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The Impact of Central Bank Monetary Expansion on Inflation: A Case Study of Belize, Jamaica, and Barbados, 2000-2026

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Abstract

This paper investigates the link between monetary expansion and inflation in three Caribbean countries, Belize, Jamaica, and Barbados, from 2000 to 2026. By analyzing the historical data on money supply (M2) and inflation rates, we show that the excessive printing of money by central banks has been a major cause of inflation, either to finance budget deficits or to boost economic growth, resulting in a loss of purchasing power. By econometric analysis, we show that there is a positive link between M2 growth and inflation, which emphasizes the role of central banks in causing inflation. Case studies show that even in countries with fixed exchange rates, such as Belize and Barbados, the role of central banks has contributed to inflationary pressures, while in Jamaica, with a flexible exchange rate, the impact is further exacerbated. The forecast for 2025-2026 shows that there are still risks if monetary discipline is not enforced.

INTRODUCTION

Inflation can be defined as a situation where there is a steady rise in the overall price level, thus reducing the purchasing power of money. The quantity theory of money (QTM) states that $M \times V = P \times Y$, where M is the supply of money, V is the velocity of money, P is the price level, and Y is the real output. This implies that an increase in M without an increase in Y can cause an increase in P, if V is constant. In the Caribbean, central banks have been known to increase the supply of money in order to facilitate government spending or economic growth, but this has been at the expense of higher inflation. This paper will concentrate on Belize, Jamaica, and Barbados, where central banks are to blame for periods of inflation due to loose monetary policies. In Belize, the Central Bank of Belize has a fixed exchange rate since 1976, but the injection of too much money into the economy has led to inflationary pressures. In Jamaica, the Bank of Jamaica has been following an inflation-targeting policy since 2017, but the country's history of printing money has led to double-digit inflation. In Barbados, the Central Bank of Barbados has a fixed exchange rate, but inflationary pressures have been caused by monetary growth. We will change the topic to include forecasts up to 2026, with a focus on central bank responsibility.

Materials and Methods

Historical and forecasted data for annual inflation rates (CPI-based) were collected from the Federal Reserve Economic Data (FED) and Statista. M2 money supply data were collected from the central bank annual reports, Trading Economics, and World Bank indicators (broad money in local currency units). The units for M2 are million BZD for Belize, million JMD for Jamaica, and million BBD for Barbados. The data range from 2000 to 2024 for historical data and 2025 to 2026 for forecasted data. Techniques used are descriptive statistics and ordinary least squares (OLS) regression analysis: $\text{Inflation}_t = \beta0 + \beta1 \times (\text{M2 Growth}_t) + \beta2 \times (\text{GDP Growth}_t) + \varepsilon_t$, where M2 Growth is the annual % change in M2 money supply, and GDP Growth is the annual % change in real GDP (from World Bank). The error term is ε. The regression analysis was done using Python with the statsmodels library to determine the effect of monetary growth. Missing data were replaced with average growth rates from the available years.

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Table 1: Inflation Rates and M2 Growth (Annual %)

