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The Hyperinflation in Zimbabwe

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ABSTRACT: Zimbabwe's economic crisis originates from its struggle for independence in the 1970s. Military adventures and reckless spending led to exploding budget deficits, and the forced seizure of commercial farms almost brought the agricultural production to a halt. Zimbabwe entered into a state of hyperinflation, which culminated in a de facto dollarization of the Zimbabwean economy, made official in early 2009 by the Minister of Finance. Given all the hyperinflations of the past, the question to ask is whether the Zimbabwean experience is an isolated economic novelty; or is rather a repetition of the economic and political follies that have plagued some of the fiat governments of the modern world. This paper provides a detailed historical account of the economic crisis, which we will subsequently compare to other past hyperinflations, first and foremost to Mises's account of the Hyperinflation in Germany of 1920-1923.

KEYWORDS: hyperinflation, inflation, Zimbabwe, monetary policy, fiscal policy

JEL CLASSIFICATION: E31, E51, H63, N87

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> They had learned then how easy it is to issue it; how difficult it is to check its overissue; how seductively it leads to the absorption of the means of the workingmen and men of small fortunes; how heavily it falls on all those living on fixed incomes, salaries or wages; how securely it creates on the ruins of prosperity of all men of meagre means a class of debauched speculators, the most injurious class that a nation can harbour—more injurious, indeed, than professional criminals whom the law recognises and can throttle; how it stimulates overproduction at first and leaves every industry flaccid afterward; how it breaks down thrift and develops political and social immorality. (Andrew Dickson White, 1876, p. 52)

INTRODUCTION

Zimbabwe, the former Rhodesia, is home to the Victoria Falls and well known for its wildlife and natural beauty. Its rich soil supplied surrounding countries with agricultural goods, and Zimbabwe played a significant role on the international food market. Military adventures and reckless spending led to exploding deficits, and the forced seizure of commercial farms almost brought agricultural production to a halt. In the final years of its economic ruin, Zimbabwe entered into a state of hyperinflation, which culminated in a de facto dollarization of the Zimbabwean economy, made official in early 2009 by the Minister of Finance.

The crisis had its roots in Zimbabwe's struggle for independence, which took place in the 1970s. This struggle, known as the Second Chimurenga, culminated in Zimbabwe's declaration of independence on April 18, 1980. The incumbent President Mugabe has repeatedly referred to the current period of Zimbabwe's history as the Third Chimurenga: the final stage in Zimbabwe's battle against those he terms the "neo-colonialists" (Raftopoulos, 2009). These events arose in a time of momentous political action in the form of land reform, whereby nearly all the commercial farming land was expropriated from the largely white community of commercial farmers, and distributed to the landless black majority. In early 2000, encouraged by government promises and the apparent lack of police intervention, hundreds of white-owned farms were invaded and taken over by war veterans (Chiimba, 2005). These events, coupled with the Zimbabwean

government's fiscal and monetary policies, led to progressively higher rates of inflation.

A budget deficit can only be financed by limited means: by borrowing abroad, borrowing domestically, running down foreign exchange reserves, or by printing money (Fischer and Easterly, 1990). As inflation spirals upward, the fiscal authorities (by this point in effective control of the monetary authorities) must stay ahead of inflation and, particularly, of inflationary expectations, in order to maintain the real value of revenue (Siklos, 2000).

The question to be asked is whether the Zimbabwean experience is an isolated economic novelty; or, rather, simply a repetition of the economic and political follies that have plagued some of the fiat governments of the modern world? The purpose of this research is to provide a detailed historical account of the economic side of the crisis, documenting the observable causes and phenomena that accompanied it. This account will then form the basis of an historical analysis of the key features that the Zimbabwean episode shares with other past hyperinflations.

EXISTING LITERATURE

Contemporary inflation-oriented research is split between empirical works concerned with short-run effects on income, and theoretical contributions with long-term considerations (Nordhaus, 1973). Inflation is broadly defined as the increase in the cost of living, generally measured in terms of a consumer price index (CPI) (Siklos, 2000). There are different explanations of *hyper*inflation to be found in academic literature. Definitions include rising prices by more than 50 percent per month (Cagan, 1956, p. 25) or when price rises reach an annual rate of 100 percent in any one year (Capie, 1986; Fischer et al., 2002).

When hyperinflations first became a topic of academic and political discussion after the end of the First World War (and the five great hyperinflations that followed it in Germany, Austria, Poland, Hungary and the Soviet Union), the discussion centred on the question of whether hyperinflation was caused by monetary expansion, or by an imbalance in the balance of payments (Fischer et al., 2002). The balance of payments view put particular

emphasis on the assumed exogenous behaviour of the exchange rate: a view held throughout the German hyperinflation by the Reichsbank, bankers, industrialists, much of the press, and most German economists (Bresciani-Turroni, 1937). Another branch of the literature views inflation as a tax on the public, shifting the emphasis from monetary to fiscal factors as being the root cause of hyperinflations. Once prices begin to rise, they become, in effect, "a tax on holding money" (Lerner, 1955). Due to lags in tax collection, high inflation causes the real value of government tax revenues to be eroded (Keynes-Tanzi effect).

Inflation also has strong effects on wealth distribution. David Hume (1970), while exclusively focusing on the units-change aspect of money stock inflation in his quantity theory, saw no widening wealth gap, as the inflation tax would deplete everybody's money in the same way. Provided that the additional money stock is distributed equally to all economic actors in proportion to their current money stock and that all actors are fully aware of this change in the money stock at the same time, he was right (Balac, 2008). Still, these assumptions are unlikely to be met. Lucas (1996) expanded Hume's theory by adding the distinction between anticipated and unanticipated changes in inflation. The first one, in alignment with Hume, had no effect, whereas the latter was capable of stimulating production or inducing depression.

Hume (1970) admitted that monetary distribution processes are not implemented proportionally and elaborated on consequence of imperfect information distribution. The two outstanding scholars of the Austrian School of economics, Mises (1996) and Rothbard (1994) built on Hume's theory that disproportionate monetary distribution penalizes the last holders of the new money which became the Austrian inflation theory.

There are a great number of historical accounts of inflationary episodes, some more descriptive, others analytical.[1] Of particular interest regarding previous accounts of inflation and for the readers

[1] For other episodes of hyperinflation, please see—among others—Bernholz (1988), Bomberger and Makinen (1983), Capie (1991), Campbell and Tullock (1954), Graham (1930), Makinen (1986), Makinen and Woodward (1989), Sargent (1982), and White (1959).

of this publication is Mises's account of the German hyperinflation of 1920–1923 (Mises, 1932). His key observations will provide the basis for the analysis of the accounts in Zimbabwe. Mises observed that, at the beginning of the inflation in Germany, price rises did not reflect the growth in money supply. When consumer prices started to pick up, government was quick to blame others for the price hikes. Money holders believed the government rhetoric and ascribed the reasons for rising prices of commodities to causes other than the printing of money.

> When the war inflation came nobody in Germany understood what a change in the value of the money unit meant. The business-man and the worker both believed that a rising income in Marks was a real rise of income. They continued to reckon in Marks without any regard to its falling value. The rise of commodity prices they attributed to the scarcity of goods due to the blockade. When the Government issued additional notes it could buy with these notes commodities and pay salaries because there was a time lag between this issue and the corresponding rise of prices. The public was ready to accept notes and to keep them because they had not yet realised that they were constantly losing purchasing power. This went on for years (Mises, 1932).

Once the man on the street associated the explosion of prices with the monetary policy, the demand for money declined drastically. Instead, people tried to avoid holding money and sought alternatives like commodities.

> ...But as they learned that the Government was determined not to stop with the further issue of notes and that the increase of their quantity must lead to a progressive rise of prices their conduct changed. Everybody became anxious not to keep the money in his pocket. ... At once they handed it over to their wives and these hurried to spend it as quickly as possible by buying at any rate something or other. Nobody wished to retain money, everybody dropped it like a live coal (Mises, 1932).

In the third phase, the demand for commodities pushes prices far above the rise in money supply. As an outcome, the government is pushed to print even more money, making things worse.

When this tendency, which on the Stock Exchange was called *Flucht in die Sachwerte*—flight into investments in goods—became general, so that even the least business-like people adopted it, the end was at hand (Mises, 1932).

METHODOLOGY

When Zimbabwe was struck by hyperinflation, the effects for the country and the wealth of its inhabitants were devastating—as devastating as the many episodes of hyperinflation before.

