Investigating the Effects of Monetary Issues on Foreign Exchange: A Case Study of Belize During the Covid-19 Pandemic

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Abstract

This paper seeks to determine the effects of monetary issues on foreign exchange in Belize. The study's purpose was to understand better how monetary policies on foreign reserves impact Belize's economy particularly during the Covid-19 global pandemic. The study focuses on the foreign exchange market pressure (EMP) due to Belize's fixed exchange market economy. The other method used was the monetary style which shows the capital and current account balance of payment. The data used was from the Central Bank of Belize Reports. The results reveal no connection between the long-run price of primary goods to secondary and tertiary products. This was due to the nature of the industries. Moreover, the Central Banks' variation in worldwide reserve was adverse. Lastly, there seems to be significant decrease in the balance of payment from 2014 to 2018. Overall, the challenges were greater during the Covid-19 global pandemic because of the fixed exchange rate than if an exchange rate such as the flexible exchange rate was employed.

Keywords: Monetary issues, foreign exchange, Belize

Introduction

This paper seeks to determine the effects of monetary issues on foreign exchange in Belize. The purpose of the study was to better understand how monetary policies on foreign reserves impact Belize's economy, particularly during the Covid-19 global pandemic. This topic has been of concern as Belizeans had found it significantly challenging to transact in US currency during the pandemic. One of the main negative impacts was the Central Bank of Belize having to adjust its foreign transactions. This adjustment was necessary since approximately 40% of Belize's economy was dependent on Tourism (Chow, 2019). With the International border closure along with its other two local border closure (Mexico and Guatemala), this industry was almost non-operational.

This has created a significant problem in Belize with its foreign transactions. Belize's recurring budget shows a trade deficit where it imports more than it exports (see Exhibit 1). With its minimal import and export and the closure of the tourism industry, this has significantly reduced foreign currency inflows to Belize. Due to this, the central bank made major adjustments and only approved foreign currency use for essential services. Therefore, most of the economy was impacted. Because of this, regular citizens were unable to conduct transactions with other countries.

The border closure affected the flow of foreign exchange as this industry generated the main flow of income. Belize dollar is pegged to the US $2 to $1. As a precaution, the government decided to minimize the issuing

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of foreign currency. This significantly affected students, car dealers, and those involved in foreign trade. During the pandemic, it was obvious that Belize's fixed exchange rate system of BZD2.00 to USD 1.00 has affected its monetary issues and foreign exchange. Many studies have been piloted that are similar to this anticipated study. However, little or no study has been conducted on the covid-19 global pandemic and its impact on the country.

According to the Central Bank of Belize (2021) report, Belize has had a fixed exchange rate of BZ$2.00 to US$1.00 since 1976. This rate of exchange is the basis of its macroeconomic solidity, which compelled banks to keep exterior assets at any rate of 40% of local liabilities, among other constraints (Central Bank of Belize, 2021). This paper engages different formulas to establish the impacts of monetary issues on foreign exchange. Other areas of focus include the foreign exchange assets of The Central Bank to Net Foreign Assets by Commercial Banks. It also focuses on the Central Banks' variation in worldwide reserves by comparing the goods imported to goods exported. Lastly, the balance of payment current and capital accounts was examined.

Literature Review

Due to a miniature and thriving economy, any increase in Belize's domestic credit would increase demand for imports, and the US dollar needed to gain those imports (Central Bank of Belize, 2021). Several theories can be utilized to explain the problem in Belize; one such phrase is dollarization. Ford (2001) clarified that because of the scarcity of foreign exchange in Belize in its official system, the balance of payments issues, and the increase US dollars in the black market, the use of U.S. dollar in Belize would be ideal. This, however, seems to be of concern as it might create remote upsets to fiscal and monetary policies due to unwarranted expend, among other factors, (Ford, 2001).

Yeyati and Sturzenegger, (2009) study shows that monetary and exchange rate policies (MERP) are essential to the progress of an economy. The results from the study revealed that while some economies are still operating under a fixed exchange rate regime, their activities function under a floating regime. Although most economies have moved from U.S. pegs since the departure of Bretton Woods in the early 70s in favor of a flexible regime, Belize is a country that is still operating under a fixed exchange rate regime. Moreover, Dilmaghani and Tehranchian's (2015) study was performed to determine the effects of monetary policies on the exchange rates of chosen progressing countries from 2001-2010. The study employed dynamic panel data rooted in the generalized method of moments to approximate the model (Dilmaghani & Tehranchian, 2015). They found that the slow of the exchange rate variable was specific and noteworthy to the exchange rate. It also showed that liquidity as a symbol of monetary policy is useful and significant (Dilmaghani & Tehranchian, 2015).

