Does dollarization have an impact on economic growth?

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Abstract: Many developing and undeveloped countries, grappling with issues such as hyperinflation, corruption, high unemployment rates, poverty, and financial instability, often view dollarization as a potential solution. Dollarization involves adopting the US currency as the official or parallel currency, a strategy observed in countries like El Salvador, Ecuador, and Zimbabwe. The purpose of this research is to compare the impact of dollarization on real gross domestic product (RGDP) to that of countries that did not adopt dollarization. My results indicate that dollarization does indeed affect economic growth. These findings demonstrate that dollarized countries experience a higher percentage change in RGDP compared to countries that did not adopt dollarization.

I. Introduction

Dollarization, the adoption of the US dollar as the official or parallel currency in a country, has been a subject of significant interest and debate among policymakers, economists, and scholars worldwide. Many developing and undeveloped nations grappling with economic challenges such as hyperinflation, corruption, high unemployment rates, poverty, and financial instability often consider dollarization as a potential solution. The adoption of the US dollar as the primary means of exchange has been observed in countries like El Salvador, Ecuador, and Zimbabwe, among others, and serves as an idea for the future direction of the Argentine economy.

Javier Milei, the current President of Argentina, has significantly contributed to the discourse on dollarization, advocating for its potential benefits as a means to address economic volatility and promote stability. Since the inception of his presidential campaign in 2023, Milei has consistently emphasized his commitment to dollarize the Argentine economy. He argues that such a move would offer a solution to numerous economic challenges, including hyperinflation, which reached a staggering 250% in 2023 (Valentina Alvarez, 2024)

Amidst ongoing discussions surrounding the benefits and drawbacks of dollarization, there remains a need for comprehensive empirical research to assess its actual impact on economic growth. This paper aims to fill this gap by conducting a comparative analysis of the effects of dollarization on real gross domestic product (RGDP) across various countries.

The primary objective of this research is to investigate whether dollarization leads to significant changes in economic growth compared to countries that have not adopted this monetary policy strategy. By examining data from both dollarized and non-dollarized

economies, this study seeks to provide empirical evidence regarding the implications of dollarization for economic development.

The analysis will focus on assessing the percentage change in RGDP in dollarized countries relative to their non-dollarized counterparts over a specified time period. Additionally, factors such as political stability, transparency, employment levels, and gross capital formation will be considered to better understand the nuanced effects of dollarization on economic performance.

Through this research, I aim to contribute to the existing literature on dollarization by offering insights into its impact on economic growth and stability. By providing empirical evidence and analysis, this study seeks to inform policymakers, economists, and stakeholders about the potential benefits and challenges associated with adopting the US dollar as the official currency in developing and undeveloped countries.

My dependent variable is percentage changes in RGDP, with the key variable being a dummy for countries that have dollarized. I expect that countries that have dollarized would present higher positive changes in RGDP compared to countries that have not. Panel data mainly sourced from The World Bank, Statista, and the International Monetary Fund (IMF) from 1995 to 2021, totaling 217 observations, were collected for analysis. Ten different countries were included, with five of them being dollarized at the time or having dollarized their economies in the past.

The results of this study suggest that countries that have dollarized their economies experienced a 3.05 percentage point increase in RGDP, a 5.34 percentage point increase when controlling for country fixed effects, and a 3.75 percentage point increase when controlling for country fixed effects and a one-year lag of dollarization. These findings indicate that developing

and undeveloped countries facing economic issues could potentially consider dollarization as a solution to increase RGDP growth.

I. Literature Review.

Edwards and Magendzo (2001) examined the impact of dollarization on inflation, economic growth, and macroeconomic volatility. Utilizing a 199-country unbalanced panel dataset spanning 1970 through 1998, comprising a total of 5,290 observations, with 386 corresponding to dollarized economies, they employed a matching estimators technique from the training evaluation literature. This technique involves using the available data to re-establish the conditions of a natural experiment. The study revealed that dollarized countries experienced a significantly lower rate of inflation compared to non-dollarized ones, with mean differences ranging from 3.4% to 5.7% per year. Additionally, dollarized countries exhibited a statistically lower rate of GDP per capita growth than non-dollarized ones. Last but not least, there was no statistical difference in macroeconomic volatility between dollarized and non-dollarized economies.

