from the pdf files located at <http://www.estadistica.sanluis.gov.ar/estadisticaasp/Paginas/Pagina.asp?PaginaId=76>

The methodological changes to the headline CPI started in January of 2007. We do not have any online data from this month to November 2007, so we use the price indices published by the statistical office of the province of San Luis. This index, which co-moved closely with the headline CPI before 2007, kept the original methodology for a longer period of time than the rest of Argentina’s provinces. Starting in November 2007, we use the online price index computed by PriceStats. While this index is constructed daily, we report monthly readings to make it consistent with the other indices.

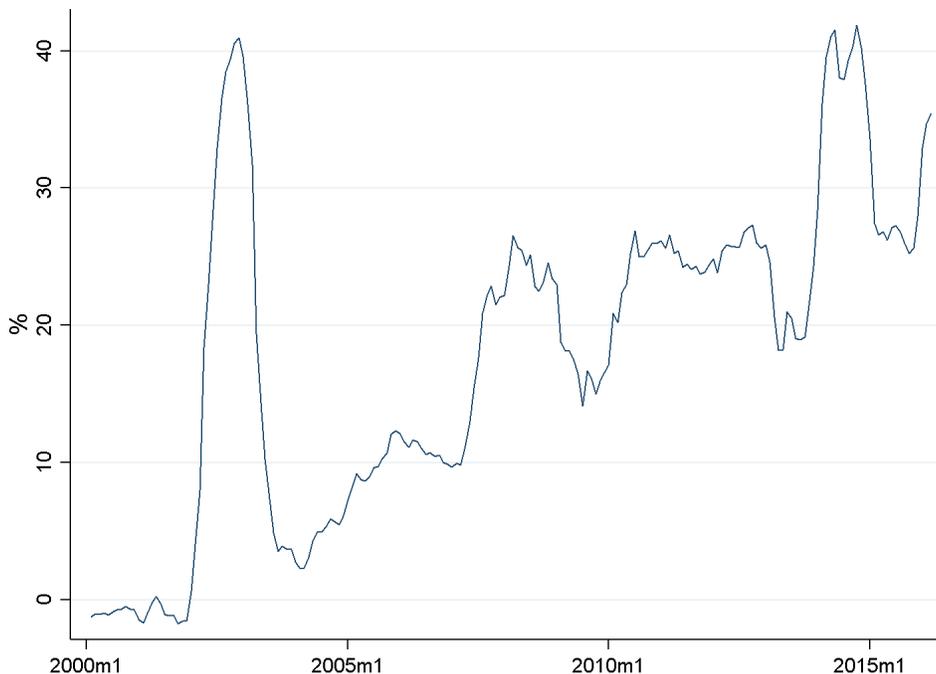
To chain the three price series, we follow the steps below:

1. We take the online index (CPI^{ON}), which is normalized to 100 on the last day of October 2007.
2. We re-base and chain the San Luis index using the formula $\frac{CPI_t^{SL}}{CPI_{11/2007}^{SL}} \cdot 100$.
3. We take the value of the re-based index in December 2006, which is equal to 84.52.
4. We re-base and chain the Argentina CPI using $\frac{CPI_t^{GBA}}{CPI_{12/2006}^{GBA}} \cdot 84.52$.

The final series extends from 1943 to April 2016 and provides an accurate measure of Argentina’s inflation rate in the desired time periods.

Figure 1 shows the single long run time series from January 1998 onward. The full time series, from 1943 to 2016, is available online for free, as explained in the Section 4.

Figure 1: Inflation rate (%yoy)



4 How to download the data

The full CPI series is available for download at www.inflacionverdadera.com/Argentina_inflation.csv. The file is in “csv” format (can be opened in Excel) and contains the index, monthly (“mom”)

and annual (“yoy”) inflation rates on a monthly frequency. The data will be automatically updated on the 10th of every month until the new official CPI is released. For example, on June 10th, 2016, we will publish the information until May 2016.

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