Another study concentrated on the output-expenditure arrangement employed to study the influence of domestic monetary shocks on the exchange rate and the balance of payments (Makin, 2005). This study demonstrates the relationship between domestic money, exchange rate, and price level. The fixed exchange rate system disclosed that the external adjustment was acceptable with the price level solidity and money market equilibrium (Makin, 2005). Since commercial banks dominate financial system lending, the Central Bank of Belize administers the monetary base of commercial banks' liquidity. The setup of the reserve requirements controls credit growth, interest rates, and the level of money supply (Central Bank of Belize, 2021).

One recent investigation organized by Downes and Khemraj (2018) incorporated the theory of monetary dependency and the integration of the Prebisch-Singer hypothesis into a monetary framework. The model proved that the small strategy in the short term is swamped by the collapsing foreign exchange provision in the long run hence the justification for the long-term foreign limitation (Harvey et al., 2010). This is like the position in Belize and Barbados, which maintain comparable economies.

Another inquiry that concentrates on the monetary approach to the exchange rate was a review directed by Bilson (1978). This study involved a simple monetary model applied as the exchange rate motion and presumed a stable money position (Bilson, 1978). However, the analysis of the economy was a flexible

economic system that diverged from the current fixed exchange rate structure interest. Additional, research that contained some areas of interest was guided by Yurdakul (2014). She wanted to determine the correlation between macroeconomic factors and bank credit risks. A broad to precise model was manipulated to scrutinize short-run variables as illustrated by Hendry (1980), while the long-run association was evaluated by applying a policy developed by Gregory and Hansen (1996). The experiment appeared that the ISE index and growth rate diminished credit risk in the long run while foreign exchange, inflation, interest rate, and money supply increased credit risk in the short term.

Lastly, Funda (2014) explored macroeconomic considerations and credit risk in Belize. The risk aspects, both systematic and unsystematic, were crucial benchmarks in the decision-making process at a financial institution. The outcome indicated that the principal element of the macroeconomic reasons was the systematic risk (exchange rate and inflation) which tracked an adverse course and directed to credit loss.

Data and Methodology

This study employs various theories. The monetarist theory is one where the changes in the nominal stock of money are the main reasons for the change in the money income. The foundation for the monetarist theory is the quantity theory of money. The traditional quantity theory was summarized into mv = py, where v is the velocity of circulation, m is the money supply, y is the real national income, and p is the price level. The velocity of circulation was assumed to be constant (Devereux, n.d.).

This qualitative study employed secondary data retrieved from the statement of financial position from the Central Bank of Belize. The statistics consist of material for the periods 2010 - 2020. The other area of emphasis was the foreign exchange market pressure (EMP), typically known under a fixed exchange market economy. This has been widely considered; therefore, the focus is on the foreign exchange assets of central banks computed to net foreign assets by commercial banks (Patnaik, Felman, & Shah, 2017).

Equally, the concept for the foreign exchange market pressure (EMP) is the assimilation approach in which the primary idea is the defeat of international reserves, which is labeled by $\Delta F = X - M = Y - (C + I + G)$ (Aizenman, & Hutchison, 2010). Domestic assimilation sought the formula $A = C + I + G$ (Downes, & Khemraj, 2018). The central banks' variation in worldwide reserves (ΔF) is optimistic once $X - M > 0$ and adverse when $X - M < 0$, the shortage is when $A > Y$ (Downes & Khemraj, 2018).

The other methodology is the monetary style which illustrates the current and capital account of a balance of payment (Boughton, 1988). In the technique, the ΔD means a difference in domestic credit, and ΔM means a variation in the monetary base. This gives the fundamental relationship of the monetary approach, which implies $\Delta F + \Delta D = \Delta M$ (Downes & Khemraj, 2018).

Results and Discussion

Recent Developments and Analysis

The charts below show the trends and comparisons for the deterioration in international reserves from 2006 to 2020. The information was obtained from the Central Bank of Belize website. Figure 1 shows the developments of net foreign assets (NFAs) of domestic banks and international reserves of the Central Bank of Belize (CBB). It clearly displays the deviation between the internal reserves of the CBB and the domestic banks. There was a steep increase in international reserves from 2014 and a steep decrease in 2015 to 2019. On the other hand, domestic banks show a steady NFA increase. Figure 2 shows a fluctuation of the Central Bank of Belize International Reserves and the Net Foreign Assets of Domestic Banks throughout the period.