Edwards and Igal Magendzo (2003) examined the economic performance of strictly dollarized countries in comparison to countries with their own currency. The study focused on two main outcome variables: GDP per capita growth and growth volatility. They use panel data from the years 1970-1998 of 16 strictly dollarized countries and several non- dollarized countries. The researchers employed a treatment regression analysis that jointly estimated the probability of a country being dollarized and the outcome equation. The findings

indicated that there was no statistically significant difference in GDP per capita growth between dollarized and non-dollarized countries. However, it was observed that dollarized countries exhibited significantly higher volatility compared to their non-dollarized counterparts.

Castillo (2006) looked the potential positive impact of dollarization on the macroeconomic stability of Latin American countries. She utilized a panel dataset sourced from the World Bank World Development Indicators, encompassing macroeconomic variables for 21 Latin American countries from 1960 to 2003. Her findings indicated a positive association between dollarization and GDP growth, as well as a reduction in inflation rates due to dollarization.

Phiakeo (2017) investigates the impact of exchange rate pass-through in dollarized economies on domestic inflation and economic growth. The study examines five Asian countries over the period 2000-2015. Using fixed effect estimation, the study finds that there is no direct impact of currency depreciation and the degree of dollarization on domestic inflation and economic growth. However, the study indicates that as the level of dollarization increases, the exchange rate pass-through also increases, leading to a positive and significant relationship with domestic inflation. Similarly, a higher degree of dollarization is associated with an increase in the exchange rate pass-through coefficient, which has a negative and significant correlation with economic growth.

Coello et al. (2018) studied whether dollarization had a significant impact on the growth of the Ecuadorian economy. The analysis utilized time series data from the years 1975-2017, obtained from the World Development Indicators (WDI, 2007), and the United States Energy Information Administration's website (EIA, 2017). The authors employed the growth accounting technique on a static linear econometric expression. They selected the growth rate of total factor

productivity (TFP) as their dependent variable instead of GDP. This choice was made because TFP excludes the effects of all variables other than capital and labor that could potentially influence GDP. The authors concluded that dollarization has had a positive impact on the Ecuadorian economy, particularly in terms of improving TFP growth.

Viswanathan (2019) examined the effects of dollarization in the Latin American region. The study utilized yearly data spanning from 1980 to 2012 sourced from the World Bank database, focusing on fifteen countries in the Latin American region. The primary statistical method employed for analysis was a difference-in-difference approach, incorporating a dummy variable for dollarization and the corresponding years when countries adopted the practice. This approach aimed to identify which countries were dollarized during specific years. Additionally, the study compared countries with floating and fixed exchange rates. The research concluded that dollarized nations outperformed in most key economic variables. Dollarized countries exhibited a 1.325% higher growth compared to countries using floating exchange rates and a 0.86% higher growth compared to those with fixed rates.

Bajrami (2023) evaluates the performance of dollarized economies in terms of annual average real growth rates in output, investment, and trade, as well as current account balance rates, and growth volatility, through comparative analysis. The economic framework of this study employs a matching method based on propensity scores. The study reveals that dollarized countries experience a trade-fostering effect, primarily driven by significantly higher growth levels in both imports and exports. However, despite this positive aspect, dollarized countries also exhibit higher output volatility and more negative trends in current account balances over the past decade. Contrary to expectations, the study finds that dollarization is not associated with faster or slower economic growth compared to other regimes.

Park, Son, and Wang (2023) conducted a comprehensive analysis of the influence of monetary policy on macroeconomic variables in the Lao PDR. Utilizing quarterly data spanning from 1996 to 2018, sourced from the Bank of the Lao PDR and the International Monetary Fund's International Financial Statistics (IFS), the researchers applied a vector autoregression (VAR) model. Their findings highlight that while policy rate changes exhibit a weaker impact, changes in the money supply (M0) significantly influence both GDP growth and inflation. Notably, the study emphasizes the challenges posed by the high degree of dollarization in the region, suggesting that traditional monetary policy tools, such as the policy rate, may be less effective. The study concludes with a recommendation for the Lao PDR government to focus on building confidence in the Kip currency to reduce reliance on dollars and enhance the overall effectiveness of monetary policy.

I contribute to the existing literature by incorporating more recent data, diverse variables, and a comparison of developing and undeveloped countries with similar economic levels conditions. This study delves into the responses of these countries to economic crises, particularly those that opted for economic dollarization. The analysis explores the nuances of their responses and evaluates the consequential effects of these strategies.