In 1959, Hazlett (p. ii) wrote in his foreword to White's account of the French hyperinflation:

> Perhaps the study of other great inflations—of John Law's experiments with credit in France between 1716 and 1729; of the history of our own Continental currency between 1775 and 1780; of the Greenbacks of our Civil War; of the great German inflation which culminated in 1923—would help to underscore and impress [the] lesson. Must we from this appalling and repeated lesson draw once more the despairing conclusion that the only thing man learns from history is that man learns nothing from history? Or have we still time enough, and sense enough, and courage enough, to be guided by these dreadful lessons from the past?

In this paper we set out to follow up on Hazlett's desperate call to learn from past experiences. We want to see if the events that led to hyperinflation in Zimbabwe were unique and thereby unavoidable, or if they were a repetition of the trap that had led to the demise of so many economies before.

The paper gives an historical account of what has happened in Zimbabwe and compares it to previous accounts of hyperinflation. We want to find out if there is anything new to learn from the Zimbabwean experience or if the only lesson is that we have not learned anything from the past.

Due to the chaos and uncertainty that accompanied the crisis in Zimbabwe, reliable data are scarce and often unavailable. However, we use a number of authoritative sources, including the IMF and the United Nations. Where these sources were unavailable, or did not provide relevant information, reliance was placed on articles published in the popular press, and news issuances from the Reserve Bank of Zimbabwe. We maintained a critical position towards the reliability of these sources.

Until 2006, the IMF held yearly Article IV Consultation meetings with members of Zimbabwe's government and representatives from the Reserve Bank of Zimbabwe (RBZ). Annual reports of these

meetings were published, in which the economic background of the country, as well as, the specific economic developments for the year under review, were disclosed and discussed with regard to their policy implications. However, a country has the right to veto the IMF report on an Article IV Consultation meeting. In December 2006, an Article IV Consultation meeting took place; after which Zimbabwe presumably exercised its right to veto the report, as no report was issued. The Article IV Consultation meetings subsequently ceased, and then recommenced in March 2009; with the IMF releasing a report on the talks in May 2009.

With regard to the years for which an Article IV staff report was released, the IMF publication forms the basis of the historical account. For the interim period of 2006 through to 2008, greater reliance was placed on the weekly economic bulletins issued by the RBZ, and articles in the popular press. The account for these periods was supported, wherever possible, by references to academic literature covering the crisis.

Financial data for the crisis are unreliable, due to time lags in the collection of the information by the RBZ, as well as the underground nature of financial transactions at the time. The parallel exchange rate movements are often used as a proxy for inflation, as most goods came to be denominated in foreign currency. Unfortunately, there are no official data for the parallel exchange rate. Some Zimbabwean economists and news sources maintained a running quote of the parallel rate; but these are unconfirmed, difficult to obtain, and often have large discrepancies when compared.

However, with regard to the parallel rate, the United Nations publishes its own official rate that it uses in its projects. Normally, these rates are set for a period, and then subsequently revised. In January 2009, the UN was continuing to quote an exchange rate of some 350 nonillion Zimbabwe dollars to one US dollar (old Zimbabwe dollars), but by this point, the Zimbabwe dollar had effectively ceased to function.

The official inflation rate came under a great deal of scrutiny in the latter phases of the hyperinflation; as almost 70 percent of the basket was publicly administered under price control measures as of mid-November 2002 (IMF Staff Report, 2003).

THE ZIMBABWEAN HYPERINFLATION: THE BEGINNING OF A CRISIS (1997–2000)

"In the second decade of its independence, the Zimbabwean government launched an economic reform programme essential in liberalizing the economy and dealing with the structural impediments to growth" (IMF Staff Report, 2000). However, fiscal policy was weak and monetary policy unsteady during the time period; and the country suffered from two serious droughts (in 1992 and 1995), which affected Zimbabwe's agriculture, its primary economic industry (IMF Staff Report, 2000). A land reform had been a highly contentious issue since independence, as the majority of prime agricultural land was owned by about 4,000 white commercial farmers; while the indigenous population continued to engage in subsistence farming (Chiimba, 2005).

In the first five years of independence, land resettlement was conducted under government's "first option to buy" at market prices: resulting in resettlement on some 3 million hectares.

Subsequently, the 1992 Land Acquisition Act provided for compulsory purchase of farms, as long as the property was derelict, located on underutilized land, owned by absentee landlords, or surrounded by communal areas, and the owner had multiple farms. The act required fair compensation and provided a right of appeal (IMF Staff Report, 2000).

In the second half of 1997, under mounting political pressure, the ZANU-PF government announced a new compensation and pension plan for war veterans of the independence struggle. The payouts applied to approximately 60,000 war veterans, each of whom were to receive an immediate compensatory payment of ZW$50,000 (the equivalent of US$ 3,000 at the time), alongside a monthly pension equivalent to US$ 125 (Chitiyo, 2000). The total package amounted to approximately 3 percent of the 1997 GDP; and was not included in the 1997 budget for the fiscal year. The payments had the immediate effect of inflating the budget by 55 percent on the previous year (Kairiza, 2009). The following month, Zimbabwe's standing line of credit with the World Bank was suspended until the government had demonstrated that the payments would not result in a higher than the projected 8.9 percent budget deficit in the 18 months leading to December 1998 (Kairiza, 2009).

Following the new pension package, the war veterans expressed discontent with the success of the previous land reform program, and began to press for its acceleration. In November 1997, President Mugabe responded to these pressures, announcing plans for the compulsory acquisition of white-owned commercial farms, again without elaboration on the financing side of the transaction (Kairiza, 2009). Thus, 1,471 commercial farms, representing a significant portion of Zimbabwe's commercial farming land, were gazetted for compulsory purchase (IMF Staff Report, 2000).

The lack of budgeted financing for both the pension payment packages and the land acquisition process created investor panic about the future fiscal position of the Zimbabwean government. The resulting flight of foreign capital caused crashes in the Zimbabwean money and capital markets and exhausted the foreign reserves of the RBZ (Kairiza, 2009). This culminated in the crash of the Zimbabwe dollar on November 14, 1997, a day referred to as "Black Friday" by Zimbabweans, when the Zimbabwean dollar lost 75 percent of its value against the US dollar (Raftopoulos, 2009).

At the time, it was government's intention to finance the scheme through tax increases in the 1998 budget; but the widespread protests of January 1998, organized by the Zimbabwe Congress of Trade Unions (ZCTU), resulted in a reversal of this policy when the government was forced to monetise the debt (Amani Trust, 1998). The food riots erupted in response to the steep rise in the cost of "mealie meal," paralyzing the country for two days (Raftopoulos, 2009). In response to the public pressure, the government introduced price controls, accusing Zimbabwe's industries of "profiteering" (Kairiza, 2009). Then in September 1998, even as economic conditions continued to worsen, the President sent 11,000 troops to the Democratic Republic of the Congo (DRC) to back the discredited leader, Laurent Kabila; who was facing a civil rebellion backed by Rwanda and Uganda (Kairiza, 2009). The military move was unbudgeted.

At the same time, the government continued its land reform process, issuing acquisition orders in November 1998 to 841 farmers who had contested the 1997 compulsory purchases. The state also reacted to the growing influence of the trade and labor unions by imposing the Presidential Powers (Temporary Measures)

Labor Regulations of 1998 which imposed heavy penalties on trade unions and employers that incited or facilitated strikes, stay-aways, and other forms of unlawful collective action (Raftopoulos, 2009).

In early 1999, the government's increasingly controversial activities caused foreign donors to begin scaling back their assistance (IMF Staff Report, 2000), with both the World Bank and the IMF suspending aid (Reuters, 2007). The pressure on the Zimbabwean dollar continued to build as Zimbabwe's foreign reserves dropped to dangerously low levels. In response, the RBZ reintroduced widespread import controls and banned foreign currency accounts (FCAs) (Kairiza, 2009). The banning of the FCAs effectively meant that the RBZ was authorized to retain all export proceeds.

In response to economic pressures, the government reached an agreement with the IMF for the initiation of an economic recovery program, supported by the 1998 Stand-By Arrangement. The program aimed to achieve a decline in inflation to 30 percent by the end of 1999 (from the 47 percent level in 1998), real GDP growth of 1.2 percent, and a US$160 million gain in net official international reserves. This adjustment in fiscal policy was to be supported by tight monetary policy and confidence-building measures, including aligning the land reform process to the strategy agreed upon during the 1998 international conference; disclosure of the cost of Zimbabwe's involvement in the DRC conflict; a rollback of emergency trade and capital controls; and an acceleration of the privatization of state-owned public companies (IMF Staff Report, 2000).