This paper shows the imperfect substitutability between domestic and foreign assets similar to that identified by Flood and Jeanne (2005) in the uncovered interest rate parity equation. Studies show that many countries borrow international reserves from the local banking system in the form of foreign currency

deposits at the central bank or non-resident peers. These gross international reserves are used to manage exchange rate dynamics and their protective motive.

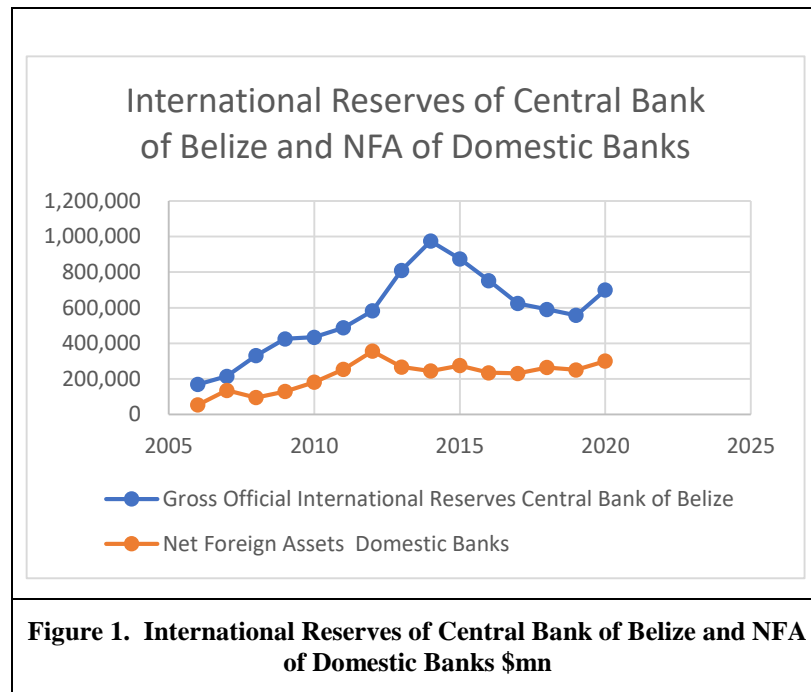**Figure 1. International Reserves of Central Bank of Belize and NFA of Domestic Banks $mn**

Figure 1 shows that the Foreign Reserves Central Bank and NFA Domestic bank decreased from 2014 to 2019 and slightly increased in 2020. This decrease is due to foreign exchange pressure. Figure 1 information is presented in percentage form, as shown below in Figure 2. This figure shows the fluctuation of the International Reserve of Central Bank of Belize and NFA of Domestic Banks from 2006 to 2020. The charts below reveal possible reasons for the trend noticed thus far.

Figure 2. International Reserves of Central Bank of Belize and NFA of Domestic Banks
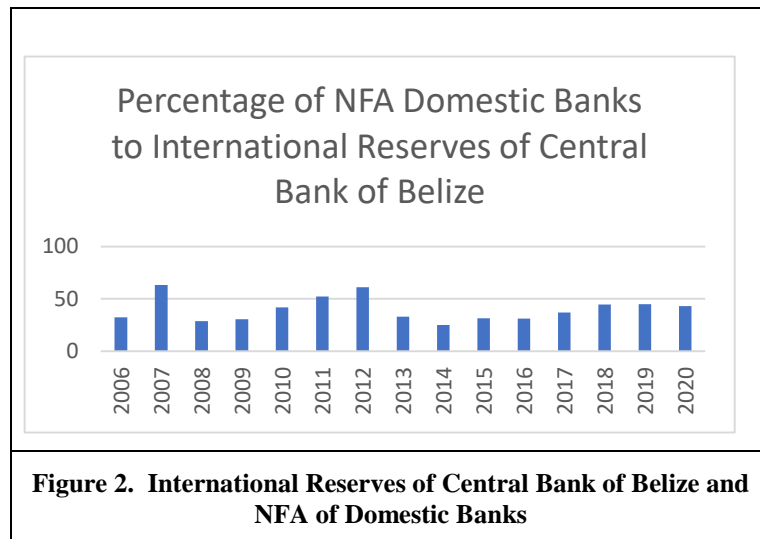
First presented are the total domestic loans and advances. This is presented in Figure 3. There was a constant increase in bank loans from 2010 to 2020, except for 2017. During this same period, from 2014 to 2019, there was a significant drop in international reserves.

