Zimbabwe's Black Market for Foreign Exchange

Albert Makochekanwa
University of Pretoria
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Department of Economics
University of Pretoria
0002, Pretoria
South Africa
Tel: +27 12 420 2413
Fax: +27 12 362 5207

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Author   : **Albert Makochekanwa**
                          Email: almac772002@yahoo.co.uk.

Author Affiliation   : Department of Economics, University of Pretoria, South Africa

Abstract

This paper looks into the changes of the black market premium for foreign exchange in Zimbabwe. Generally, the black market for foreign exchange arises as a direct consequence of the adoption of exchange rate controls in many developing economies facing substantial macroeconomic imbalances. Despite its negative impact on Zimbabwe's economy, this market has not, so far, attracted the attention of researchers. The research attempts to describe the functioning of the black market and find out the determinants of the parallel premium based on a stock-flow model as well as to investigate whether inflation Granger causes the parallel exchange rate. Estimated results reveal that the determinants of the black market premium are international foreign reserves, real exchange rate, lagged values of the black market premium, expected rate of devaluation, money supply and inflation. On the other hand, inflation and black market are found to Granger-cause each other during the period under consideration.

1   Introduction

The causes, effects and policy implications of black market in foreign exchange, in both developed and developing countries have attracted attention in recent years as the expansion of this economy has been found to have adverse effects on the official economy[1]. These effects are of particular concern to policy makers in developing economies, who are confronted with growing informal employment, parallel markets in goods and financial assets, specifically in foreign exchange, and capital flight (Degefa, 2001).

Although some studies (Lindauer, 1989) distinguish between the two terms, "parallel market" and "black market" in foreign exchange, this study will use the two terms interchangeably or synonymously. Robert Grosse (1991) pointed out that black markets in foreign currency have emerged in most countries since time immemorial mainly as a result of government controls on access to foreign exchange. These controls are initiated by an over-valued currency and in most cases these controls precipitates the foreign currency shortage leading to the development of foreign exchange black market. That is, a country with an over-valued currency (in most instances) fails to meet the demand for foreign exchange with sufficient supply. As a result, it rations the scarce available foreign currency and imposes controls on imports and exports, as well as on capital account transactions.

Basically, the controls are imposed to try and protect government's limited stock of foreign currency reserves. The need for this protection is in turn, stimulated by trade deficits and/or capital flight which result in net demand for foreign exchange at the central bank. It logically follows that once the government imposes restrictions and limitations on the holding foreign exchange or on transferring it overseas, demand for alternative sources for that currency emerge. Thus, government's inability to meet the demand for foreign currency and its interference in the operation of the market has a propensity to fuel the creation of parallel market for foreign exchange.

In most cases, as part of the controls, exporters are required to surrender their export proceeds (partly or wholly) to the government within a specified period of time after which appropriation is instituted. On the other hand, importers are required to acquire import licenses that are granted to individuals by selected government officials. An import license provides a better chance[2] for the bearer to access foreign currency at the cheap official rate. At the same time, capital account transactions are restricted to a few transactions carried out selectively through a limited number of officially authorized channels. These restrictions have however transformed normal economic transactions into privileges, creating economic rents that have benefited both the government officials who implement the policies and the few economic agents who enjoy the privileges (Nkurunzinza, 2002).

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[1] The black market in foreign exchange is variously referred to as the "underground", "parallel", "grey", "street", "unofficial", "curb", "fragmented", "segmented" or "informal" economy/market.
[2] The ability of the importer to get the foreign currency at the official market will depend on its availability.

According to Dordunno (1994) development of parallel market for foreign exchange with a high premium indicates a basic disequilibrium both in the foreign exchange market and trade regimes and, as a result, involves substantial social and economic costs[3]. The growth of foreign exchange parallel market causes the government to lose control over foreign exchange as more and more of the official transactions are diverted to the parallel market. At the same time, black market premium for foreign exchange functions as an implicit tax on exports, serving at once as a disincentive to export production and a source of hidden fiscal revenues (Pinto, 1988). To this end Elbadawi (1994: 488) pointed out that:

> *"...the parallel premium is an important relative price influencing key macroeconomic variables. Furthermore, the parallel market premium acquires importance not only from this direct linkage, but also as an important indicator of inconsistency between macroeconomic policy and the foreign trade and exchange rate regimes; this signaling role is likely to feed back into macroeconomic outcomes by influencing government policy and private sector expectations of such policy (e.g. expectations of devaluation). In addition to the often-cited efficiency costs associated with the dual regime, a high and persistent parallel market premium can substantially undermine the allocational role of the real exchange rate in the economy by exposing the credibility problem of macroeconomic policy".*

Following these forward and backward linkages of the black market premium to macroeconomic variables, Elbadawi (1994) arrived at the following conclusion:

> *"... a rising premium is shown to have negative impacts on official exports and foreign trade taxes, as well as a positive effect on capital flight. Therefore, a rising premium and expanding black market could have serious fiscal and commercial policy implications by squeezing the tax base in foreign trade transactions and by expanding the opportunities for large scale rent seeking activities. A high premium also aggravates the debt problem and the foreign exchange constraint through its effects on capital flight and the recorded current account balance. ... Controlling inflation could become more difficult under high premium regimes (p.508)"*