However, action under the program was weak, and inflation continued to rise to a peak of 70 percent in October, before easing to 57 percent by the end of 1999. Real GDP also fell by 0.2 percent as a 7 percent decline in manufacturing output more than offset gains in agriculture and tourism. Net international reserves had increased by US$314 million in 1999, but pledging and collateralization of foreign assets had left usable reserves depleted.

In summary, by the turn of the millennium, Zimbabwe's economic situation had become precarious. As a result of its political positions, the country had lost access to international aid. Furthermore, as a result of decreased investor confidence

alongside a fixed exchange rate regime, foreign reserves had been effectively depleted by the RBZ's attempts to prop up the currency. The monetary and fiscal authorities had already begun to use the printing press to finance the deficit, initiating Zimbabwe's run toward hyperinflation.

THE REDISTRIBUTION OF LAND (2000–2003)

On February 12–13. 2000, a constitutional referendum proposed by the ZANU-PF was held. Within the week, the draft constitution was rejected, thanks in large part to the efforts of the commercial farmers (Raftopoulos, 2009). Only days later, war veterans retaliated against the "white settlers," beginning a string of violent farm invasions (IMF Staff Report, 2003). An estimated 1,600 farms were occupied. In April, parliamentary approval was given to a constitutional amendment permitting compulsory acquisitions of land, and the amendment was formally incorporated into the Land Acquisition Act in the following month (IMF Staff Report, 2000).

In June 2000, a fast-track resettlement program was announced by the government, "covering 5 million hectares and 150,000 families in 2000, compared with the 3.3 million hectares and 73,000 families resettled since independence" (IMF Staff Report, 2000, p. 11). In the process, the state listed 2,455 farms for acquisition. In terms of the announcement, the government would provide compensation for any capital improvements to the land, but not for the land itself (IMF Staff Report, 2000).

In an attempt to prop up its foreign reserves, the RBZ began to enforce exchange controls on exporters. From May onwards, most exporters were required to sell 25 percent of their proceeds, which the RBZ would earmark for imports of fuel, electricity and other priority energy supplies. Tobacco exporters, however, were required to sell 75 percent of their receipts, in proportions specified by the RBZ, to the state oil and power companies, to the RBZ (for exclusive use for debt-service payments), and to the tobacco growers' association (ZTA) to finance imports of raw materials (IMF Staff Report, 2000).

In August, the RBZ eased monetary conditions by "capping its benchmark bank rate at 2–2.5 percentage points above the most

recent 12-month rate of consumer price inflation (and treasury bill yields at 1 percentage point below the bank rate)" (IMF Staff Report, 2000, p. 12), and by permitting banks to channel half of their statutory reserves into "subsidized export credits" designed to finance export activities at subsidized rates (IMF Staff Report, 2001). The equivalent of about 30 percent of reserve money was released through this scheme, at an interest rate of 30 percent (compared to a bank rate of 56 percent, and year-on-year inflation of 54 percent). This accelerated broad money growth from 30 percent in 1999 to 60 percent in 2000 (IMF Staff Report, 2001).

Also in early August, the RBZ announced a 24 percent devaluation of the Zimbabwe dollar, introducing a crawling peg exchange regime. Despite subsequent adjustments, however, the RBZ failed to adequately adjust the exchange rate, and the currency was still significantly overvalued by year end, with the parallel market about 25 percent more depreciated than the official rate (IMF Staff Report, 2001).

Severe shortages of fuel, electricity, and other essential imports, and a backlog of private service remittances, continued throughout 2000. The stock of external payment arrears had reached about US$500 million at the end of September (including arrears to the World Bank, the African Development Bank, and the European Investment Bank that prompted suspension of disbursements). The public sector owed approximately three-quarters of these arrears (IMF Staff Report, 2000).

By mid-November, usable foreign reserves remained critically low at US$12.3 million, or "about 3 days of projected 2000 imports of goods and services" (IMF Staff Report, 2000, p. 11), although this had risen to US$22 million by the end of the year.

Despite a Supreme Court ruling on November 10 ordering the eviction of squatters, farm invasions were continuing . And in December 2000, the Supreme Court issued an interdict against further land acquisitions, declaring that the government's fast-track land reform programme violated the constitutional rights of commercial farmers (IMF Staff Report, 2001).

Inflation accelerated after mid-2001. Government borrowing from the RBZ approached the statutory limit of 20 percent of the previous year's revenue, and interest rates remained sharply

negative in real terms. The government began to enforce a requirement that 45 percent of institutional investors' portfolios be held in low-yielding longer-term government securities. This, together with the collapse of interest rates, weakened the financial positions of insurance companies, pension funds, and banks (IMF Staff Report, 2001). Institutional portfolios became subject to a steady and methodical process of confiscation (Robertson, 2007).

The IMF mission observed that there was no evidence to suggest that the government's strategy had been successful, as business fixed investment and construction had "essentially ceased." Rather, the negative real interest rates had caused asset substitution away from money market instruments, creating "bubbles in equity and residential real estate prices" (IMF Staff Report, 2001, p. 9). These pricing bubbles were exacerbated by the emergence of a growing class of speculators with access to bank loans at negative rates of interest. In particular, the RBZ's subsidized credit scheme added liquidity to the financial system, helping to fuel the asset price bubble as the low-cost resources had been used, in part, by exporters to buy shares on the Zimbabwe Stock Exchange or real estate (IMF Staff Report, 2001). Negative real interest rates also encouraged an attitude of "buy now" rather than wait, further contributing to the acceleration of inflation (IMF Staff Report, 2001).

The authorities continued to introduce new exchange measures, intended to mitigate the loss of competitiveness and curb the activities of the parallel market. In June 2001, the RBZ increased the surrender requirement for all exporters (with the exception of the tobacco exporters) to 40 percent from 25 percent (IMF Staff Report, 2001). The IMF observed that given the wide spread between the official and black market exchange rates, the 40 percent surrender was an effective tax on exporters (IMF Staff Report, 2001).

Despite the Supreme Court interdict against further land acquisition, the government continued to implement its fast-track program. In July 2001, the government increased the amount of land to be resettled from 5 million hectares to 8.3 million hectares, nearly 70 percent of the large-scale commercial farming land (IMF Staff Report, 2001).

As inflation continued to spiral, the government continued to treat it as a result of "avaricious profiteering" rather than a consequence of the RBZ's inappropriately loose monetary policies (IMF Staff Report, 2001). The government introduced price controls in an attempt to contain inflation, particularly in the prices of key staples. In order to control the pricing of maize and wheat, the Grain Marketing Board was re-established as a monopoly in June. Then, from October 10, the wholesale and retail prices of basic commodities and foods came under government control, resulting in immediate shortages of these commodities (IMF Staff Report, 2001).

From mid-October, the RBZ effectively returned to a fixed exchange rate regime. The Zimbabwe dollar continued to depreciate rapidly on the parallel market, reaching "roughly six times the official rate" by the end of October (IMF Staff Report, 2001).

The land reform program was accelerated further in early November 2001 by a presidential decree amending the Land Acquisition Act. On December 4, 2001, the recently reconstituted Supreme Court reversed its previous ruling, finding the acquisitions of land by government to have been lawful (IMF Staff Report, 2001).

Parliament approved President Mugabe's November 2001 amendments to the Land Acquisition Act on May 8, 2002. Work on these farms was ordered to be suspended immediately, and eviction orders were issued giving owners three months to vacate their properties, setting August 8, 2002 as the deadline for compulsory acquisition (IMF Staff Report, 2003). In August, the eviction orders were ruled invalid by the High Court, because the government did not notify banks holding mortgage titles. In response, the Land Acquisition Act was amended, and approved by the parliament in September, validating the eviction orders and increasing the penalties for non-compliance (IMF Staff Report, 2003).