Figure 3. Total Domestic Loans and Advances $mn
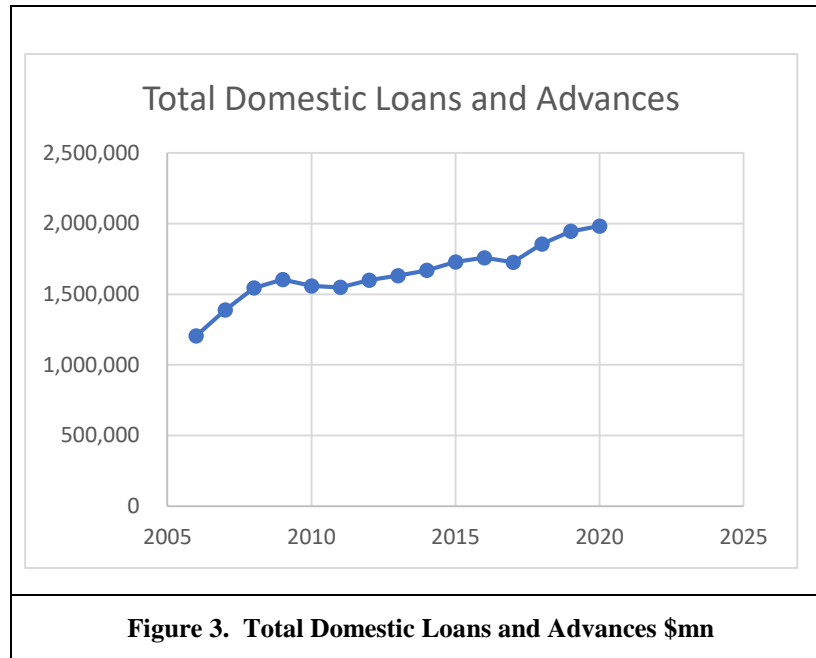
In addition, Figure 4 shows the percentage change in inflation and annual money supply from 2013 to 2020. The money supply showed a significant decrease from 2015 to 2017 and a significant increase from 2017 to 2020. In addition, the Inflation percentage showed minor fluctuation from 2013 to 2020. As shown in Figure 1, the international reserves fell during that period. This is like the endogenetic money thesis. McClean (1985, 1998) explained that the small open economies in the Caribbean have a private monetary base. He also explained that the monetary-based changes are centered on foreign exchange payments.