The negative effects of the parallel exchange rate were also echoed by Kiguel and O'Connel (1995) when they said the parallel exchange rate feeds back into the economy through illegal trade and prices. They went on further to suggest that large premiums have detrimental effects on official exports and hence on growth while providing only limited insulation from external shocks. World Bank (1994) indicates that a 10%

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[3] The parallel premium for foreign exchange is the percentage by which the parallel exchange rate exceeds the official exchange rate, i.e., $Z = [(P_E/O_E) – 1]*100$, where Z, Pe and Oe, respectively, stand for parallel premium, parallel exchange rate and nominal official exchange rate. Following the division of Ghei and Kiguel (1992), a country is said to have high parallel premium when the spread between the official and the parallel exchange rates is above 35%, moderate premium when it is between 10% and 35%, and low premium when it is below 10%.

premium is likely to reduce GDP growth by 0.4 percentage points a year, while the impact wanes as the premium goes up and a 100% premium cuts GDP growth by 2 percentage points a year, a high parallel premium for foreign exchange nevertheless has an adverse impact on economic growth.

Although the general behaviour of the parallel foreign exchange market is similar within developing economies, there are differences among countries regarding the relationship between the size of the parallel market for foreign exchange and the macroeconomic variables. According to Ghei and Kiguel (1992), the relationship between the black market premium and the fundamental factors that affect it are expected to be clearer in high premium countries than in low and moderate premium countries. Besides, they argue that high premium countries are also subject to macroeconomic imbalances.

Although foreign currency shortages have been a perennial economic problem for Zimbabwe since independence, the severity of the problem first came to light in 1987, before subsiding and reappearing again since 1993. Nevertheless, the black market premium was very small for the greater part of the 1990s, only to start increasing towards the end of 1999. By 2002, the country's black market activities had grown in depth and breath to such an extent that the black market premium reached its highest percentage figure of 2898 in December 2002 and January 2003. Though the parallel market premium drastically declined in 2004 (when it had a monthly average premium of above 100 percent), it has however been on a rising trend again since 2005 to date. Figure 1 depicts the black market premium for Zimbabwe since 1975. Overall, the country has been living with very high black market premiums for more than 7 years, that is, since the year 2000.

Figure 1: Zimbabwe's USD black market percentage premium

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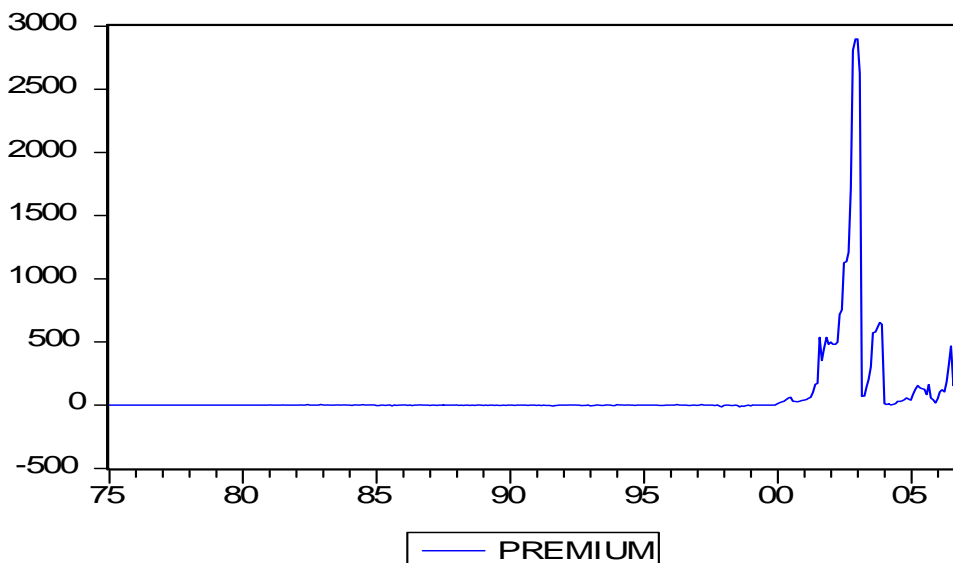
In view of the forgoing, the principal objectives of this study are:

i. To identify the determinants of the spread between the black market and the official exchange rates in Zimbabwe by adapting the stock-flow model.
ii. To examine whether inflation causes the black market exchange rate or vice versa, using Granger causality test.

In an attempt to overcome the impact of an active parallel foreign exchange market on economic growth and in order to finally unify the official and the parallel exchange rates, many sub-Saharan African countries have been trying to reduce the parallel premium through devaluation and the adoption of auction exchange rate systems. Similarly, Zimbabwe since independence has been implementing a foreign exchange liberalization through devaluations. For instance, the Zimbabwean dollar (ZWD) was devalued against the United States of America dollar (USD/US$) by 16.5% (Dec 1982), 5% (between Jan – June 1983), 17% (July 1994) and 60% (1 Aug 2006), to mention a few examples. The government's objective of integrating the 'illegal' black market for foreign exchange into the formal economy resulted in massive liberalization of the financial sector during the Economic Structural Adjustment Programme (ESAP) which was implemented between 1991 and 1995, which saw a devaluation of the local currency in July 1994. Also the establishment of the auction system (which has been mainly financed by the inflow of exports proceeds) in January 2004, was intended to achieve this same objective. Irrespective of these policy attempts, the black market for foreign currency persists and has even permeated almost all sectors of the economy, from the informal to the very government departments.