Nominal interest rates continued to be kept at artificially low levels; and became increasingly negative in real terms as inflation rose. Broad money growth accelerated to 165 percent in 2002 from 103 percent in 2001, as effective lowering of reserve requirements led to the rapid expansion of credit to the private sector; these concessional facilities peaked at ZW$42 billion in July. Contrary

to the government's expectations, the loose monetary stance failed to generate expansion in the production sector; and virtually no productive investment took place. Rather, prices rose rapidly, the black market rate continued to depreciate, financial savings grew increasingly less attractive, and the more rapid asset substitution effect continued to drive up the price bubbles in real estate, stocks, and consumer durables (IMF Staff Report, 2003).

In mid-November 2002, the price controls on selected food items that were introduced in October 2001 were broadened in scope, and extended to a six-month price freeze. With this move, nearly 70 percent of the items in the consumer price index (CPI) basket became subject to administered pricing; making official inflationary figures unreliable. The controlled prices were often below production costs, forcing many companies to close, contributing to a decline in employment in the formal sector. As the IMF mission observed, this main impact of the controls was to drive up prices in the informal markets (IMF Staff Report, 2003).

At the same time, the government attempted to clamp down on the parallel market exchange rate, the premium on which had reached as high as 2,900 percent during the year. Exchange controls were tightened, and foreign exchange bureaus were closed, leaving banks as the only authorized dealers in foreign exchange. Surrender requirements were further increased to 50 percent, while the balance retained by exporters had to be deposited with the RBZ, with its utilization "limited to a priority list and subject to RBZ approval" (IMF Staff Report, 2003, p. 14). As a result, the RBZ saw its inflow of foreign exchange slow as most transactions moved to the parallel market, which appreciated slightly as the majority of export receipts were sold on the parallel market.

In late 2002, Agriculture Minister Joseph Made declared the "land-grab" to be over, stating that the government had seized 35 million acres of land from white farmers (BBC, 2009). By the end of the year, almost all white-owned farms had been designated for acquisition by the State (IMF Staff Report, 2003). By the beginning of 2003, the majority of farmers had left their farms in compliance with the eviction orders (IMF Staff Report, 2003). The decline in agricultural production began to negatively affect the manufacturing sector, which was predominantly agriculture-based (IMF Staff Report, 2003)

In January, the authorities revised their approach to price controls, issuing a Prices and Incomes Stabilization Protocol. In terms of the protocol, the negotiation of prices would take place within the Tripartite Negotiating Forum (TNF); and the commodities covered included most essential commodities and services (including "mealie meal, cooking oil, salt, milk, sugar, bread, flour, beef, paraffin, sanitary pads, water charges, rentals and rates, and transport fares"). Prices were then to be frozen at negotiated levels until June 30, 2003 (IMF Staff Report, 2003, p. 11).

Following this change in policy, the RBZ began to raise interest rates, but the rates still remained highly negative in real terms. In March 2003, the RBZ began overnight lending to banks at a margin of 20 percent over the repurchase rate, requiring the lodging of securities as collateral; and in April, the repurchase rate was raised to 56 percent (IMF Staff Report, 2003).

On May 6, further price adjustments, including an easing of price controls, were announced (IMF Staff Report, 2003). Prices for subsidized commodities continued to be controlled; and prices for essential goods were monitored, with producers having to "make their case for price increases to the Ministry of Industry and International Trade (MIIT) with profit margins not exceeding 20 percent" (IMF Staff Report, 2003, p. 11). All other prices were liberalized, but made subject to surveillance by the Ministry of Industry and Trade, as well as unspecified "corrective measures to prevent profiteering" (IMF Staff Report, 2003).

At the end of May, RBZ Governor Tsumba went on leave until his retirement at the expiration of his term at the end of July (IMF Staff Report, 2003). Tsumba left a legacy of money creation; by the end of 2003, broad money (M3) had risen to 3,240.3 billion dollars, from 56.6 billion dollars at the end of 1998.

By this stage, Zimbabwe was completely cut off from foreign aid; and the effect of the foreign currency shortages climaxed during 2003. During the first nine months of 2003, a shortage of local banknotes developed, as the RBZ no longer had the hard currency necessary to import the paper and ink required for the printing of bank notes. In August, there was a countrywide bank run as depositors attempted to access their cash, threatening public order.

Anti-riot police were sent to banks to quell angry members of the public unable to withdraw their savings (Kairiza, 2009).

The subsidized credit scheme continued in 2003, driving the acceleration in broad money growth. The availability of cheap credit, as well as consumer attempts to hedge against inflation, perpetuated the pricing bubbles in stock and real estate. (IMF Staff Report, 2004). The combination of low interest rates and rising inflation caused the chronic erosion of the capital base of Zimbabwe's banks (IMF Staff Report, 2003); with the asset base of Zimbabwe's banking system declining by 40 percent in real terms in 2003 (IMF Staff Report, 2004).

On December 1, 2003, Gideon Gono took over as governor of the Reserve Bank . He immediately announced measures to tighten monetary conditions: the news drove up interbank rates, and caused the prices of shares and real estate to plunge (IMF Staff Report, 2004). The RBZ raised the interest rate sharply in the first quarter of 2004, and it reached a peak of 5,242 percent per annum in March 2004. As a result of monetary tightening, inflation, which had increased to a peak of 623 percent in January 2004, decelerated sharply to around 130 percent at the end of 2004 (Reserve Bank of Zimbabwe, 2007b; Kairiza, 2009).

In May 2003, the majority of the price controls were removed, and the fuel market was partially liberalized in August (IMF Staff Report, 2004). Inflation began to slow. The RBZ began to involve itself in quasi-fiscal activities,[2] arguing that it was aiding suffering industries by doing so. These quasi-fiscal activities undid all previous successes in the inflation battle, and firmly set the country on the road toward hyperinflation (Kairiza, 2009). Interest rates were lowered sharply around the end of 2004 (IMF Staff Report, 2005), and the RBZ began to compulsorily convert any surplus in the money market at the close of each day into new "open market" treasury bills with long maturities (of up to 2 years) at deeply negative real interest rates (nominal effective rates

[2] Quasi-fiscal activity: "an operation or measure carried out by a central bank or other public financial institution with an effect that can, in principle, be duplicated by budgetary measures in the form of an explicit tax, subsidy, or direct expenditure and that has or may have an impact on the financial operations of the central bank, other public financial institutions, or government" Mackenzie and Stella (1996).

of 70–100 percent) (IMF Staff Report, 2004). In addition, statutory reserve requirements on deposits were increased to 60 percent for commercial banks and lending houses (Muñoz, 2007).

THE ROAD TO HYPERINFLATION (2005–2007)

The pace of economic deterioration picked up again in the first five months of 2005. Year-on-year inflation stabilized at around 135 percent in early 2005, before picking up again to 164 percent in June. It is suggested that the CPI at the time was unreliable, likely understating inflation (due in part to publicly-administered prices, which were held at artificially low levels), but the extent is difficult to quantify (IMF Staff Report 2005).

The parallel market premium, which had narrowed in early 2004, widened from 45 percent in January 2005 to about 100 percent by early July (IMF Staff Report, 2005). This reflected the loosening of monetary policy in early 2005, as well as the declining availability of foreign exchange in the auction system. There were substantial abuses within the RBZ with regard to surrender requirements. Coltart (2008, p. 4) states that "members of the ruling regime and their associates [became] rich buying up foreign currency at the official exchange rate and then selling it at the black-market rate, pocketing the difference."

In May 2005, government forces retaliated against the urban strongholds of the opposition, initiating "Operation Muramabtsvina"—a Shona term for "the rain that clears away the chaff"—which targeted the informal sector in urban areas. By 2005, the informal sector had constituted approximately 40 percent of Zimbabwe's workforce. According to UN reports, the informal economy had become the main source of income for most Zimbabweans by the time Operation Murambatsvina took place (Tibaijuka, 2005). Over a two-month period, police and army forces bulldozed shanty buildings, destroying whole townships and market areas (Coltart, 2008).

At the beginning of 2006, real interest rates were still deeply negative, and the parallel exchange rate to the US dollar was sitting at ZW$135,000 to one. In February, money market returns were raised by the RBZ, and three month Treasury Bills began to yield

positive real rates of interest. The RBZ also introduced a one-yield index-linked Treasury Bill (Robinson, 2006). This was an important development, as one of the key characteristics of the Zimbabwean money market up to that point had been its lack of variable rate instruments which would have enabled investors to hedge against inflation in the money market.

