■ RESEARCH ARTICLE

The Inflation of the Cuban Peso: From the Central Bank Allegations to the Cuban People's Perceptions

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ABSTRACT: This paper displays the monthly and yearly currency exchange inflation of the Cuban Peso (CUP) in the national black market since the appearance of the Ordenamiento policy. Being served by ElToque's advanced algorithm coverage on more than 150 online marketplaces, the public historical data on the value of the CUP is converted into monthly and yearly data on exchange rate inflation. The paper, moreover, aims to discuss the Central Bank's matching of exchange rate data with factual popular behavior in contrast with the findings on the black market, which effectively proved abrupt differences. Thus, the black-market data insights represent key information while further research is being conducted on the Cuban economy.

KEYWORDS: Economics; Monetary Policy; Cuba; Tarea de Ordenamiento; Cuban Peso.

Introduction

Despite a recent sequence of measures centered on a slow-paced liberalizing of the economy, Cuba remains an isolated, noteworthy economic scenario that behaves far-distant to the manner free-market societies do. The Castro brothers' legacy has shaped the official economic activity to virtually be entirely centrally planned, portraying the closest resemblance in the 21st century to the Socialist system as Marxism conceives it.[1] Before analyzing specific factors of the Cuban economy, it is imperative to make sense of an overview of the political context wrapping the monetary phenomena this article addresses.

Historical Context:

Consequent to the collapse of the USSR in 1991, the almost unique trading partner Cuba depended on vanished alongside the subsidies and privileged prices it offered. This way Cuba endured what can be highlighted as the most severe crisis of its history, denominated by the government "Período Especial" or "Special Period". The critical financial downturn obligated the country's high economic mandate to set measures forward, aiming to obtain foreign capital and investment urgently. In 1994, then-President Fidel Castro introduced a currency artificially parallel to the Dollar, the Cuban Convertible Peso (CUC), which was to be put into circulation together with the already existent Cuban Peso (CUP) to promote foreign currency collection.[2] The measure came after Law 140 of August, which declared the termination of the persecution of trading in US Dollars, quickly booming the economy's dollarization. The government then gradually commenced pressing economic actors –mainly from tourism– to exchange their US Dollars for CUCs until the CUC had gained coverage over the totality of the economy in 2004. It was after that the Cuban Central Bank (BCC), through Resolution 40, prohibited again the usage of Dollars in the economy in 2004, having seized all the value Dollars induced to the economy and being left with a dual currency system.[3]

As a result, two parallel economies had emerged in the country: the self-employed (officially denominated "cuentapropistas"), tourism workers, and Cubans who perceived transactions by family members abroad, and a state-employed majority with incomes in CUP. This created abrupt inequalities since the purchasing powers of both populations were now deferring significantly. Correspondingly, when former president Raúl Castro took power after the age limitations of his brother Fidel Castro, the Communist Party of Cuba (PCC) considered in 2011 for the first time what would be then labeled as *Tarea de Ordenamiento* or "Ordering Task."[4]

The "Ordenamiento" Task:

Ten years after being declared a national aim by the Sixth Congress of the Communist Party, and after being postponed three times since the first announcement of its implementation in 2013, the decree-law 17/2020 came into force on January 1st, 2021.[5] It comprehended an all-encompassing reorientation of what was previously established to be the country's fiscal policy and monetary structure. The most conspicuous of its implications, the monetary unification, eliminated the CUC (Cuban Convertible Peso) after almost three decades of national circulation, leaving the CUP (Cuban Peso) as the only national currency in official circulation. This occurred as a result of the overwhelming national and international economists' consensus on the inefficiencies of the dual currency system established by Fidel Castro in the 90s, which besides said population segmenting critiques, had been described as incentivizing importations but deterring exportations, distorting prices, and lowering labor productivity.

The Ordenamiento introduced furthermore a groundbreaking rescaling of wages, with a salary enlargement that averaged 4.9 times the previous total income of the population. Exemplary, the minimum wage, which 24.700 workers perceive was incremented 5.3 times (in 530%), signifying that since the gross minimum monthly income of 2019 was fixed at 400 CUP (US$ 17) under the new economic order, it was adjusted to be 2100 CUP, or US$ 88.[6]

Under consideration of the self-declared Socialist nature of Cuban governance, such growth in national income thus relied

DOI: 10.36838/v6i7.2

wholly upon state-owned companies. The measures were consequently translated into an immediate parallel skyrocketing in prices for national consumption, along with a particularly significant new expansive monetary policy. The responsive growth in the monetary supply of the Cuban Peso was far from being accompanied by an equivalent augmentation in the goods and services produced by the country. Therefore, the solely nominal income expansion brought by Ordenamiento's policies constituted the onset of utterly altered tendencies for the Cuban Peso's inflationary panorama from January 2021 onwards about the previous moderated trends.[7]