Despite the massive existence of this anomalous black market for foreign currency in Zimbabwe, no study has been done to characterize this market. This study is thus the first of its kind. As such, it contributes to literature which focuses on the dynamics of black markets for foreign exchange in developing countries using Zimbabwe's experience.

The presentation of this study takes the following form: The first section is introductory. The second part deals with the general background to the country's black market for foreign exchange, determinants and macroeconomic performance. Section 3 details the econometric model used to determine the determinants of the black market activities with section 4 presetting the simulated results. The last section is devoted to conclusion and policy recommendations.

2.   General Background

2.1   Zimbabwe's Exchange Rate Policy Since 1980

2.1.1   Pre-Independence Exchange Rate Policy

Prior to independence in 1980, Zimbabwe operated a dual exchange rate system, a system which had been put in place in 1979, with the Zimbabwe dollar fixed to the South African rand, and to a trade weighted basket of fourteen currencies which included the

US dollar, the British pound among others. This dual exchange rate system was however abandoned in March, 1980. The main reason behind the abandonment of this system was the fact that it had become unsustainable because of the realization that, although South Africa continued to be the country's major trading partner, removal of trade sanctions at independence implied that Zimbabwe, in its exchange rate policy had to consider other new trading partners.

2.1.2   Exchange Rate Policy between 1982 and 1990

For the period between 1982 and 1990, the Zimbabwe dollar was pegged to a trade weighted basket of fourteen currencies (including South African rand, British pound , US dollar, the Germany Deutschemark, the Japanese yen and the Botswana pula), taking into account the inflation differentials between Zimbabwe and her major trading partners. The weight of each individual currency in the basket was determined by the total volume of trade (excluding gold and fuel) between Zimbabwe and the individual trading partner countries.

A number of challenges were however encountered as a result of the above exchange rate system and these challenges include:

1. The exchange rate did not fully reflect the scarcity of foreign exchange in the economy mainly because of the fact that this exchange rate policy operated in an environment of an administered foreign exchange allocation.
2. Since the policy was operating within a restrictive environment, the Zimbabwean dollar was not convertible for current account transactions.
3. deliberate adjustments to the exchange rate to accommodate the inflation differential as in December, 1982, September, 1991 and January 1994 were effected in a short time period, not enough to allow the corporate sector to effectively plan for such changes.

In short this administered exchange rate policy could not fully reflect the scarcity of foreign currency and could not reduce the scale of the parallel foreign exchange market, thus necessitating a need to liberalize the economy towards a market based environment.

2.1.3   Exchange Rate Policy during 1991 to 1993

The period between 1991 and 1993 saw the introduction of less restrictive exchange control environment in order to improve allocative efficiency in the foreign exchange market. Reform measures supportive of a move towards a market based exchange rate regime were implemented such as the Export Retention Scheme (ERS) which was aimed at approximating the market value of the Zimbabwean dollar. This scheme had however its disadvantages. Firstly its market was thin and segmented as it was restricted to exporters of goods and services (Holders of capital funds could not participate on the market). Secondly, the use of the Export Retention Scheme market exchange rate and the

rate quoted by the RBZ implied use of the multiple currencies which in essence was distortionary.

2.1.4   January to June 1994 Exchange Rate Policy

Beginning January 1994, the ERS market was widened so as to allow the market determination of the exchange rate on the local interbank market. In this regard, Corporate Foreign Currency Accounts (FCAs) were introduced and the retention of foreign currency in FCAs was raised to 60%. This effectively introduced a two tier exchange rate system – one quoted by the RBZ and the other one determined in the inter-bank market. The two tier exchange rate regime was however only required for a transitional period since use of two rates was bound to cause distortions. To avoid distortions in the economy and move towards a market determined exchange rate, it was imperative that these two exchange rates be unified with most restrictions on current account transactions removed and therefore, making the Zimbabwe dollar more convertible for such transactions. The convergence of the two-tier exchange rate system was formally achieved on July 2, 1994. Unification implied that the RBZ had to stop quoting its exchange rates and that all foreign transaction would be conducted on the basis of the market determined exchange rates.

2.1.4   Managed Float Exchange Rate Regime July 1994 –March 1999

Adverse balance of payments developments in 1997, particularly from the last quarter, combined with rising domestic inflation, exerted immense pressure on the exchange rate. As market confidence declined, speculative behavior about probable currency depreciations intensified. This led to prepayment of lines of credit, hoarding of foreign exchange and further attacks on the Zimbabwe dollar. These developments intensified from October 1997, as evidenced by significant build up of foreign exchange balances of companies at banks. Finally the currency collapsed on 14 November 1997, depreciating sharply by 31.4%% from Z$13.7/US$ on 13 November to Z$18/US$.

2.1.5   Informal Arrangement with Banks March 1999- August 2000

The Reserve Bank of Zimbabwe, in consultation with the Bankers Association, agreed on an informal arrangement which stabilized the exchange rate at Z$38/US$, in March 1999. The relative stability was also a result of declining import demand due to tariff adjustments, improved operational efficiency of the inter-bank foreign exchange market and a tight monetary policy.

Nevertheless the arrangement to stabilize the exchange rate at Z$38/US$ showed some shortcomings from mid 1999 due to:

- Continued poor export performance;
- Expected international BOP support which did not materialize;

- High domestic inflation which reached 70.4% in October 1999 at a time when major partners' inflation was averaging 7%.