As the inflation rate edged towards the 50 percent per month threshold of hyperinflation, the inevitable erosion of the inflation tax base worsened. At this point, pension fund assets were more or less eroded; and so the government turned to the banking system in its search for funding (Robertson, 2007). From around May 2006, any surplus or deficit held by a bank at the end of each day would incur massive economic penalties. Either way, given yearly inflation of around 1,200 percent by official estimates, even slightly imprecise liquidity management came with severe cost (Robinson 2006a).

In May, year-on-year inflation exceeded 1,000 percent for the first time (BBC, 2009). In order to conduct even simple transactions, people had to carry large sums of currency. In July 2006, a set of currency reforms termed "Project Sunrise" was announced in the RBZ Governor's Monetary Policy Statement (MPS); these were expected to alleviate this burden. Taking effect on August 1, 2006, the Zimbabwean dollar was replaced by a new Zimbabwean dollar at a ratio of 1000:1. The new dollar was also devalued against the US dollar (Kairiza, 2009). According to RBZ Governor Gono, the effective removal of three zeros would have a "positive psychological effect on people's reference points when comparing the relative strength of the local currency against regional and international prices, as well as, prices for goods and services…" (Reserve Bank of Zimbabwe, 2006a; Kairiza, 2009, p. 12)

In a bid to ease the economic crisis, the government launched its "Look East" program in the latter half of 2006, announcing on December 22 that it was negotiating a US$2 billion loan facility with China. However, the China Metallurgical Group Corporation, the supposed lender in question, denied extending such an offer (The Mail and Guardian (SA), 2006).

When final money supply growth figures were released for December 2006, the annual money growth rate had risen to 1416.5 percent (Reserve Bank of Zimbabwe, 2007a). In early February 2007,

the RBZ declared inflation "illegal," announcing that any person caught raising prices and/or wages between March 1 and June 30 would be arrested and "punished." RBZ Governor Gono stated that only a "firm social contract" would bring about the end of the hyperinflation (Wines, 2007). However, despite this measure, in March 2007 Zimbabwe formally entered hyperinflation according to Cagan's (1956) definition, "when month-on-month inflation reached 50.54 percent and year-on-year 2,200 percent" (Reserve Bank of Zimbabwe, 2007b; Kairiza, 2009, p. 12).

The government continued to lash out against the business community, publishing its Indigenisation and Economic Empowerment Bill in late June, which would require every business to have at least 51 percent of its shares held by indigenous persons (Government of Zimbabwe, 2007). The government announced further price control, halving all prices. The price controls resulted in a run on shops (Reuters, 2007). Over the rest of 2007, manufacturing output fell by more than 50 percent (Coltart, 2008).

By September 2007, despite the price controls, the black market in Zimbabwe was once again booming. According to the press, "people previously employed for a paltry US$11 a month (ZW$2 million) were able to turn as much as US$166 (ZW$30 million) just through black market trading" (Lee, 2009). The final run of hyperinflation was beginning.

THE CLIMACTIC DOLLARIZATION (2008–2009)

Inflation reached 417,823 percent in March, as Zimbabweans returned to the harmonized presidential, senate, and parliamentary polls. The ruling ZANU-PF party lost in all three elections, losing its majority in the legislature for the first time. The presidential ballot required a runoff between Mugabe (with 43.2 percent of the original vote) and Tsvangirai (with 47.9 percent of the original vote), as neither had the outright majority. The run-off election never materialized, as Tsvangirai withdrew citing the high level of violence against his supporters which was inimical to a free and fair poll (Kairiza 2009). Mugabe was sworn in to his sixth term of office (BBC, 2009).

By July, shops were charging double the cash price for a check transaction, due to the time delay in the clearing of the check.

Meanwhile, bank withdrawals were limited to ZW$100 billion, which was less than the cost of a loaf of bread (Lee, 2009). The RBZ introduced the ZW$100 billion banknote in an attempt to alleviate the strain on the printing presses (BBC, 2009).

Hyperinflation was still being fueled by the RBZ's quasi-fiscal activities, which had caused a rapid increase in the banks' deposits with the RBZ, and thereby rapid increases in local currency M3 (includes local currency-denominated cash in circulation and deposits with the banking system). However, the printing of physical notes was unable to match the expansion of local currency M3. In the third quarter of 2008, real money demand and the parallel market exchange rates collapsed in response to the still-accelerating inflation. As a result, by the end of the year, reserve money declined to an equivalent of about US$7 million (at the UN exchange rate of Z$35 quadrillion [$10^{15}$] per US dollar).

In effect, the extreme hyperinflation left the local currency defunct as the economy dollarized in late 2008. Inflation is estimated to have peaked in September 2008 at about 500 billion (10^{9}) percent.[3] From that time, the pricing of goods and services shifted to foreign currency units (mostly, the U.S. dollar and South African rand), and the local currency virtually disappeared from circulation (IMF Staff Report, 2009). Zimbabwe dollar transactions going through banks in the form of checks and direct transfers had effectively ceased by January 2009.

In December, the RBZ licensed around 1,000 shops to sell goods in foreign currency, claiming that this would "help businesses suffering from chronic shortages of foreign currency to import goods and spare parts" (Kairiza, 2009, p. 13). This was the first official recognition of Zimbabwe's unofficial dollarization.

In January 2009, the Minister of Finance gave legal tender status to the South African Rand and the US dollar, completing Zimbabwe's official dollarization (Kairiza, 2009). The newly compiled US dollar CPI for February 2009 showed a 3 percent month-on-month decline, as the significant increase in utility prices was more than

[3] Although official figures give a much more conservative estimate of inflation; indicating that inflation peaked in October at an annualized rate of 231 million percent. *Timeline: Zimbabwe*. (BBC News, 2009).

offset by a fall in tradable prices (IMF Staff Report, 2009). Dollarization helped stabilize prices, improve revenue performance, and, perhaps most importantly, helped impose fiscal discipline on the authorities (IMF Staff Report, 2009).

COMMON FEATURES IN HISTORY

This paper attempts to find common features of historical development, both in the institutional setting and in the course of events. For the latter, we refer to Mises's account of the German hyperinflation in 1923.

At the beginning of the German inflation episode, price rises did not reflect the price in money supply due to the time lag for prices to adjust to the changes in the monetary units. Money holders buy into the government rhetoric and ascribe the reasons for rising prices of commodities to many different causes other than the printing of money. In the case of Zimbabwe, the focus was on the landowning class of white farmers, who were declared political enemies. Also, undefined forces from outside the country (e.g. "neo-colonialists") were blamed. The blaming of the white farmers went hand in hand with land-redistributions and the paying out of generous sums to war veterans. In addition, the cost of military adventures left the government with no other alternative but to monetarize the deficit through the printing of money, as the imposition of new tax was politically infeasible. All of these activities were met with sympathy, as they allegedly helped a good cause.

Yet, as soon as the prices began to rise, nobody wanted to keep cash anymore, and everyone tried to get rid of it through investing in real estate or equity. The prices for both assets started to inflate, fueled on one hand by relatively low interest rates paid on money market papers in comparison to the increase of price levels, resulting in a de facto negative interest rate. On the other hand, some people were allowed access to credit, backed by the RBZ's subsidized credit scheme. These benefited greatly from these windfall profits.

The prices for commodities kept rising, despite far reaching government controls. For certain agricultural products the

government imposed a price freeze, which only resulted into more black-market activities. For foreign currencies like the US dollar or the South African rand, the black market exchange rate far exceeded the official exchange rate.

Through these price rises, the public demanded more money to purchase the goods which now had severely inflated prices. This was particularly visible when the government lowered the reserve requirement of banks in order to revitalize the country's productive ability. Instead of generating expansion in the production sector, the loose monetary stance pushed up the prices of all asset classes as the additional liquidity was used to purchase whichever asset was available in order to protect its value from further inflation.

After having demonstrated that the road to hyperinflation followed the pattern which has already been identified by Mises on the German hyperinflation in 1920–1923, we now set out to see if findings from other writers are also to be found in the case of the Zimbabwean hyperinflation.

IDEOLOGICAL GOVERNMENTS: INFLATION AS A TOOL TO ACHIEVE SOCIAL REFORM?

Ideological governments tend to fight what is beyond their control, in particular the free market. Once policies are implemented that interfere with these forces, the market will continue to react. More often than not, the forces of the free market do not simply cease their existence, but rather find different ways to manifest themselves.

Zimbabwe's government had sprung from guerrilla roots and its ideology still retained its revolutionary flavor. Fashioned after the communist movements in Cuba and the Soviet Union, the military influence in politics was huge. Communist ideas were behind the attempt to restore a "balance" of power and economic wealth, away from the white colonial minority, and toward the indigenous majority.