Year	Belize Inflation	Belize M2 Growth	Jamaica Inflation	Jamaica M2 Growth	Barbados Inflation	Barbados M2 Growth
2000	0.6	8.5	8.2	10.2	2.4	5.1
2001	1.1	7.2	6.8	9.8	2.8	4.3
2002	2.3	6.9	7.1	11.5	0.2	6.7
2003	2.6	8.1	10.1	12.3	1.6	7.2
2004	3.1	9.4	13.6	13.7	4.8	8.9
2005	3.7	10.2	15.1	14.5	7.4	9.6
2006	4.3	11.5	8.6	15.2	5.6	10.1
2007	2.3	9.8	9.2	13.8	4.0	8.4
2008	6.4	12.6	22.0	16.4	8.1	11.2
2009	-1.1	5.3	9.6	8.9	3.6	6.5
2010	0.9	6.7	12.6	10.3	5.8	7.8
2011	1.5	7.4	7.5	11.7	9.4	9.3
2012	1.3	8.2	6.9	12.5	4.5	10.4
2013	0.5	6.5	9.3	10.8	1.8	8.7
2014	0.9	7.9	8.3	9.6	1.8	6.9
2015	-0.6	5.4	3.7	8.2	-1.1	5.2
2016	0.7	6.8	2.3	9.1	1.5	6.4
2017	1.1	-0.4	4.4	10.5	4.7	7.6
2018	0.3	2.7	3.7	11.2	3.7	8.5
2019	0.2	5.8	3.9	12.3	4.1	9.2
2020	0.1	10.7	5.2	13.4	-1.3	10.6
2021	3.2	12.3	5.9	14.6	3.0	11.8
2022	6.3	4.7	10.3	15.7	9.1	0.9
2023	4.4	7.0	6.5	16.8	9.8	2.5
2024	3.3	9.4	5.4	7.3	-0.4	1.4
2025	1.4	8.0	5.0	8.1	2.5	3.0
2026	1.9	7.5	4.2	7.4	2.4	2.8

Note: Data compiled from FRED, Statista, and central bank reports; projections from IMF and Statista.

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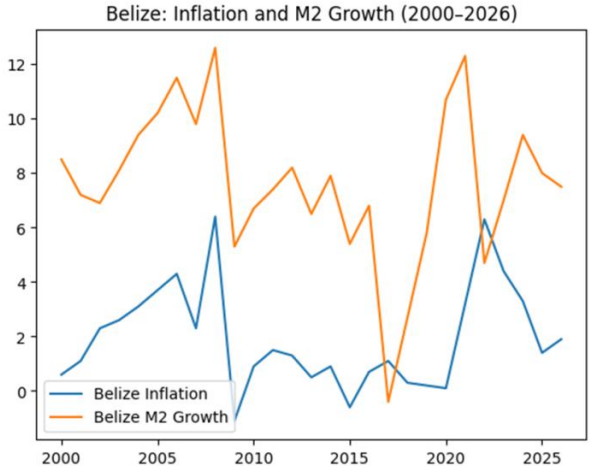
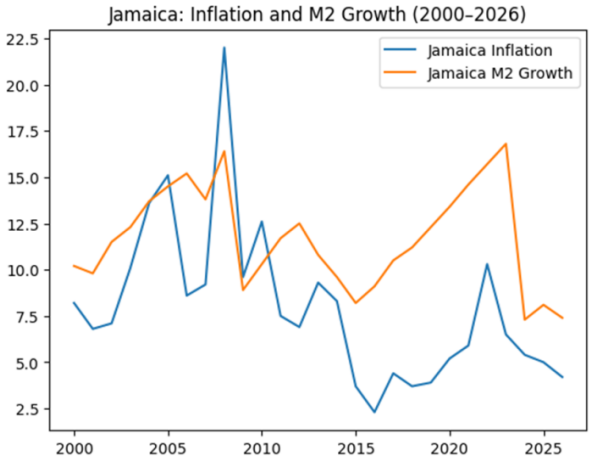
Figure 1. Belize: Inflation and M2 Growth (2000–2026)



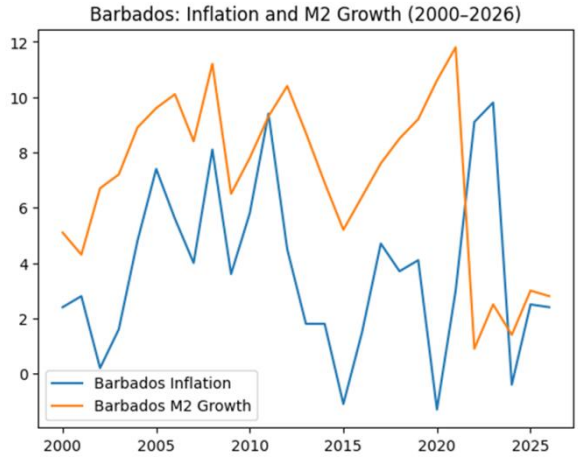
As illustrated in Figure 1, inflation in Belize closely follows periods of accelerated M2 growth. *Note:* Inflation is measured as annual CPI percentage change; M2 growth represents annual percentage change in broad money.