During the first half of 2000, the foreign currency situation deteriorated further and this led to:
- Development of a parallel market, accounting for a greater part of foreign exchange transactions.
- Significant build up in foreign payment arrears, from US$109 million in December 1999 to US$424.7 million by end of July 2000. This resulted in the suspension of BOP support to Zimbabwe and compounded the foreign currency situation.

In light of the above factors, maintenance of the exchange rate at Z$38/US$ became unsustainable.

2.1.6 Fixed exchange rate – 1 August 2000-19 February 2003

The exchange rate, which was pegged at Z$38 against the US dollar, for over twelve months was adjusted to Z$50 in August 2000, against the US dollar (and was later adjusted to Z$55 in 2001). This was under the new exchange rate policy which linked exchange rate adjustments to changes in inflation differentials between Zimbabwe and its major trading partners.

This exchange rate policy was introduced against the background of the following factors:

- A break down of the informal arrangement between the Reserve Bank and Authorized Dealers to peg the exchange rate at Z$38 to the US dollar.
- Closure of several gold mines, as a result of a combination of rising production costs and declining revenues (all gold miners are suppose to sale the gold to RBZ, whose price offer is sometimes below competitive rates).
- Escalating foreign payment arrears; and
- Rising domestic inflation.

2.1.7 Export Support Rate 19 February 2003 – 12 January 2004

An Export Support Rate of Z$800 per US dollar was introduced in February 2003 in order restore exporter viability and increase the capacity of the key sectors of the economy to generate foreign exchange. Government undertook to review the exchange rate on a quarterly basis in line with macroeconomic developments in the country and purchasing power parity with the country's major trading partners. Although after the introduction of the export support scheme, monthly foreign exchange inflows improved, nevertheless, the capacity of exporters to fully benefit from the export support rate was undermined by high inflationary environment coupled with constraints on production.

2.1.7   Foreign Exchange Auction System- 12 January to 24 October 2005

The Foreign Currency Auction System commenced on the 12th of January 2004 and the system involved the auctioning of foreign exchange through a Currency Exchange – an independent body supervised by the Reserve Bank.   Nevertheless, the system was abandoned in October 2005 because it failed to achieve its intended objective of enhancing export viability.

2.1.8   Tradable Foreign Currency Balances System 24 October 2005 –

The Tradable Foreign Currency Balances System which was implemented since October 2005 places more emphasis on market forces. Under this system, exporters and other users of foreign exchange sold foreign exchange in the inter-bank market at a market determined exchange rates. On the demand side, importers and other users of foreign exchange, bought foreign exchange from the inter bank at a market determined exchange rate. Thus under this regime, the country continued to operate a two tier exchange rate system with the inter-bank and the official exchange rate.

2.2   Origins of Zimbabwe's black market for foreign exchange

Literature on parallel market for foreign currency in Zimbabwe is scant, so it is difficult to know exactly how this market started and evolved over time. It seems clear, however, that the dynamics in Zimbabwe's black market for foreign exchange have followed a number of factors including political events, movements in international markets, government policy and other institutional factors. There are indications that the parallel market can be traced back to 1965, if not earlier than that. During the Unilateral Declaration of Independence (UDI) (1965 through to 1980), the country was placed under United Nations sanctions which meant limited foreign currency inflow into the country, resulting in foreign currency shortages then. Nevertheless, available data on exchange rates shows that, although the parallel market was present as far as January 1975, the divergence between the official and black market rates only become important the first 10 months of 1987, before the two rates became more or less the same till end of 1992.

The premium however picked again at the start of 1993 until today. Although, the premium was averaging less than 1 percent between January 1993 and December 1999, the divergence between the official and parallel rates has since widened beginning 2000. In January 2000, the black market premium was 11.39 percent, reached its highest percentage figure of 2898.05 in the two months of December 2002 and January 2003. Tracing the history of the black market for foreign currency in Zimbabwe, at independence in 1980 the word 'black market for foreign exchange' was a vocabulary to the majority and a term whose meaning was the prerogative of the few enlightened and economists. However by 2000, the word became the talk of the urbanites and as of March 2007, the term 'black/parallel market' has become an ubiquitous word that even the grade

one pupil and the very uneducated rural grand-grand parent can easily define and interpret it in terms of its effects on their day to day living.

History of the ZWD indicates that the old Zimbabwean dollar replaced the Rhodesian dollar at par, which in turn had been adopted in 1970 as a decimalization replacement of the Rhodesian pound at a rate of 2 Rhodesian dollars to 1 Rhodesian pound (R$ 0.71 = US$ 1.00). At the time of independence in 1980, one Zimbabwean dollar was still worth more than the US dollar (ZWD 0.68 = USD 1.00), but the currency's value has eroded rapidly over the years. On 26 July 2006 the parallel market value of the Zimbabwean dollar fell to one million to the British pound. The Zimbabwean dollar was redenominated on 1 August 2006 at the rate of 1 revalued dollar = 1000 old dollars. Also on 1 August 2006 the Government of Zimbabwe devalued the Zimbabwean dollar by 60% versus the US dollar (see exchange rate history Table 1), from 101,000 old dollars (101 revalued) to 250 revalued dollars (Wikipedia). Table 1 provides a condensed historical value of one US dollar in Zimbabwean dollars[4], with Table A1 of the Appendix providing more information on the Zimbabwean dollar's devaluation and the reasons for devaluation since 1980.