Outcome and Current Situation:

Far from achieving the intended monetary unification, the Ordenamiento partially dollarized the economy, leading to a continuous devaluation of the CUP. Accordingly, these measures have been considered one of the main factors behind the aggravation of the Cuban citizenry's economic crisis for the past decades. It perpetuated previous present underlying issues: notably the increased inflation, and as a result, spiraling prices, food and medicine shortages, and pressure for closures of the country's scarce profitable companies accompanied by its employment opportunity cost.[8,9] The national populace share that declares to sense a coherence between the quality of commodities and their new prices, and considers also the new prices coherent with the new wages was almost nonexistent. This phenomenon points to a consensus of the failure (or even counter-productive outcomes) in the tangible perception of purchasing power brought by the applied measures.[10]

The outcome has even put forward the Cuban government to acknowledge the currency's inflationary disquietude for the first time since the pre-introduction of the CUC in the '90s. In the first almost two years of Ordenamiento (from January 2021 to September 2022), the Cuban government recognized an 86% inflation of the CUP (24% for 2022 until September and 70% for 2021) through its official tool for public data offering: the National Office of Statistics and Information (ONEI). Nonetheless, estimates indicate that for the same period, the authentic CUP valuation occurring in the free black Cuban market went from around 40 CUP per US Dollar to 180 CUP per US Dollar (~350% monetary inflation), which quadruples the official inflationary data offered by the ONEI.[7]

The current elevated inflation finds its main roots in the growing currency speculation, which is simultaneously a result of Dollar scarcity due to limits on remittances, high demand for cash Dollars for migration purposes, and mainly the restrictions imposed by the government and Central Bank on currency exchange. As article seven of the decree-law 17/2020 (Ordenamiento) mandates, "the Cuban Peso's exchange rate facing foreign currencies is determined by the Cuban Central Bank (BBC) and is published daily on the website of said institution"; the authorities recognize no other exchange rate.[8]

The Paper's Purpose:

The accountability of the methods and evidence used is one of the key factors when offering data on factors such as inflation. A great part of the international community nonetheless relies on the public data provided by the Cuban government, which in many cases suffers from political bias and potentially intentionally inefficient methodologies that can alter results.[11] The consequent enormous knowledge gap on the economic performance of an entire nation remains thus a reality to the international community. This has led many notable economists' work to contrast governmental official data.[11-13] Their investigations have been crucial in exposing the obstacles while performing research on the country's economy, having also had key findings on historical income and the estimation of the factual GDP of the country. Despite this, no formal research exploring the specific effects of the Cuban monetary policy on the inflation of the Cuban Peso could be found in this investigation, setting a knowledge gap, especially after the turbulent atmosphere the Ordenamiento measures settled.

This investigation aims to comprehensively display the monthly and yearly inflation of the Cuban Peso since the application of the decree-law 17/2020 in January 2021 based on a rearrangement of historical data of daily exchange rates. Parallelly, it is an objective to confirm if the found empirical evidence can back the publicly vocal distrust of the government's public data offering. It is worth highlighting that in such a sense, the investigation scope limits itself to monetary inflation, comprehending the fluctuation of the value of the national currency. For this, the differences between the official historical exchange rate of the Cuban Central Bank and the historical exchange rate in the free black Cuban market will be contrasted. Acknowledging the rising relevance of digital marketplaces as monetary trade persecution grows, the paper utilizes ElToque's daily data on CUP-US$ digital monetary exchange offers

Data and Methods

Data:

This investigation will use two main inflation datasets to comprehend such differences. One of these will be the official data the Cuban government offers through the Cuban Central Bank and the National Office on Statistics and Information (ONEI). At the same time, the other will be the one on historic black market daily valuation, based on the product of ElToque's datasets. It is worth highlighting that ONEI's complete public database on its website has remained inaccessible due to server malfunction. Therefore, to supply this information, a publication of the Central Bank referencing ONEI and the Ministry of Economic and Planification data on monetary inflation on a more specific time-lapse (Feb-Oct 2021) will be utilized.[14] On the other hand, the second source is a popular independent platform, which through an advanced algorithm that collects and interprets inputs of monetary offer and demand across more than 150 digital markets, has been able to accurately estimate the daily valuation of the Cuban Peso in relation with the Dollar and other currencies since 2021.[15] The algorithm counts with several measures to prevent alteration outcomes, such as being based on a data median obtention instead of a mean to maintain the data less sensitive to extreme and unstable values; filtrating repeated announcements across groups; and eliminating values with anomalies (over +three and under -three unities of CUP of the day's valuation) that could potentially alter results.[16]