Figure 4. % Change in Inflation and Annual Money Supply

Figure 5. Gross Domestic Product by Industrial Origin (Constant Prices) $mn
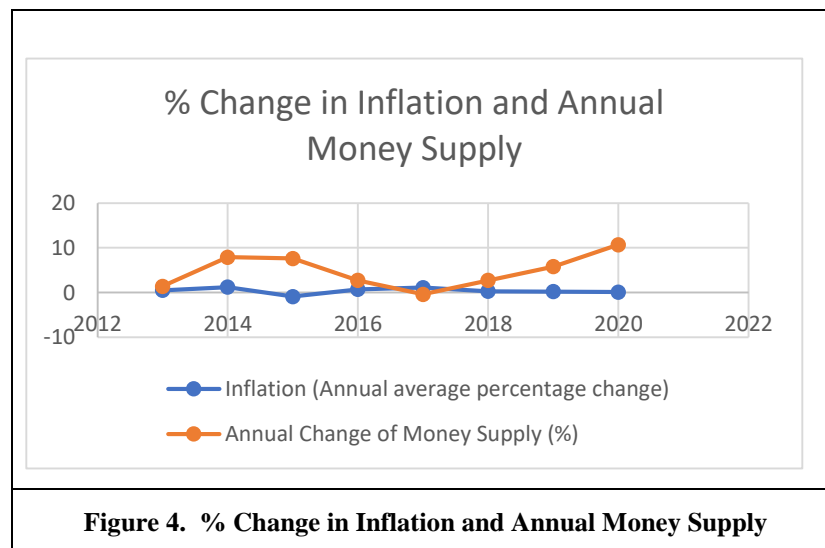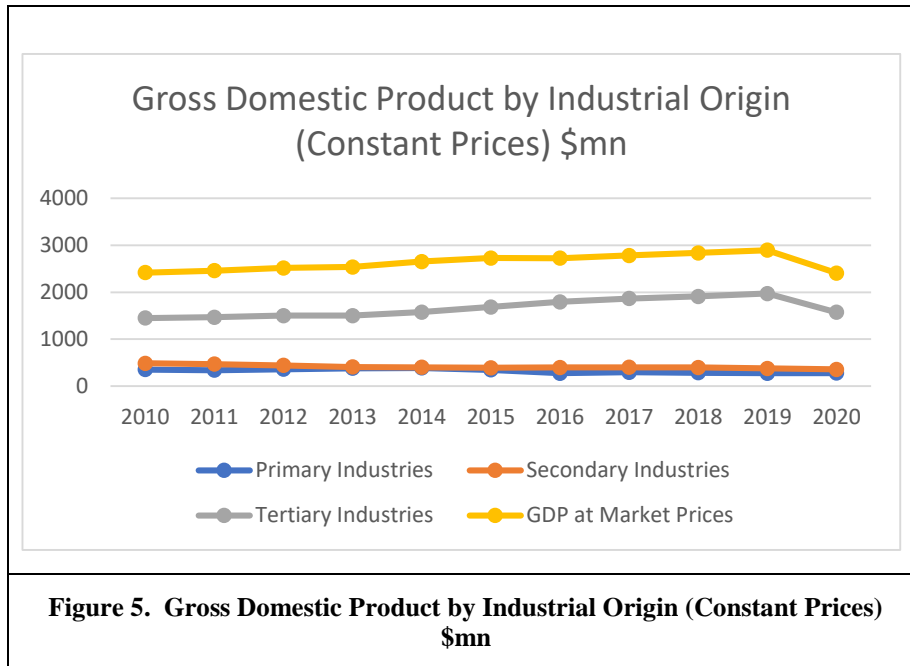
Furthermore, in Figure 5, the primary industries include agriculture and forestry, fishing, mining, and quarrying. The secondary industries include manufacturing, electricity and water supply, and construction. The Tertiary Industries include Wholesale and Retail Trade and Repairs, Hotels and Restaurants, Transportation and Communication, Financial Intermediation, Real Estate, Renting and Business Services, Community, Social and Personal Services, and General Government Services. This figure shows that both the tertiary industries and GDP at Market Prices had a decline in prices from 2019 to 2020. This was due to the covid-19 pandemic, where most tourism industries were closed due to travel restrictions and border closure. Moreover, there is no significant connection between Tertiary Industries and Primary and Secondary Industries changes. One of the main reasons for the no significant difference is that Tertiary Industries are mainly in the Tourism Sector while Primary and Secondary are Goods and Commodities. However, the Primary and Secondary Industries seem to have a close connection; however, the Primary Industry seems to operate on its own. The decrease or increase is not directly related to changes in the Secondary Industry.

Figure 6. Imports and Exports over what period? Clarification is needed on those figures on the y-axis.

Moreover, as shown in Figure 6 above the goods imported are significantly more than the goods exported. The X - M < 0, means that the central banks' variation in worldwide reserves (ΔF) is adverse.

Figure 7. Foreign Assets of Central Bank and Domestic Banks $mn
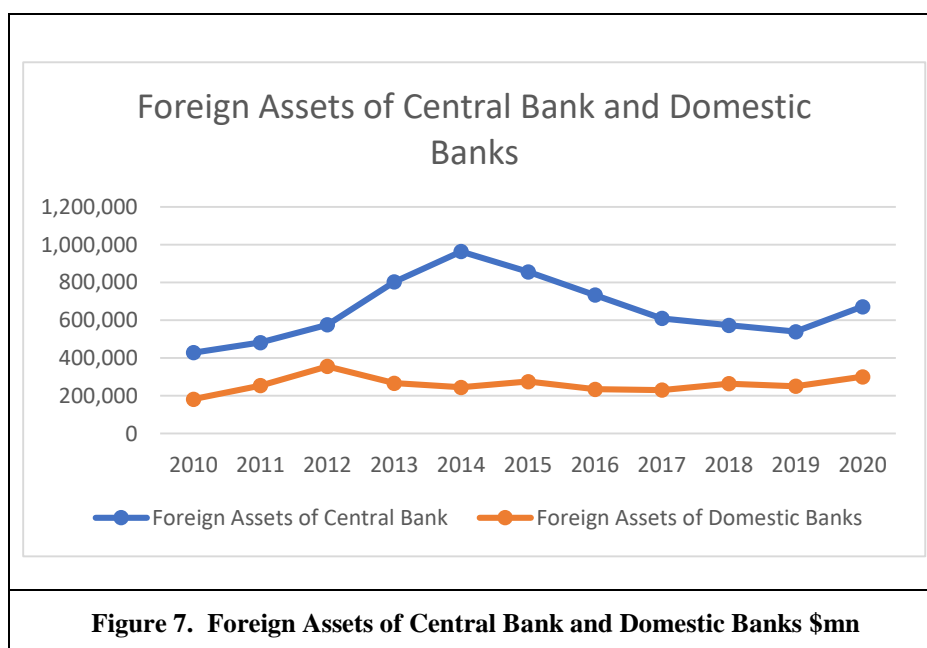
Additionally, the other region of emphasis was the foreign exchange market pressure (EMP). Figure 7 above shows that the Central Bank's Foreign Assets are considerably higher than the Foreign Assets of Domestic Banks. This proves that Belize's economy is a fixed exchange market economy and is faced with continuous foreign exchange market pressure.