Table 1: Historical Value of one USD in Zimbabwean dollars

Date	Official Rate	Black /Parallel/ Free Rate	Premium %
1975	R$0.54	R$0.54	0
1978	R$0.6788 (Apr)	R0.6788	0
1978 (Apr)	Note 1	R$ pegged to US$	
1980	R$0.6595 (Mar)	R$0.6581	-0.22
1980 (Mar)	Note 2	R$ tied to basket of FFR, DEM, ZAR, CHF, GBP, USD	
1980 (Apr)	Note 3	Independence (1Z$ = 1R$)	
1982	0.7211 (Jan) to 0.8708 (Dec)	0.7244 (Jan) to 0.9195 (Dec)	0.46 (Jan) to 5.6 (Dec)
1982	Note 4	ZWD devalued by 16,5%	
1983	0.94 (Jan)	0.96 (Jan)	2.2
1983 (Jan – June)	Note 5	ZWD devalued by 5%	
1983 (Aug – Dec)	Note 6	Flexible basket; dual rates; 20% tax on outgoing payments	
1994	Note 7	Floating official rate (Jul 1); dual rates; ZWD devalued by 17%	
1994 (Jul 2) to 1999 (Mar)	Note 8	Floating official rate, dual rates; rates unified 1998 (Dec)	
1995	8.3752 (Jan)	8.3470 (Jan)	-0.3368
1997	10.5 (Jan)	12.00 (Jan); 25.00 (Nov)	1.35 (Oct)

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[4] The country has over the years instituted other targeted supporting exchange rates, for instance there might be a separate ZWD: USD exchange rates for gold sales, tobacco sales, government transactions, fuels imports as well as the official and black market rates. Thus, sometimes, there will be at least six ZWD to USD exchange rates fully operating in the economy.

1998	37.25 (Dec)	37.15 (Dec) Unified	-0.28
1999	37.25 (Feb)	37.15 (Feb)	-0.28
1999	Note 9	On 1999 March 31, the Official Exchange Rate was pegged at ZWD 38 per USD; By 1999 (Dec) the parallel market had re-emerged	
2000	38 (Jan)	56 to 62 (Jul); 65 to 70 (Aug) In Aug 2000, the Official Exchange Rate was pegged at ZWD 50, then ZWD 51 and finally at ZWD 55 per USD.	11.39 (Jan) 61.6 (Jul) 36.25 (Dec)
2000	Note 10	In November foreign exchange bereaux were closed	
2001	55	77 (Jan); 145 (Jun); 350 (Nov); 320 (Dec)	39.8 (Jan); 163 (Jun); 536 (Aug); 481 (Dec)
2001	Note 11	In June, the official became a crawling peg rate	
2002	55	330 (Jan); 470 (Jun); 1650 (Dec)	500 (Jan); 1126 (Jul); 2080 (Nov); 2898 (Dec)
2002	Note 12	In 2002 the parallel black market for foreign exchange mushroomed	
2003	Note 13	In February 2003, the official exchange rate was re-pegged at ZWD 824 per USD	
2003	55 (Jan); 824 (Mar)	1,650 (Jan); 2,500 (Jun); 6,100 (Dec)	2898 (Jan); 70 (Mar); 574 (Jul); 640 (Dec)
2004	824 (Jan 1); 4196 (Jan 12) to 5730 (Dec)	3,950 (Jan) to 8,400 (Dec)	12.3 (Jan); 1.5 (Apr); 47 (De)
2004	Note 14	In January 2004, semi-weekly RBZ-controlled) currency auctions were set up to determine the official rate	
2005	5957 (Jan); 17700 (Jul); 84588 (Dec)	8,250 (Jan); 40,000 (Jul); 100,000 (Dec)	38.5 (Jan); 126 (Jul); 162 (Sep); 18 (Dec)
2005	Note 15	In November 2005, the regular currency auctions were discontinued and the RBZ announced that "market factors" would control the exchange rate	

2006	99,202 (Jan); 100,195 (Jul)	150,000 (Jan); 575,000 (Jul)	51 (Jan); 468 (Jul)
2006 (Jan)	Note 16	Economists predict an unofficial rate of nearly ZWD 250,000 to the US dollar by mid-2006.	
2006 (01.25)	Note 17	RBZ caps daily variance of official exchange rate based on volume traded. The ZWD is able to fluctuate (from its average rate) in a daily band of: 0 % (under USD 5 million); 1 % (USD 5 to 10 million); 1.5 % (USD 10 to 15 million); or 2 % (exceeds USD 15 million). This effectively froze the official exchange rate.	
2006 (08.01)	Note 18	RBZ revalues the Zim dollar. 1,000 Old Zim dollars become 1 revalued Zim dollar. The official exchange rate is set to 250 revalued Zim dollars per 1 US dollar. (Parallel rate soars to over 600 revalued dollars per 1 US dollar)	
2006	250 (000) (Aug 01) 250 revalued (Aug 24)	550(000) (Aug 01); 650(000) (Aug 03); 650 to 700 revalued (Aug 24); 700 to 800 revalued (Sep 08 - high volume transactions); 850 revalued (Sep 14); 1,200 to 1,300 revalued (Sep 28) or 1,500 revalued (Sep 28 - high volume transactions); 1,500 revalued(Oct 11; 1,700 revalued(Nov 5); 2,000 revalued (Nov 18); 2,400 revalued (Nov 29); 3,000 revalued (Dec. 24).	154 (Aug); 350 (Sep); 940 (Dec)
2007	250 (Jan 1)	3,000 (Jan 1); 3,200 (Jan 11); 3,500 (Jan 18); 4,000 (Jan 20); 4,200 (Jan 22); 6,000 (Jan 26); 4,800 (Feb 2), 17,500 (Mar 16)	