The forceful dispossession of the landowners followed a similar logic as so many dispossession waves before. The move toward indigenization is similar to the Communist nationalization in the Soviet Union. In mid-1918, the Communists nationalized all large factories,

banned private trade and appropriated goods and resources from the rich and the middle-class (Fischer, 1994). The dispossession was depicted as a necessary act to achieve a greater good in society. Yet, it was also the beginning of the Soviet Union's hyperinflation.

When Nicaragua in the early 1980s introduced a state-socialist regime, the state expropriated large amounts of agricultural land and distributed it to "landless peasants and cooperatives" (Kagami, 2007, p. 2). After the redistribution, 17.1 percent of all agricultural land was occupied by state farms, and 20.1 percent by Sandinista cooperatives (Jonakin, 1997). By 1985, extremely high government deficit spending had exhausted all forms of alternative financing, and the Sandinista government began printing money. The monetary base increased by 186 percent in 1985, 235 percent in 1986 and 610 percent in 1987. The ensuing hyperinflation (as measured by the consumer price index) reached 14,361 percent in 1988 (Kagami, 2007). The costs of the redistribution process had partly caused the deficit in Nicaragua, and the poor production from the seized land had reduced exports (and the corresponding inflows of foreign currency), as well as increasing the import requirement (and the corresponding outflows of foreign currency).

Nevertheless, high inflation can also be used as a tool to speed up the achievement of a perceived equality of the "classes." Lenin is said to have looked to the debauching of a country's currency as the best way to the overthrow capitalism (Keynes, 1920). Through a prolonged period of inflation, a government can confiscate the wealth of its citizens. This potential to use money creation to enforce a communist ideology was seen in the Soviet Union hyperinflation. "The new regime had a clear desire for rapid inflation to wipe out the middle classes and speed the revolutionary cause" (Capie, 1986, p. 128). The drastic depreciation of the rouble was justified by the Soviets as a method of expropriating the bourgeoisie (Maier, 1978). A similar event happened in Hungary, when the Soviets overruled the Hungarian Central Bank's objection to the vast numbers of Treasury Bills being issued (Capie, 1986).

In the Zimbabwean situation, the government's aim was to reduce the economic power held by the white minority, and this was accomplished. The real sufferers in the lower classes were the urban-dwelling poor, and the middle-class white population. Given that the voting stronghold of the ruling party was always

the rural vote, and that the urban vote has traditionally been more strongly in favor of the opposition; the hyperinflation could be seen as an attack against the opposition. In most of these episodes, it is observed that the greatest sufferers during hyperinflation are the ruling government's opposition.

As White (1959, p. 32) puts it:

> statesmanlike measures, careful watching, and wise management would, doubtless, have ere long led to a return of confidence, a reappearance of money, and a resumption of business; but these involved patience and self-denial, and, thus far in human history, these are the rarest products of political wisdom. Few nations have ever been able to exercise these virtues.

The ideological influence and lacking sense of reality of the key players contributed to the economic downturn of Zimbabwe. Besides Robert Mugabe, we want to add a couple of lines from Gideon Gono who, at the time of hyperinflation, was the Governor of Zimbabwe's reserve bank. As a close ally of Robert Mugabe, he started to expand his activities more and more into business activities. In a later interview with *Newsweek* he justified his actions by the novelty of the situation he faced:

> I've been condemned by traditional economists who said that printing money is responsible for inflation. Out of the necessity to exist, to ensure my people survive, I had to find myself printing money. I found myself doing extraordinary things that aren't in the textbooks. ... I decided that God had been on my side and had come to vindicate me (*Newsweek*, 2009).

Besides these quite remarkable statements, Gono referred to outside forces which were against the Zimbabwean government and, in his view, were truly responsible for the downturn:

> There is a very high level of indiscipline and corruption in the Zimbabwean economy. I would enact tougher legislation that would ensure offenders would never do it again. I would also deal differently with the critics of our land-reform programs, and invest more in educating them. We were outwitted in the propaganda war. We didn't go out there to explain to the world how our war of liberation came about in the first place (*Newsweek*, 2009).

CUT OFF FROM INTERNATIONAL MONETARY MARKETS

In covering the deficit created by the fiscal shocks of the war veteran compensation scheme and the military involvement in the DRC, the Zimbabwean government had no real alternative to monetizing its debt. Foreign exchange reserves had been depleted previously in an attempt to prop up the Zimbabwe dollar in the mid-nineties; and foreign credit was hard to come by, due to Zimbabwe's controversial policies on land reform, and the accompanying economic uncertainty. The lack of foreign credit has contributed to the development of hyperinflations in the past.

The Bolivian hyperinflation was the result of a series of less dramatic fiscal shocks occurring during a period of political instability (Sachs, 1987). After General Banzer left office in 1978, the civilian and military political forces fought a political competition for power. On top of the political crisis, Bolivian access to international capital markets had dried up by the end of 1980; and the World Bank and the IMF ceased lending money in the following year.

In the second half of the 1970s, Bolivia had begun to show growing fiscal deficits (including losses of government-owned firms), which it had financed with foreign borrowings. With access to more international financing drying up, the situation culminated in a foreign exchange crisis in March 1982; and the consequent devaluation of the Bolivian peso sparked a cost-push rise in inflation due to rising import costs. The deficit continued to increase and the Bolivian government was forced to finance the deficit by printing money (Bernholz and Kugler, 2009).

THE FAILURE OF PRICE CONTROLS

As with many hyperinflationary episodes, the French government attempted to implement price and exchange controls. In 1793, an exchange control known as "the Law of the Maximum" was enforced, decreeing that "any person selling gold or silver coin, or making any difference in any transaction between paper and specie, should be imprisoned in irons for six years; that anyone who refused to accept payment in assignats, or accepted assignats at a discount, should pay a fine of six thousand francs and suffer

imprisonment for twenty years in irons" (Hamilton, 1977, p. 277). Hamilton (1977) also comments on the failure of the price controls during the French episode, and he observes that during the Reign of Terror (1793–1794), ceilings on grain prices were ridiculously low and effectively enforced by ruthless use of the guillotine. Although sales above the price ceilings seldom occurred, the authoritarian regime failed miserably in its efforts to force holders of grain to sell.

When the Zimbabwean government announced that price controls are the appropriate means to tackle inflation, each citizen faced an ethical dilemma: either comply in the hope that all will follow suit, or break the price control in order to reap the profits that the otherwise compliant have sacrificed. When the governor of the Zimbabwean Reserve Bank suggested that the only solution to the crisis was a firm social contract, the public largely remained unconvinced. Such a contract would require each and every player to commit to a common rule. When the proponents of this contract have preceded their announcement with mismanagement and corruption, it is almost inevitable that the public will choose to break with price controls, causing everyone to lose when the inflation returns worse than before.

INTERESTS OF THE NEWLY-RICH: THE DESTRUCTION OF DEBT

Once an inflationary spiral is underway, the growing class of speculators, who have benefited from the inflation (White, 1959), seek to prolong the episode in order to increase their gain. Manufacturers and producers are principal beneficiaries of the collapse of a currency: wage rates rarely keep up with the rate of inflation, taxes are eroded, the real value of mortgage debts are rapidly reduced; bank credits can be used to purchase real assets and foreign exchange; and the difference between internal and external prices can be a source of considerable gains for exporters (Bresciani-Turroni, 1937).

In France, the issue of assignats created a vast class of debtors, who had only been required to put small payments down, with the balance being paid in installments (White, 1959). "This body of debtors soon saw, of course, that their interest was to depreciate the currency in which their debts were to be paid. This great

debtor class, relying on the multitude who could be approached by superficial arguments, soon gained control" (White, 1959, pp. 184, 185). By the end of the inflation, one could settle a debt of 10,000 francs taken out in 1790 for about 35 francs (in real terms).

In Germany, the inflation would not have reached such large proportions if it had not been favored in many ways by those who drew profit from it (Bresciani-Turroni, 1937). Representatives of these classes used their influence to slow monetary and fiscal reforms, as well as to sabotage all proposals for the stabilization of the German exchange. Reform was only accepted when, at the end, Germany faced economic catastrophe, and it became clear that the consequences of inflation would rebound against its supporters. It seems certain that the industrial classes contributed greatly to the mark's depreciation, alongside the agriculturalists, whose mortgage burden was reduced due to inflationary erosion.