Lastly, the balance of payment in Figure 8 to the figure before it appears. includes the current and the capital accounts. The Figure shows a significant decrease in the balance of payment from 2013 to 2017 and an increase from 2018 to 2020. One suggestion is for Belize to adopt a flexible regime to improve its monetary and exchange rate policies (MERP).

Figure 8. Overall Balance/Reserve $mn
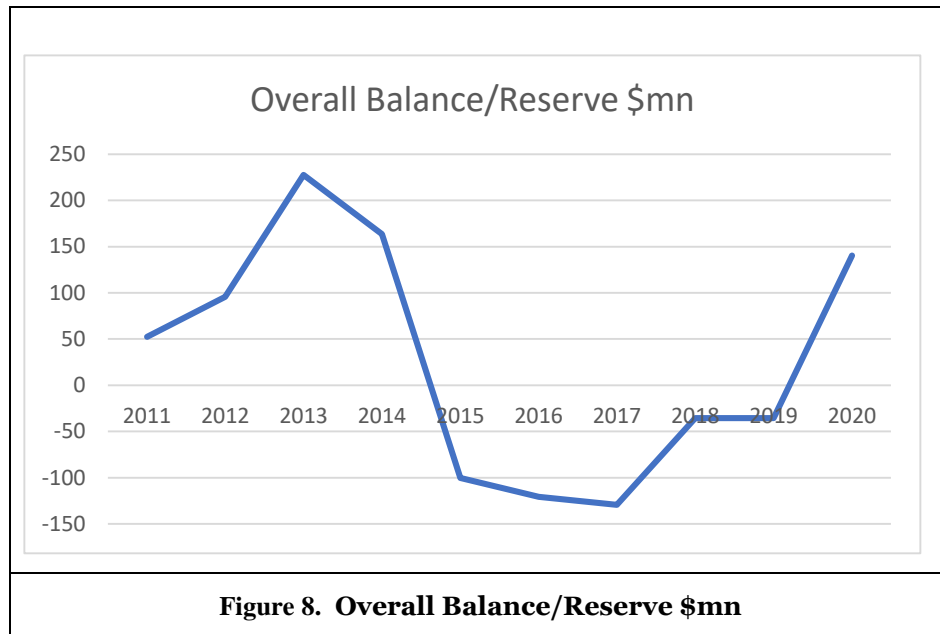
Future Research

Future studies could include the Auto-regressive Distributed Lag Models (ARDL). This model will contemplate the error correction term (ECT), the view of the modification speed, and the presence of persistent relationships applying the bound test (Moyo, & Tursoy, 2020). The formula is $Yt = β0 + β1yt-1 +......+ βpyt-m + ɑ 0xt + ɑ 1xt-1.....+ ɑ qxt-n + Ɛ t$ (Moyo, & Tursoy, 2020). Other studies could compare Belize with a similar-sized country with a similar economic situation.

Conclusion

This study shows that due to Belize's fixed exchange rate, regime situations such as the covid-19 global pandemic can significantly affect the economy. The prolonged closure of the International border increased hardship for its citizens. The reduced or minimal foreign exchange is the greatest issue.