Sources: Wikipedia and Own Compilation

2.3   Structure of Zimbabwe's Foreign Exchange Black Market

The parallel foreign exchange market, which is usually created in response to foreign exchange scarcity in the formal economy, is common in most developing countries. If the supply of foreign exchange in the official market is insufficient to satisfy the demand for it at the official exchange rate, excess demand for foreign currency is created in this

market. If the concerned body of the government does not react to this excess demand, it will result in the emergence of the black market for foreign exchange.

In order to deal with foreign exchange shortages, governments of developing countries often prefer foreign exchange controls to devaluations or tighter macroeconomic policies in their endeavour to preserve international reserves. Extensive controls on foreign exchange limit the accessibility of foreign exchange on the official market, forcing would-be buyers to search for an alternative market source. This leads to the emergence of an illegal market for foreign exchange, which then grows and becomes macroeconomically important as the concerned authorities respond to deteriorating balance of payments by tightening and extending controls on foreign exchange to maintain an over-valued exchange rate (Degefa, 2001). Thus the black market exchange rate usually includes a premium that reflects pent-up excess demand pressures that foreign exchange restrictions are intended to contain. Jianping (1998) argued that it is the foreign exchange restrictions that lead to the emergence of the black market, whereas other administrative measures, such as import tariffs, import licenses, quotas, and so on, only exert some influence on this exchange rate.

The operations of Zimbabwe's black market for foreign currency are scattered throughout the cities, towns and growth points located along (but not limited to) the country's major roads linking to neigbhouring countries, as well as border towns and tourist resort areas. Nevertheless, major cities such as the capital city, Harare and the second biggest city, Bulawayo house the largest share of these activities. For instance in Harare, there are five well-known areas, most of them given black market names (by black market participants) which are borrowed from notorious or famous international places and institutions. These places' names arranged in descending order of black market activities are: 'Roadport', a famous place in Harare which house the station for buses plying international destinations to such countries as South Africa, Zambia, Malawi; 'The Gulf' (named after the 1991's Iraq Gulf war); "Trade Centre" named after the famous International Trade Centre; 'East gate' and 'Ximex Mall'. All these places are less than 800 meters away from important national institutions such as the Reserve Bank of Zimbabwe (RBZ) and the country's top police station, Harare Central Police Station. Other black market centers are 'The World Bank', named after the World Bank, located in the country's second largest city, Bulawayo; the tourist resort of Victoria Falls, Beitbridge border post (border with South Africa which serve road users to and from Zimbabwe, Zambia, Democratic of Congo (DRC), and Malawi), to mention but a few.

Over and above these named places, black market activities for foreign currency have gone deeper such that some participants are now renting offices right in the centre of Harare to handle bulky sales and purchases (sales of above US$10 000). It is also argued that the parallel foreign exchange market activities in Zimbabwe have been important at various times in attracting the very government institutions, which ironically should be deadly ready to destroy it at any costs. This has resulted in Zimbabwean black market for foreign exchange structure, especially in the past few years developing into two levels, one a lower tier dealing with cash-to-cash transactions, usually involving small volumes

and unsophisticated dealers, and another higher tier involving the banking sector for huge transactions on behalf of the central bank, state enterprises and government. The following two quotations are testimonies to this two tier black market:

> *"It emerged yesterday that the parallel market had developed into two levels, one a lower tier dealing with cash-to-cash transactions, usually involving small volumes and unsophisticated dealers, and another a higher tier involving the banking sector for huge transactions on behalf of the central bank, state enterprises and government. Market sources said government was on Wednesday (14 March 2007) on the market looking for US\$1 million for unspecified commitments. At least two financial institutions had been given the mandate to scout for the foreign currency on a strapped market. "They are looking for US\$1 million in cash," a market source indicated. "We don't know why they want it in cash — maybe someone wants his money in cash because of the government's increased default risk"*(http://www.thezimbabweindependent.com/(Friday16 March 2007)

> *"The central bank has been buying from us for the past three weeks," an official with one exporting firm, speaking on condition of anonymity, told business digest. The report was yesterday confirmed by several parallel market dealers who said the market had been severely strapped for foreign cash because the central bank "was after all the foreign currency in the economy". "They are now driving rates on the parallel market," one dealer said*
> (http://www.zwnews.com/issuefull.cfm?ArticleID=16198 Friday 16/03/2007).

With regards to composition of the actual foreign currencies traded on the black market, the United States dollar (USD/US\$) account for more than 60 percent of all activities, followed by South African rand (ZAR) accounting for around 20 percent with British pound (GBP), Botswana pula (BWP) and European Union currency (Euro) accounting for the remainder 20 percent activities. The important of USD and ZAR in this market will be alluded to latter.