As with all the cited episodes, the RBZ also made loans at negative real rates of interest through its subsidized credit scheme for exporters. It also forced the commercial banks to offer loans at negative real rates of interest, by legally requiring any excess at the end of the day to be invested in highly negative yield government securities.

CONCLUSION

In conclusion, we have identified the following key characteristics that are shared between the Zimbabwean experience and other, mostly classical, hyperinflations:

1. Ideological governments use the inflation mechanism to promote their political agendas and find somebody to blame for the rising prices caused by the printing of money.

2. Once inflation picks up, so does flight from the local currency into real assets.

3. The potential for profit during such economic crises creates a class of economic agents whose interest lies in prolonging the hyperinflation.

4. Governments seeking to preserve their inflation tax base generally implement price controls and, no matter how severe

the consequence of violation, these controls eventually fail in the face of free-market forces.

5. When the prices for commodities skyrocket, so does the demand for money, which will lead to more money printing.

Firstly, ideological governments with access to non-autonomous central bank financing have a strong incentive to use hyperinflation as a tool. Through its use as a political device, hyperinflations in the past have shown that it is generally the political opposition (and their supporters) that suffer most. The implication, then, is that the independence of the central bank is of paramount importance.

A second important observation from the Zimbabwean hyperinflation is that large fiscal deficits need long-term fiscal reforms. This includes the design of taxation systems that allow rapid expansion of the tax base in the event of fiscal shocks. While efficient tax systems are not always politically wanted, the alternative is surely much worse. Judging from past experience, efficiency in a taxation system implies that the tax be readily collectible (as is the case in direct taxation systems), and that it be collected in a timely manner. When the taxation system is inefficient, the budget remains particularly vulnerable to unexpected budgetary expenditures; particularly if a large fiscal deficit already exists.

The need for fiscal reform in the presence of long-term fiscal deficits has further implications for certain developing countries. Many of these countries have carried their fiscal deficits for a number of years, and have become reliant on foreign financing to fund their excess spending. Such reliance on foreign aid runs the risk of complacency as it allows governments in power to avoid the necessary (and often unpopular) fiscal reform to correct their fiscal shortfalls. There is perhaps need to question the role that institutions such as the IMF and the World Bank can play in the development of these crises.

In summary, it has been shown in this paper that the Zimbabwean hyperinflation is not an isolated economic phenomenon. Rather, it demonstrates nearly all the general characteristics of a classical hyperinflation: a country, gripped by a growing fiscal deficit, is left susceptible to both internal and external fiscal shocks. The shocks occur before the fiscal deficit can be rectified; and, in this case, they occur as a result of the Zimbabwean government's ideological

policies and its decision to send militia into the DRC. This unbudgeted expenditure leaves the fiscal authorities scrambling for a short-term financing solution. Cut off from foreign funds, and having exhausted foreign reserves, the authorities seek to borrow domestically. At the same time, the Reserve Bank is instructed to begin printing money to cover the increased expenditure requirement. The fiscal authorities struggle to adjust an inefficient tax system and, in the meantime, continue to print money. The public begins to protest against the rising inflation and investor panic deepens as the public begins to fear that money creation is no longer a short-term resort. As inflation begins to spiral, the consequent flight to hedge real wealth causes asset-pricing bubbles. A new class of speculator emerges, and inflation gathers headway as it gains supporters. At this point, flight from the currency gathers momentum, and the government steps in to preserve its tax base: implementing price controls and clamping down on informal markets. The power of market forces overwhelms these attempts and, when the controls are eventually lifted, the inflation returns far worse than before. Without drastic measures being taken, the economy self-stabilizes by converting into an alternate form of currency; and the inflation ends as the public abandons the use of the old currency.

The Zimbabwean economy self-stabilized by converting all transactions into foreign currency. Despite the Zimbabwean government's attempts to keep the Zimbabwean dollar in circulation, Zimbabwe dollar transactions had virtually disappeared by January 2009. The government eventually ratified the dollarization by shifting tax collection into foreign currency. As it stands, it is still unclear as to when the Zimbabwean economy will have its own currency once more. Let us assume that using a foreign currency in an independent country is a short term emergency measure and not a long term solution. No government would want the currency it uses and their competitive position to depend on another government's economic policy. An independent central bank, with the power to resist government demands for domestic finance, can prevent the devastating effect of hyperinflation by resisting government's demands. However, given that it was so easy to lose this independence, why would investors trust the promise of an independent central bank in Zimbabwe ever again?

Most probably, the only reason for investors to provide Zimbabwe with new capital would be yields high enough to outstrip the risk of default. Other than that, no investor would have any incentive to lend money to a state with such an inflationary history. A government in such a situation can either opt to give up future earnings and pay these out to investors who demand more as indemnity against the potential for a repetition of a hyperinflationary event or the government gives up the chance for future money creation entirely. Such a move could easily be achieved by adopting a gold standard. No matter which ideology a government would feel compelled to follow, there would simply be no opportunity to inflate the money supply. Inflation could not be used as a tool to strip those who hold money of their purchasing power. No fiscal deficit could be monetized to finance adventures of any kind. It is difficult, if not impossible, to attach a price tag *a priori* to the cost of establishing trust by fiat money and an independent central bank or by following the gold standard as advocated by the Austrian School of Economics. Nevertheless, to establish the trust of investors, choosing a gold standard might be the better and faster option. For an in-depth analysis of Austrian proposals for monetary reform see Herbener (2002). Our paper has added another case study to the history of monetary inflation. We also have shown that there is nothing new we could learn from the episode in Zimbabwe. It followed the same pattern of government coercion, disrespect for property rights, and reckless use of the monetary printing machines. There is nothing new under the sun. Perhaps Hazlett's lesson will eventually be learned when the burden of historical experience is so voluminously undeniable that it cannot be avoided. If nothing else, these episodes can give the warning signs so that a populus might prevent its government from embarking on a regime of money creation; or warn income-earners to shift investment and savings into areas that are hedged against inflation.

REFERENCES

Amani Trust. 1998. "Zimbabwe Human Rights NGO Forum." *A Consolidated Report on the Food Riots: 19–23 January 1998*. Retrieved from http://www.hrforumzim.com/members_reports/foodriots98/food9801.htm.

Balac, Zoran. 2008. "Monetary Inflation's Effect on Wealth Inequality: An Austrian Analysis." *Quarterly Journal of Austrian Economics* 11: 1–17.

——. *Timeline: Zimbabwe*. 2009. August 3. Available at http://news.bbc.co.uk/2/hi/africa/country_profiles/1831470.stm.

Bernholz, Peter. 1988. "Hyperinflation and Currency Reform in Bolivia: Studied from a General Perspective." *Journal of Institutional and Theoretical Economics* 144: 747-771.

Bernholz, Peter, and Peter Kugler. 2009. "The Success of Currency Reforms to End Great Inflations: An Empirical Analysis of 34 High Inflations." *German Economic Review* 10: 165–175.

Bomberger, William A, and Gail E. Makinen. 1983. "The Hungarian Hyperinflation and Stabilization of 1945–1946." *Journal of Political Economy* 91: 801–824.

Bresciani-Turroni, Costantino. 1937. *The Economics of Inflation*. London: George Allen and Unwin.

Cagan, Philip. 1956. "The Monetary Dynamics of Hyperinflation." In *Studies in the Quantity Theory of Money*, ed. Milton Friedman, 25–117. Chicago: University of Chicago Press.

Campbell, Colin D., and Gordon C. Tullock. 1954. "Hyperinflation in China, 1937–49." *Journal of Political Economy* 62, no. 3: 236–245.

Capie, Forrest H. 1986. "Conditions in Which Very Rapid Inflation Has Appeared." *Carnegie-Rochester Conference Series on Public Policy 24*, 115–168. North-Holland: Elsevier-Science Publishers B.V.

——. ed. 1991. *Major Inflations in History*. Aldershot, Hants: Edgard Publishing.

Chiimba, Raymond. 2005. *Land Reform in Zimbabwe 2000–2002: Negative and Positive Effects on the Zimbabwean Economy*. Masters Thesis, Faculty of Economic and Management Sciences, University of Pretoria. Pretoria: University of Pretoria.