II. Theory.

Dollarization is the adoption of the US currency as the official or parallel currency of a country. This phenomenon typically occurs in developing countries with unstable monetary systems. Countries opt for dollarization in pursuit of a more stable currency, which is expected to bring financial stability and confidence to investors.

Monetary policy is what links my key independent variable, dollarization, to my dependent variable, RGDP. Monetary policy refers to the action taken by a country's central bank to control the money supply, interest rate, and inflation, among others. When a country dollarizes, it adopts the currency of the US and gives up control over its monetary policy. This loss of autonomy can have a significant implication for the country's ability to respond to domestic economic conditions and crisis. The monetary conditions are now determined by the Federal Reserve Bank.

The change of currency seeks greater stability and credibility in its monetary system. Adopting a stronger and more stable currency can increase confidence among investors and consumers as they would no longer have to worry about the poor monetary policies previously in place. High inflation and a weak currency would no longer be concerns. This confidence may encourage higher levels of investments, consumption, and economic activity which ultimately affects RGDP growth.

III. Model and Data

I used panel data for the years 1995 to 2021 for a total of 217 observation. Table 1 in the appendix shows all the variables collected in my research. I used OLS to estimate equations (1), (2), and (3) below.

$$RGDP_{it} = \beta_0 + \beta_1 Dollarization_{it} + \beta 2FDI_i + \beta_3\, employment_{it} + \beta_4 \mathrm{Gross}CapitalFormation_{it} + \beta_5\, Trade\ Balance_{it} + Transparency\ index_{it} + \varepsilon_{it} \quad \textbf{(1)}$$

$$RGDP_{it} = \beta_0 + \beta_1 Dollarization_{it} + \beta 2FDI_i + \beta_3\, employment_{it} + \beta_4 \mathrm{Gross}CapitalFormation_{it} + \beta_5\, Trade\ Balance_{it} + Transparency\ index_{it} + \beta_7\, \mathrm{Country_i} + \varepsilon_{it} \quad \textbf{(2)}$$

$$RGDP_{it} = \beta_0 + \beta_1 Dollarization_{it-1} + \beta 2FDI_i + \beta_3\, employment_{it} + \beta_4 GrossCapitalFormation_{it} + \beta_5\, Trade\ Balance_{it} + Transparency\ index_{it} + \beta_7\, Country_i + \varepsilon_{it} \quad \textbf{(3)}$$

The study examines the relationship between various factors and the RGDP of country i during year t (RGDPit), with a focus on Dollarization —where countries adopt the US dollar as either the official or parallel currency— as the key independent variable. Alongside Dollarization, the analysis considers several other independent variables: Foreign Direct Investment (FDI), representing the net investment flow in and out of the country in dollars; the employment rate (employment) in country i during time t; gross capital formation, encompassing additions to fixed assets and changes in inventory levels; trade balance, depicting the disparity between exports and imports; and the Transparency Index, a corruption measure ranging from zero to one hundred, with higher scores indicating better transparency

I used panel data mainly from The World Bank (2024), Statista ("The Statistics Portal" 2024) and International Monetary Fund ("IMF Data" 2022). These websites collect data from a variety of sources such as National Statistics Offices, which are data provided by statistical offices in its member countries, International Organizations such as the United Nations, the Organization for Economic Co-operation and Development (OECD), and from private sources such as financial market data providers.

Some of my data were difficult to obtain because I am dealing with undeveloped and developing countries, which in most cases, have high corruption levels where they hide information. I had to go through each government website to corroborate the data and find missing data that I could not find on the principal websites.

With a total of 217 variable observations, the summary statistics, provided in table 1 of the appendix, reveal the following: The mean change in Real Gross Domestic Product (RGDP)

stands at 2.860%, reflecting modest growth, with considerable variability indicated by a standard deviation of 4.7861%. Dollarization, with a mean of 0.3963, demonstrates moderate adoption, while employment rates show a mean of 57.964%, suggesting a relatively stable labor market. Gross capital formation averages $75.8 billion USD, reflecting substantial investment activity, albeit with notable dispersion as denoted by a standard deviation of $113 billion USD. Trade balances exhibit variability, with a mean of -$0.944 billion USD indicating occasional deficits. Foreign direct investment (FDI) presents a mean of -$8.32 billion USD, indicating net outflows, and the transparency index averages 30.908, suggesting moderate levels of perceived corruption.