2.4 Parallel Black Market Exchange Rate Determinants

Peeping through the curtains of history, black markets in foreign exchange in many countries have arisen in response to government controls on access to foreign exchange. In most cases controls are imposed to try to protect government's limited stock of foreign exchange reserves. The need for this protection, in turn, is caused by trade deficits and/or capital flight that result in net demand for foreign exchange at the central bank. Once government imposes the limitation on holding foreign exchange, or on transferring it overseas, demand for alternative source of that currency arises (Grosse, 1991).

Although literature sites innumerable dimensions through which one can analyse the causes and determinants of parallel markets, Degefe (1994) grouped these factors into

three broad categories. He pointed out that the current account transactions, currency substitution and capital flight motives of the demand for foreign exchange by the private sector are the three broad causes of the black market for foreign exchange. On the other hand, Grosse (1991) classified his determinants into two broad categories: monetary and the existence of underground economy. According to the latter author, the monetary vicious circle is initiated by 'excessive rate of monetary growth' which lead to higher inflation in the domestic economy relative to trading partners. This will result in increased demand for foreign currencies by citizens to buy relatively cheaper foreign goods and   to hold wealth in more stable currencies. At the same time investors' confidence in economic prospects of the country becomes weaker, prompting them to consider and transfer their investments to other countries (and therefore other currencies), creating excess demand for foreign currency and contributes to the capital flight.

Grosse (1991) further argued that even in the absence of monetary factors explained above, a country may still find that goods produced locally are perceived as inferior in quality to similar goods produced abroad; and thus demand arises for foreign exchange to buy those high-quality foreign products. A second variety of reasons for development of black markets according to the same author (Grosse, 1991) is the existence of an underground economy in the country. That is, when some participants engage in illegal business activities – such as sale of gold, sale of contraband products and drug trafficking – then a need arises for financial services that circumvent the legal financial system.

Nkurunziza (2002) delineated the analysis of the black market premium into three categories. Firstly, the "real trade" approach which emphasizes the fact that a parallel market serves mainly commercial purposes. Secondly, the monetary approach which focuses on monetary factors in explaining the parallel market. Lastly, the portfolio balance approach, also called currency substitution approach, which is based on the assumption that agents use the parallel market to alter the composition of their assets between domestic and foreign currency.

Although Zimbabwe's parallel market for foreign currency fit into the three authors' respective broad determinants (N.B. these authors' broad category determinants overlap), Zimbabwe's parallel market dealings became hectic, as the intensifying political instability and macroeconomic instability pushed money out of the country following the controversial land reform since 1999; and most importantly the fact that the country been increasingly isolated from the international community. For instance, Zimbabwe withdrew from the British Commonwealth in 2003 and this has resulted in both the World Bank and IMF suspending all programs of assistance. The section below classifies the sources and determinants of Zimbabwe's foreign currency black markets in detail by broadly dichotomizing them into demand and supply sides.

2.4.1   Demand Side

The demand side of the Zimbabwean black market for foreign currency has (and continue to be) equally dominated by both private individuals, firms and public organizations.

i) Domestic residents going abroad

People, especially the young people in big cities such as Harare, Bulawayo to mention a few areas, want to go abroad to study and work. If they intend to study in the United States, for example, they need to pass the TOEFL test which has an application fee of above US$10. Those who want to go to UK and South Africa to study have to defray tuition payments in sums of thousands of British pounds and South African rands. Other individuals may be purchasing South African rands to go for medical treatment. Given the shortage of both drugs and medical specialists in Zimbabwean hospitals, acute medical problems are referred to South Africa. Since the government does not provide the needed foreign currency, they resort to the black market.

ii) Currency Substitution

The portfolio balance approach, also called currency substitution approach, argues that agents use the parallel market to alter the composition of their assets between domestic and foreign currency. This has been happening in Zimbabwe especially beginning 2000 as the economy has been hard hit by hyper inflation and macroeconomic instability. Black market activities have been exacerbated given that foreign currency has been used as an efficient hedge against inflation tax and domestic currency devaluations. Also expectation of inflation and negative real interest rates has lured people to switch Zimbabwean dollars to foreign currencies to preserve their wealth.

iii) Capital Flight

The hyper inflationary environment of the past 8 years, the macroeconomic instability and the uncertainty following the controversial land reform has resulted in capital flight. Although the country did put some policy measures as a means to curb the capital flight, most foreign investors have managed to transfer their investments to safe havens. Thus, demand from this section of the participants has also fueled the black market premium.

iii) Enterprises

Private and state enterprises resort to foreign exchange black market when they urgently need foreign exchange to import raw materials and equipment, since application for foreign exchange through official channels takes time, adds on extra procedure costs and at the end of the day (97 percent chances are that) one will not be successful in finding foreign currency through or from banks. Currently, most private enterprises whose production can not proceed without vital imports have 'individual suppliers' who supply them (the ones referred earlier as renting offices for the sake of black market 'businesses'). Other enterprises have engaged Zimbabweans in disapora who will be

intending to send foreign currency to Zimbabwe to buy assets such as houses, but who will not at all be willing to send the money through the formal bank channels. In such cases, the Zimbabwean private enterprise will clinch this deal by asking the diasporians to deposit the needed foreign currency (mostly US dollars) into the account of the Zimbabwean company's overseas raw material supplier; and in turn, the Zimbabwean company will deposit (upon the condition that the diasporian fax the deposit invoices and the foreign supplier acknowledging receipt of the amount to the Zimbabwean company) Zimbabwean dollars black market rate equivalent to the diasporian's Zimbabwean account or his/her nominee's account.