The International Fact-Checking Network is one of the organizations endorsing the effectiveness effectiveness and integrity of ElToque's data, having even been awarded funding to continue its revealing, non-partisan, fact-offering labor.[17] ElToque, in this manner, is, besides being an analyzer of the inflationary situation, a tool of reference for the Cuban population while deciding the rates it will offer and acquiring Dollars. This close resemblance of the Cuban panorama expressed in ElToque's data –which has a wider coverage than just inflation– has made it an important source for the empirical work of economists and sociologists focused on Cuba, many of which are cited in this paper.

Methods

Given the sole existence of daily data of the informal market, to find the monthly foreign exchange rate inflation from January 2021 to August 2023, the daily valuation exactly before and at the end of the respective analyzed month is being contrasted. This is done using the inflation rate formula. The valuation left on the last day of the previous month (A) is subtracted from the value of the last day of the analyzed month (B). After that, following the inflation formula, the percentage that the result represents of the initial value (A) would be the total inflation for a specific month. Exemplary: If the CUP's valuation on July 31st was 55 CUP per US Dollar, and for the previous month's last day, June 30th, it was left at 50 CUP, the foreign exchange rate inflation for July would be considered 10%.

$$\text{CUP Exchange Rate Inflation} = \frac{(B-A)}{A} \times 100$$

The same pattern is followed for the yearly foreign exchange rate inflation analysis. The valuation left on the last day of the previous year (A) is subtracted from the value of the last day of the analyzed year (B). After that, following the inflation formula, the percentage that the result represents of the initial value (A) would be the total inflation for a specific year. Exemplary: If the CUP's valuation on December 31st of year X was 165 CUP per US Dollar, and for December 31st of the previous year (X-1) it was left at 100 CUP, the foreign exchange rate inflation for year X would be considered to be 65%.

For the exceptional year of 2020, which does not have data, the value of January 1st, 2021, will be regarded as B, and the monetary parity (1 USD = 1 CUC = 24 CUP) that was still effective at the beginning of 2020 will represent the value A.

Results and Discussion

The results expose the first comprehensible and explicit dataset on the currency exchange rate inflation of the Cuban Peso expressed monthly and yearly. Table 2 quantitatively reflects every month's respective inflation from January 2021 to August 2023. On the other hand, the chart in Table 1 offers the same data in a graphic manner that enables the visual comparison of the monthly data in a timeline that starts with applying the Ordenamiento measures.

Table 1: Monthly black market exchange rate of the Cuban Peso about the US Dollar.

Month	2021 CUP Infl. (%)	2022 CUP Infl. (%)	2023 CUP Infl. (%)
January	16.3	38.9	-3.5
February	3.2	0.1	9.1
March	2.4	3.0	2.2
April	7.9	10.2	2.7
May	20.8	-16.3	3.7
June	-9.4	14.7	5.1
July	3.4	3.7	10.7
August	0.8	28.3	-3.1
September	7.4	35.9	—
October	4.6	-16.2	—
November	0.1	6.1	—
December	5.9	-2.9	—

Table 2: Monthly black market exchange rate of the Cuban Peso about the US Dollar.

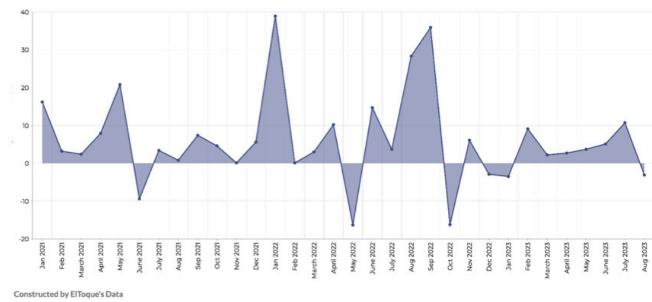


Table 3 contrasts the differences between the Central Bank's exchange rate data and the black market exchange rate data under the findings expressed in Table 2. Its coverage limits itself to the time-lapse offered by the Cuban Central Bank's referred charts (Feb - Oct 2021). By observing the red line representing the Central Bank's exchange rate inflation alongside the blue line representing the black market's exchange rate inflation, the graph confirms and further understands an evident unmatching between both sources. It is visible that the data offered by the Central Bank data is far from being as stable as it aims to have inorganically fixed and as it aims to appeal to the international community.

Table 3: Contrast between BCC's official exchange rate and black market exchange.

