



The main determinants of the country's overall, food and non-food tradables prices in the long run are the South African rand/US dollar exchange rate, South African overall CPI and domestic fuel prices. Depreciation of the South African rand against the US dollar, holding the South African CPI and domestic fuel prices constant was found to result in the easing of prices in Zimbabwe. On the other hand, a rise in South Africa CPI, holding the Rand/US dollar exchange rate and domestic fuel prices constant, was found to be associated with a rise in Zimbabwe's CPI. In addition, empirical results show that an increase in domestic fuel prices potentially exerts upward pressure on the country's price level. Nonetheless, exchange rate developments, international crude oil prices and CPI dynamics in South Africa remain beyond the country's control.

While price correction might have been experienced during the first year after the adoption of dollarization, the medium to long term causes of deflation in Zimbabwe point to weak aggregate demand, the sustained appreciation of the US dollar against the South African rand, a decline in international oil prices and subdued domestic economic activity. The country is experiencing low aggregate demand given the increasingly difficult macroeconomic environment characterized by liquidity and structural constraints which have resulted in company closures and retrenchments, thereby negatively affecting consumers' purchasing power. If the current deflationary pressures are to worsen, this can lead into a deflationary spiral whereby prices continue to fall. This will ultimately lead to a further lowering of production levels, which, in turn, reflects in lower wages, lower aggregate demand by businesses and consumers, which then lead to further decreases in prices and further exposure to the dangers of deflation.

Suffice to say, the ability of the country's fiscal and monetary authorities to cushion the country from the vulnerabilities attributed external factors remain a challenge on the back of limited fiscal space and the dollarized regime. The country's central bank has virtually no control over monetary and exchange rate developments under a dollarized regime and hence cannot intervene to manage monetary and/or exchange rate disequilibria. There is therefore need for Government to come up with measures that address both supply and demand side challenges in order to boost economic activity, as a way of managing the potential negative consequences of deflation. On the supply side, Authorities need to mobilize significant domestic public, private-sector, and international funding in order to increase the capital stock, refurbish the existing infrastructure and invest in new infrastructural projects in order to increase the country's potential output. These measures will shore up both economic growth, employment and ultimately the price level.

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## Determinants of

## Inflation in a Dollarized

## Economy: The Case of Zimbabwe

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### I. Introduction and Background

Zimbabwe's drive to hyperinflation and the eventual adoption of a multi-currency system, henceforth referred to as a dollarization in February 2009, is well documented in literature. For over a decade and before the adoption of dollarization, the country's year-on-year inflation, as measured by the consumer price index (CPI), persistently increased. During that time, the economy experienced high levels of money supply growth, distorted prices and acute foreign currency shortages proliferated, in part, by speculation in a number of economic sectors. These developments gave rise to high inflation and consequently declining Gross Domestic Product (GDP) as well as the deterioration of the country's balance of payments (BOP) position. In March 2007, price increases reached hyperinflation levels, defined as a rate of inflation per month that exceeds 50 percent. The year-on-year inflation peaked at 231 million percent in July 2008.

Zimbabwe adopted dollarization in a bid to manage hyperinflation and an economic crisis. Dollarization brought about economic stability, particularly during the second half of 2009. The country's real GDP growth increased from 5.7 percent in 2009, albeit from a low base, to 10.6 percent in 2011, before moderating to an estimated 1.2 percent in 2015. The recovery was largely due to improved policies, a favourable external environment and stability brought about by dollarization.

Post the adoption of dollarization, adverse inflationary pressures have remained subdued. Since the beginning of 2012, Zimbabwe's annual inflation has been on a downward trend, initially exhibiting characteristics of disinflation and subsequently deflation. This phenomenon has raised questions among policymakers and the academia about the cause(s) of this sustained

decline in inflation. Insofar as the domestic inflation rate can also be influenced by domestic monetary policy decisions, the adoption of dollarization in Zimbabwe implied that monetary policy instruments, especially money supply and interest rate decisions were effectively taken out of the hands of the Authorities and as such there are virtually no tools at the disposal of the central bank to mitigate effects of both domestic and foreign influences on domestic inflation. This makes an interesting case of investigating the dynamics of inflation in Zimbabwe under dollarization.



External influences in the form of changes in crude oil prices, the South African Rand/United States (US) Dollar exchange rate and the CPI for South Africa are being viewed as the main factors currently explaining inflation dynamics in Zimbabwe. There has been growing concern over the impact of macroeconomic developments in South Africa to Zimbabwe's price level, coupled with declining international energy prices.

## 2. Study Rationale

The study investigated the determinants of Zimbabwe's overall, food and non-food tradables price level post the adoption of dollarization using monthly data from January 2010 to December 2015. The paper focused on external factors (the South African rand/US dollar exchange rate, South African CPI, world grain prices, international crude oil prices, proxied by domestic fuel prices). Also included is the domestic level of economic activity, represented by the volume of manufacturing index. The study sought to answer the following main questions: Do changes to international crude oil prices (proxied by domestic fuel prices), the South African Rand/US dollar exchange rate and the South African CPI have short and long run implications on Zimbabwe's inflation under a dollarized regime? What other factors, if any, are determinants of inflation in Zimbabwe? What are

the possible causes of deflation in Zimbabwe? The focus period coincides with an era when the country has been under a dollarization and when it experienced episodes of disinflation and deflation. While price correction might have been experienced during the first twelve months after the adoption of dollarization, the delimitation of this study excludes that period in order to focus on fundamental short and long term determinants of inflation in Zimbabwe.

## 3. Empirical Results

Three models were estimated, one with the determinants of the overall CPI, Food CPI and Non-Food Tradables CPI. The main findings are that Zimbabwe's short run price level is influenced by changes in lagged overall CPI, domestic fuel prices and domestic volume of manufacturing index. The long run price level is influenced by changes to the South African Rand/US Dollar exchange rate, South African overall CPI, and domestic fuel prices. This is due to high trade linkages between the two countries, with Zimbabwe mainly importing raw materials, intermediate and consumer goods from South Africa. The impact of domestic fuel price (as a proxy for crude oil prices) movements is due to reliance on imported fuel.



A second model was estimated, with Zimbabwe's food CPI as the dependent variable while the South African food CPI, the South African Rand/US Dollar exchange rate, domestic fuel prices, domestic volume of manufacturing index and World Bank grain prices were included as independent variables. The result from the model show that the short-run variations in Zimbabwe's food price level are explained by the lagged domestic food and fuel prices, the exchange rate, the domestic level of economic activity, as measured by the volume of manufacturing index as well as World Bank grain prices. South African food prices do not do not affect variations in domestic food prices. The first and fourth lags of domestic fuel prices have a negative influence on the country's short run price level. The exchange rate and international grain prices have positive effects on domestic inflation, taking effect with a two months lag. Food inflation inertia was also found to be statistically significant.

A third model on Zimbabwe's Non-Food Tradables CPI as the dependent variable was estimated. The independent variables included the South African non-food tradables CPI, the South African Rand/US Dollar exchange rate, the volume of manufacturing index, domestic fuel prices as well as the respective error correction term. The model estimation results show that all the included explanatory variables at varying lags, except the exchange rate, were found to be significant determinants of the current price level in Zimbabwe, in the short run.

## 4. Conclusion and Recommendations

In the short run, changes to the overall domestic CPI are influenced by movements to the lagged domestic overall CPI and fuel. The short-run variations in Zimbabwe's food price level are explained by lagged domestic food prices and world grain prices whereas on-food tradables prices are determined by past domestic and South African non-food tradables prices and the level of domestic economic activity.