Since Belize has a small economy, although the money supply increased the International Reserves decreased; however, the international payments increased. This is in keeping with McClean's (1985, 1998) endogenetic money thesis. Moreover, the goods imported are more than those exported, which shows an adverse Central Bank variation in worldwide reserves. Also, Belize's economy is a fixed market economy with continuous foreign exchange market pressure. Therefore, if alternative measures are put in place, such as the start of manufacturing companies, this can aid in eliminating such issues or implementing a flexible exchange rate system.

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Exhibit 1: Belize Budget For Fiscal Year 2019/2020

SUMMARY OF RECURRENT AND CAPITAL BUDGETS

	ACTUAL OUT-TURN 2017/18	APPROVED BUDGET 2018/19	PROJECTED OUT-TURN 2018/19	DRAFT BUDGET 2019/20
TOTAL REVENUES AND GRANTS	1,111,454,839	1,183,327,175	1,174,349,123	1,226,771,198
RECURRENT REVENUE	1,079,432,196	1,134,914,949	1,144,288,264	1,198,915,868
TAX REVENUE	967,445,481	1,022,580,052	1,046,022,903	1,088,786,237
INCOME & PROFITS	270,222,939	277,321,572	288,996,863	305,023,302
TAXES ON PROPERTY	6,383,939	6,421,331	6,313,567	6,439,838
TAXES ON INTERNATIONAL TRADE & TRANSACTIONS	157,807,938	170,295,554	167,705,887	167,019,037
TAXES ON GOODS & SERVICES	533,030,666	568,541,595	583,006,587	610,304,060
NON-TAX REVENUE	111,986,715	112,334,897	98,265,361	110,129,631
PROPERTY INCOME	20,832,481	30,020,584	13,754,922	14,030,021
LICENCES	20,334,675	16,947,328	21,619,641	22,052,034
ROYALTIES	45,940,248	39,748,006	35,079,569	45,680,123
OTHER GOVERNMENT MINISTRIES	24,390,658	24,976,996	27,605,015	28,157,116
REPAYMENT OF OLD LOANS	488,651	641,983	206,213	210,338
CAPITAL REVENUES:	1,798,984	3,300,908	2,506,225	2,556,349
SALE OF EQUITY	193,745	202,122	126,354	128,881
SALE OF CROWN LANDS	1,605,239	3,098,786	2,379,871	2,427,468
GRANTS	30,223,659	45,111,318	27,554,634	25,298,981
TOTAL EXPENDITURES	1,160,918,767	1,208,717,414	1,185,894,997	1,256,208,969
TOTAL RECURRENT EXPENDITURE	1,006,597,949	1,051,353,704	1,028,399,545	1,077,000,794
PERSONAL EMOLUMENTS	426,107,271	431,681,060	432,295,633	440,596,070
PENSIONS & EX-GRATIA	94,672,377	91,428,047	96,038,393	97,113,118
GOODS & SERVICES	210,906,621	238,375,250	227,352,086	250,172,089
SUBSIDIES AND CURRENT TRANSFERS	172,725,170	177,968,300	175,267,159	174,045,978
DEBT SERVICE-INTEREST & OTHER CHARGES	102,186,511	111,901,047	97,446,274	115,073,538
TOTAL CAPITAL EXPENDITURES	154,320,818	157,363,710	157,495,452	179,208,175
CAPITAL II EXPENDITURES	59,176,486	61,920,948	61,343,078	74,777,640
CAPITAL III EXPENDITURES	92,845,707	93,144,138	87,853,751	96,131,911
CAPITAL TRANSFER & NET LENDING	2,298,624	2,298,624	8,298,624	8,298,624
RECURRENT SURPLUS/[DEFICIT]	72,834,247	83,561,245	115,888,720	121,915,074
PRIMARY SURPLUS/[DEFICIT]	52,722,583	86,510,808	85,900,400	85,635,767
As Percentage of GDP	1.44%	2.22%	2.21%	2.12%
OVERALL SURPLUS/[DEFICIT]	(49,463,928)	(25,390,239)	(11,545,874)	(29,437,771)
As Percentage of GDP	-1.35%	-0.65%	-0.30%	-0.73%
AMORTIZATION	(83,164,734)	(92,711,964)	(94,739,307)	(103,011,334)
FINANCING	(132,628,662)	(118,102,203)	(106,285,181)	(132,449,105)
GDP (in billions of Bz) (Current prices)	*3.665*	*3.902*	*3.888*	*4.030*

Source: Barrow, D. (2019, March 15, p. 2)