IV. Result

Results are provided in Table 2 of the appendix. Using an Ordinary Least Squares (OLS) model, I found evidence suggesting that there is an effect on the percentage change in Real Gross Domestic Product (RGDP) for countries that have dollarized their economy compared to countries that did not. To prevent for possible heteroskedasticity in the residual, I report the result based on robust standard error.

The coefficient of the key independent variable, Dollarization, is positive and statistically significant in models (1), (2), and (3). As previously discussed, Dollarization is represented as a dummy variable that takes the value of 1 if the country has dollarized its economy. In model (1), the coefficient for dollarization was 3.05, indicating a 3.05 percentage point increase in RGDP for countries that have dollarized their economy compared to the omitted category of those that did not. In model (2), which includes a country fixed effect, the effect of dollarization is greater, with a 5.34 percentage point increase in RGDP for dollarized countries. In model (3), which incorporates both a country fixed effect and a one-year lag for dollarization,

the coefficient for dollarization was 3.75, signifying a 3.75 percentage point increase in RGDP for dollarized countries. This result is robust, as the coefficient is statistically significant in all models.

Additionally, the coefficient of Transparency was statistically significant across all models. The results indicate that a one-point increase in transparency was associated with a 0.181, 0.22, and 0.23 percentage point decrease in RGDP in each of the three models, respectively.

The coefficients of Employment and Gross Capital Formation were statistically significant only in models (2) and (3). A one-percentage point increase in employment was associated with a 0.32 percentage point decrease in RGDP in both models (2) and (3). Regarding gross capital formation, a $1 billion increase in this variable represented a 0.015 percentage point increase in model (2) and a 0.02 percentage point increase in model (3) in RGDP for the average country in my data set.

In summary, robust evidence suggests that dollarization has a positive impact on the percentage change in RGDP. Furthermore, there is evidence indicating that the level of transparency in each country directly affects the percentage change in RGDP, with more transparent countries experiencing lower percentage changes in RGDP from one year to the next. This occurs because more transparent countries tend to have a more stable economic environment with lower volatility and smoother RGDP trajectories. Additionally, there is some evidence suggesting that gross capital formation and the level of employment have an impact on the percentage changes in RGDP when controlling for country fixed effects.

VI. Conclusion and Limitation

My results demonstrate that dollarization has a positive impact on changes in RGDP growth, both with and without country fixed effects, and even a year after dollarization has occurred. This suggests that developing and undeveloped countries facing economic issues such as hyperinflation could consider dollarization as a possible solution to increase levels of RGDP growth.

Obtaining fully historical data for every country was impossible due to political instability, lack of transparency, natural disasters, or poor data collection infrastructure. The results presented in this study show increased growth in RGDP for undeveloped and developing countries that chose to dollarize their economies compared to countries in similar economic conditions that did not. Further research should include more data for both dollarized and non-dollarized countries, especially to capture the long-term effects of dollarization on economies.

Appendix

Table 1 Summary statistic (1995-2021)

Variable (Obs = 217)	**Mean**	**Std. Dev.**	**Min**	**Max**
Change in RGDP	2.860	4.7861	-10.9	19.7
Dollarization	0.3963	0. 4903	0	1
Dollarization (lagged 1 year)	0.3871	0.4882	0	1
Employment percent	57.964	11.019	20.587	72.397
Gross capital formation (in billions USD)	75.8	113	0.055	770
Trade balance (in billions USD)	-0.944	12.1	-64	34
Foreign direct investment (in billions)	-8.32	15.7	-90	9.4
Transparency index	30.908	6.891	15	52

Tablo 2 Regression results.

Percent change RGDP (obs 217)	**Model (1)**	**Robust Std. Err.**	**Model (2)**	**Robust Std. Err**	**Model (3)**	**Robust Std. Err**
Dollarization	3.05*	0.789	5.34*	1.95		
Dollarization (lagged 1 year)					3.75*	1.64
Employment percent	-0.242	0.05	-0.32*	-0.127	-0.33*	0.135
Gross capital formation (in billons USD)	0.00839	0.0049	0.015*	0.00578	0.02*	0.006
Trade Balance (in billons USD)	0.0177	0.029	0.03	0.0341	0.03	0.03
Foreign direct investment (in billons USD)	0.0169	0.032	0.036	0.035	0.034	0.034
Transparency	-0.181*	0.53	-0.22*	0.073	-0.23*	0.073
Constant	5.35*	2.83	30.33	8.46	31.29	8.97
Country fixed effect	No		Yes		Yes	
R2	0.1		0.18		0.17	

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