Chitiyo, Tapera Knox. *Land Violence and Compensation: Reconceptualising Zimbabwe's Land and War Veterans' Debate*. Track Two Occasional Paper, May. Cape Town, South Africa: Centre for Conflict Resolution and the Media Peace Centre. Retrieved from http://ccrweb.ccr.uct.ac.za/archive/two/9_1/zimbabwe.html.

Coltart, David. 2008. "A Decade of Suffering in Zimbabwe: Economic Collapse and Political Repression under Robert Mugabe." *Development Policy Analysis No. 5*. Washington: Cato Institute.

Fischer, Stanley. 1994. "Russia and the Soviet Union Then and Now." In *The Transition in Eastern Europe: Country Studies*, 221–257.

Fischer, Stanley, and William Easterly. 1990. "The Economics of the Government Budget Constraint." *The World Bank Research Observer* 5, no. 2: 127–142.

Fischer, Stanley, Ratna Sahay, and Carlos Végh. 2002. "Modern Hyper- and High Inflations." *IMF Working Paper WP/02/197 [corrected: 1/31/03]*. International Monetary Fund, Research Department.

Government of Zimbawe. 2007. "Indigenisation and Economic Empowerment Bill of 2007." *General Notice 147/2007*. In *Government Gazette*, June 22.

Graham, Frank D. 1930. *Exchange, Prices, and Production in Hyper-Inflation: Germany, 1920–1923*. Princeton, N.J.: Princeton University Press.

Hamilton, Earl. 1977. "The Role of War in Modern Inflation." *Journal of Economic History* 37, no. 1: 13–19.

Hazlett, R. E. 1959. "Foreword to *Fiat Money Inflation in France*." In *Major Inflations in History*, ed. F. Capie.

Herbener, Jeffrey M. 2002. "After the Age of Inflation: Austrian Proposals for Monetary Reform." *Quarterly Journal of Austrian Economics* 5, no. 4: 5–19.

Hume, David. 1970. *Writings on Economics*, ed. Eugene Rotwein. Madison: University of Wisconsin Press.

IMF Staff Report. 2000. *ZIMBABWE: Staff Report for the 2000 Article IV Consultation*. Washington, D.C.: International Monetary Fund.

——. 2001. *ZIMBABWE: Staff Report for the 2001 Article IV Consultation*. Washington, D.C.: International Monetary Fund.

——. 2003. *ZIMBABWE: Staff Report for the 2003 Article IV Consultation*. Washington, D.C.: International Monetary Fund.

——. 2004. *ZIMBABWE: Staff Report for the 2004 Article IV Consultation*. Washington, D.C.: International Monetary Fund.

——. 2005. *ZIMBABWE: Staff Report for the 2005 Article IV Consultation*. Washington, D.C.: International Monetary Fund.

——. 2009. *ZIMBABWE: Staff Report for the 2009 Article IV Consultation*. Washington, D.C.: International Monetary Fund.

Jonakin, Jon. 1997. “Agrarian Policy.” In *Nicaragua without Illusions: Regime Transition and Structural Adjustment in the 1990s*, ed. Thomas W. Walker. Wilmington, De. SR Books.

Kagami, Mitsuhiro. 2007. “The Sandinista Revolution and Post-Conflict Development—Key Issues.” *IDE Discussion Paper No. 119*. Institute of Developing Economies, August.

Kairiza, Terrence. 2009. “Unbundling Zimbabwe’s Journey to Hyperinflation and Official Dollarization.” *Discussion Paper: 09-12*. Tokyo: National Graduate Institute for Policy Studies, September.

Keynes, John Maynard. 1920. *The Economic Consequences of the Peace*. New York: Harcourt Brace.

Lee, John. 2009. “Zimbabwe: Pathology of Inflation.” *Gold News*. 11 February 11. Available at http://goldnews.bullionvault.com/zimbabwe_inflation_021120091.

Lerner, Eugene M. 1955. “Money, Prices and Wages in the Confederacy, 1861–65.” *Journal of Political Economy* 62: 562–575.

Lucas, Robert E. 1996. “Nobel Lecture: Monetary Neutrality.” *Journal of Political Economy* 104, no. 4: 661–682.

Mackenzie, G. A., and P. Stella. 1996. “Quasi-Fiscal Operations of Public Financial Institutions.” *IMF Occasional Paper* No. 142. Washington, D.C.: International Monetary Fund.

Maier, Charles S. 1978. “The Politics of Inflation in the Twentieth Century.” In *The Political Economy of Inflation*, eds. Fred Hirsch and John H. Goldthorpe. London: Martin Robertson.

The Mail and Guardian (S. Africa). 2006. “Report: Zim to Discuss $2bn Loan from China.” *The Zimbabwe Situation*. December 22. Available at http://www.zimbabwesituation.com/dec23_2006.html.

Makinen, Gail E. 1986. “The Greek Hyperinflation and Stabilization of 1943–1946.” *Journal of Economic History* 46, no. 3: 795–805.

Makinen, Gail E., and G. Thomas Woodward. 1989. “The Taiwanese Hyperinflation and Stabilization of 1945–1952.” *Journal of Money, Credit and Banking* 21, no. 1: 90–106.

Mises, Ludwig von. 1932. “The Great German Inflation.” *Economica* 36: 227–234.

——. 1996. *Human Action*, 4th ed. San Francisco, Calif.: Fox and Wilkes.

Muñoz, Sonia. 2007. “Central Bank Quasi-Fiscal Losses and High Inflation in Zimbabwe: A Note.” *IMF Working Paper WP/07/98*. International Monetary Fund, African Department, April.

Nordhaus, William D. 1973. “The Effect of Inflation on the Distribution of Economic Welfare.” *Journal of Money, Credit and Banking* 5, no. 1: 465–504.

Raftopoulos, Brian. “The Crisis in Zimbabwe, 1998 - 2008.” In *Becoming Zimbabwe*, edited by Brian Raftopoulos and Alois Mlambo. Jacana Media, 2009.

Reserve Bank of Zimbabwe. 2006a. *Monetary Policy, Second Quarter 2006*. Harare: Reserve Bank of Zimbabwe.

——. 2006b. “Weekly Economic Highlights: Week Ending 29 September 2006.” Harare: Reserve Bank of Zimbabwe, 29 September 2006.

——. 2007a. “Weekly Economic Highlights: Week Ending 23 February 2007.” Reserve Bank of Zimbabwe, February 23.

——. 2007b. *Monetary Policy, First Quarter 2007*. Harare: Reserve Bank of Zimbabwe.

Robertson, J. 2007. “Exchange Rate Instability: Scarcity-Driven Movements Affecting Business Viability.” Available at http://www.economics.co.zw/.

Robinson, P. 2006. “Zimbabwe’s Hyperinflation: The House is on Fire—But Does the Government Know That It Is Dousing the Flames with Petrol?” *Friedrich-Ebert-Stiftung*. Available at http://library.fes.de/pdf-files/iez/03894.pdf.

Rothbard, Murray. 1994. *The Case against the Fed*. Auburn, Ala.: Ludwig von Mises Institute.

Sachs, Jeffrey. 1987. "The Bolivian Hyperinflation and Stabilization." *American Economic Review (Papers and Proceedings)* 77: 279–283.

Sargent, Thomas J. 1982. "The Ends of Four Big Inflations." In *Inflation: Causes and Effects*, ed. R. H. Hall. Chicago: University of Chicago Press.

Siklos, P.L. 2000. *Inflation and Hyperinflation*. Waterloo, Ontario: Wilfrid Laurier University.

Tibaijuka, Anna Kajamula. 2005. "Report of the Fact-Finding Mission to Zimbabwe to Assess the Scope and Impact of Operation Murambatsvina by the UN Special Envoy on Human Settlements Issues in Zimbabwe." July 18. Available at http://www.un.org/News/dh/infocus/zimbabwe/zimbabwe_rpt.pdf.

Reuters. 2007. *TIMELINE: Chronology of Zimbabwe's Economic Crisis*. September 19. Available at http://www.reuters.com/article/worldNews/idUSL1992587420070919?pageNumber=1&virtualBrandChannel=0.

White, Andrew Dickson. 1959. *Fiat Money Inflation in France (1876—revised)*. New York: Foundation for Economic Education.

Wines, Michael. 2007. "As Inflation Soars, Zimbabwe Economy Plunges." *The New York Times*. February 7. Available at http://query.nytimes.com/gst/fullpage.html?res=990DE1DB103FF934A35751C0A9619C8B63&sec=health&spon=&pagewanted=2.