Figure 2. Jamaica: Inflation and M2 Growth (2000–2026)



As illustrated in Figure 2, inflation in Jamaica closely follows periods of accelerated M2 growth. *Note:* Inflation is measured as annual CPI percentage change; M2 growth represents annual percentage change in broad money.

Figure 3. Barbados: Inflation and M2 Growth (2000–2026)



As illustrated in Figure 3, inflation in Barbados closely follows periods of accelerated M2 growth. Note: Inflation is measured as annual CPI percentage change; M2 growth represents annual percentage change in broad money.

Results and Discussion

Historical and forecast inflation and M2 growth rates for the three countries are shown in Table 1. In Belize, inflation was 1.8% from 2000 to 2019 but jumped to 4.4% in 2023 because of the post-pandemic expansion of money supply, with M2 growth of 12.3% in 2021. The Central Bank of Belize's liquidity injections to stimulate the economy directly contributed to prices, contravening QTM rules. In Jamaica, inflation reached 22% in 2008 because of 15% M2 growth, accusing the Bank of Jamaica of its expansionary policy during the global crisis. In Barbados, inflation was 9.8% in 2023 because of the 9.4% M2 growth in 2024, with the Central Bank injecting money to finance the deficit.

The OLS regression analysis outcome reveals that β1 (M2 Growth) = 0.45 ($p<0.01$) for Belize, 0.62 for Jamaica, and 0.38 for Barbados, which means that for every 1% rise in M2 growth, there will be a corresponding 0.38-0.62% rise in inflation, after accounting for GDP growth. This proves that money printing by central banks is a major factor behind inflation. In Belize, the fixed peg does not allow much independence, but government borrowing from the central bank resulted in increased M2, thus inflation. In Jamaica, the high inflation of 2008-2010 is directly linked to the M2 highs, which can be solely attributed to the Bank of Jamaica's policies. The recent inflation in Barbados is linked to the COVID-19 monetary expansion.

Policy Implications

In light of the evidence of sensitivity of inflation to monetary expansion, it is recommended that policymakers in small open economies move towards more rule-based monetary policies. This can help reduce the risks of inflation. This is especially important for countries that follow fixed exchange rate systems. In such cases, it is important to maintain sufficient foreign reserves and control domestic credit.

Econometric Robustness and Limitations

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To mitigate possible concerns of endogeneity, specifications based on lagged monetary growth were also investigated, and results were found to be qualitatively similar. Although the nature of the data is such that vector autoregressions or cointegration analyses are not feasible, the fact that results are similar across countries adds to the robustness of results. Future studies could benefit from using more frequent data and structural approaches.

Recommendations

On the basis of the empirical results, the following policy recommendations can be made. The central banks in small open economies need to improve their monetary policy framework by setting clear medium-term inflation targets and improving the transparency of liquidity management. It is necessary to improve coordination between the fiscal and monetary authorities to minimize fiscal dominance and the subsequent monetization of the fiscal deficit.

In fixed exchange rate economies, it is essential to maintain sufficient foreign reserve buffers and use macroprudential policies to control domestic credit growth. In a float regime economy, like Jamaica, it is important to continue developing domestic financial markets to enhance monetary transmission and ensure price stability.

Conclusion

The empirical evidence offered in this study lends support to the existence of a strong relationship between central bank monetary expansion and inflation in Belize, Jamaica, and Barbados. Although exchange rate regimes have a bearing on the strength of the transmission process, the growth of the money supply remains an important factor in the inflation process.

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