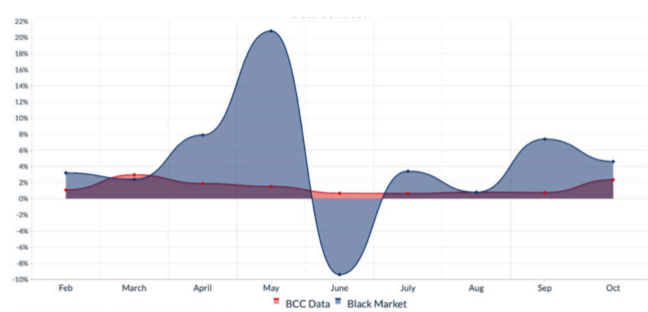
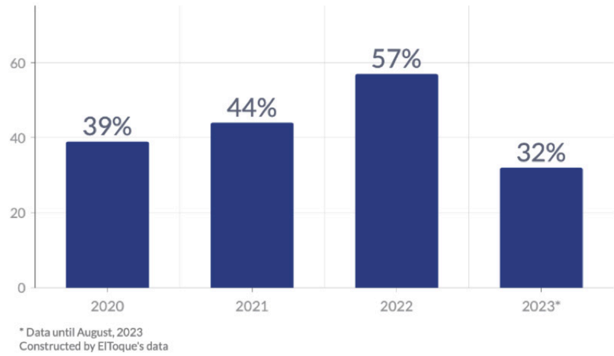


Table 4 displays the inflation of the Cuban Peso (CUP) currency exchange rate in percentages calculated every year. It offers the data from 2020 (when the *Ordenamiento* measures

DOI: 10.36838/v6i7.2

were announced), 2021 (when the *Ordenamiento* measures came into force), and 2022 until 2023, with data until August.

Table 4: Yearly augmentation of US Dollar cost in Cuban Pesos in the Cuban black market.



Conclusions

Given the political atmosphere, access to official, reliable information can be non-existent in the investigators' journey to shine light onto such an under-understood panorama. Since their announcement, the Ordenamiento measures have brought a new example of this phenomenon. For the first time in the century the monetary exchange rate inflation of the Cuban Peso gained considerable attention, becoming not only a disturbance for the common Cuban society but, moreover, a statistical measure that governmental sources have –for many– doubtfully disclosed, resulting both from a failed attempt to unorganically fix the value of the national currency at a desired exchange rate and from an aspiration to mold the Cuban economy's international image.

Aiming to approach the reality of the perceptions amongst the Cuban population, this investigation utilizes data that emerge from daily median exchange rates in more than 150 online marketplaces under the coverage of *ElToque*'s algorithm. This daily information is adapted to responding to more long-term periods: monthly and yearly exchange rates. In such a manner the information offered by the Communist Party of Cuba (PCC)'s official data-sharing instruments is contrasted.

The results confirmed the abrupt difference between the exchange rate provided by governmental sources through its official data-sharing instruments and the one being undergone by the population. It moreover gave specific insights into the considerable devaluation the CUP had endured for the past few years, with 67% for the year 2020 when the measures were announced, 80% for the year 2021 when the measure came into force, a 136% inflation for the year 2022, and a 29% for the year 2023 up until August.

The authentic and explicit exchange rate inflation data of an entire nation unfolded by this paper has seemingly remained unrevealed. As a result, these findings can have a crucial role while exhibiting correlations and ancestry with economic seasonal trends such as repetitive fluctuations of tourism flows or agrarian seasonal productivity. It could represent a relevant tool for comprehending the effects of other fiscal or monetary political measures taken within the timeline. The information found in the present article thus has the potential to be a crucial piece in the construction of further research regarding subsequent aspects of the Cuban economy and society.

Acknowledgment

I would like to express my deepest gratitude towards Dr. Iva Bimpli and Daryn Howland for their invaluable support and guidance throughout this research endeavor. The paper's construction path faced uncountable obstacles regarding information accessibility, to which their expertise, unwavering encouragement, and insightful perspectives have played an instrumental role.

I attest that this paper's ideas, graphics, and writing are entirely my own.

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Alejandro Abuin Siret was born in Matanzas, Cuba, where he ignited his special interest in the study and understanding of the Cuban economy and society, particularly its fiscal and monetary policy. He is also involved in understanding the functioning of shadow economies and their social impact. He currently lives in Lima, Perú, and is involved in the organization and development of several projects aimed at the promotion of economic and political knowledge among the youth, predominantly the Peruvian Economics Olympiad; as well as various debate conferences.

DOI: 10.36838/v6i7.2