iv)   Financing of fiscal deficits and other international obligations

Another important factor contributing to the parallel foreign market activities over the recent years centers on the role of monetary policy in financing fiscal deficits and payments of international obligations. These deficits have been resulting from reduced tax revenue due to the shrink of the tax base as most companies have been folding in recent years; and increasing unemployment due to company closures, thus causing a dwindling in the corporate and income government taxes, respectively. The Zimbabwean government has been financing these deficits by means of money printing, which has in turn resulted in high inflation and low or negative real interest rates. The resultant hyperinflation has encouraged currency substitution among other wealth defensive measures, thus indirectly aggravating the black market activities.

Also in recent years, the country has used money printing as a panacea in resolving its international obligations. For instance, on 16 February 2006, the Reserve Bank of Zimbabwe announced that the government had printed ZWD 20.5 trillion in order to buy foreign currency to pay off IMF arrears (Wikipedia). The combinations of this monetary expansion behaviour have resulted in even higher premiums in the black market.

v)   Fuel sold illegally

One of the off-shoot of Zimbabwe's macroeconomic problem has been critical shortages of fuel, both in the public and private sectors. This has resulted in the emergency and mushrooming of black market for fuel (both petrol and diesel). Most sellers of this commodity (garages and individuals) have demanded payments in US dollars, arguing that they need USD in order for them to be able to order another supply. Most private enterprises and elite individuals have and are currently purchasing their fuel requirements from this market, fueling the demand for foreign currency on the black market.

2.4.2   Supply Side

Equally, the supply side of the country's black market activities constitutes private individuals, firms and public officials.

i) Domestic residents

This category includes interpreters, tourist guides, taxi drivers, and workers in hotels, tourist souvenir shops, and joint ventures. On the whole, this category does not have much of a share of the market.

ii) Remittances from emigrants coming/visiting back home

Zimbabweans from UK, USA, South Africa and Botswana making trips to Zimbabwe, are versed in the domestic situation, and will not convert their foreign exchange at the official rate, but on the black market. In fact prior to visiting Zimbabwe, they make consultations as to the prevailing black market rates of the respective currencies they will be having, and prices for various goods/assets. Thus, they even make their Zimbabwean budgets whilst still abroad using the black market rates.

iii) Remittances from overseas emigrants

This category provides a relatively large share of the foreign exchange for the black market. Remittances usually do not go through official channels. They are different ways that are used to avoid official regulations since the official exchange rate is lower. For instance, most overseas emigrants normally send whatever amounts to their relative through Western Money Union in Botswana. Given that Botswana's main cities (Francistown and Gaborone) are closer to Zimbabwe, that Botswana does not require travelers' visas (as South Africa do) and the fact that Botswana has monetary policy which allows payments in USD, this country has become one of the most popular route to receive remittances in this category. Besides Botswana, Zambia has also been used since it has similar advantageous conditions as Botswana. Whether one receives the money in US dollars, or British pounds or Botswana pula, it does not matter, as long as it is one of these strong foreign currencies.

iv) Companies that pay in US dollars

Companies (mostly non-governmental organizations – NGOs) that pay their employees in foreign currency (mostly US dollars) have been another source of foreign currency for the black market activities. Although some do not pay the employees directly in foreign currency in Zimbabwe, they have asked their employees to open Foreign Currency Accounts (FCAs) in which they deposit their salaries, and the employees in turn ask for travelers' cheques from their banks which they will go and en-cash either in Botswana or Zambia.

v) Cross border traders

The macroeconomic instability in the country has resulted in higher unemployment (estimated at 80 percent in 2005) which has in turn forced the majority of the labour force to engage themselves in informal trading. One of the flourishing informal sectors has been the cross-border trading, with major destinations being South Africa, Botswana, Malawi, Mozambique, Zambia, and recently, Dubai. After selling their weirs, these traders return home with various kinds of foreign currencies, which they will obviously change on the black market.

vi) Officials returning from foreign business trips

After attending foreign business trips, most Zimbabwean delegates return home with US dollars which they might have been given as 'travel and subsistence'. (In fact some Zimbabwean officials have of-late been described as non-spenders by their peer delegates from other countries). Once they return from foreign trips, they change their windfall at the black market. These officials include those in private and government departments.

vii) Zimbabwe Revenue Authority (ZIMRA) Officials

The higher import duties on some of the imported products have resulted in the emergence of contraband purchases or imports. To successfully avoid these high duties, most importers bribe Zimra officials in foreign currency. On the side of the officials, given the fact that their salaries are generally low, most of them will be ready to assist the importers to circumvent import duties, in return for a bribe. In fact, Zimra officials at border posts such as Beitbridge (one of the busiest border in Southern Africa which handles road travelers and cargoes from South Africa destined for Zimbabwe, Zambia, Malawi and DRC; and from these countries to South Africa), among others are well-known for bribery activities. Border posts such as Beitbridge, among others are well-know for this. The severity of the bribery activities at this border resulted in the department firing some employees (from this border) in 2005 as they were said to have assisted importers to avoid payment of duties in return for bribes.

viii) Border buyers

The beginning of the new millennium has also witnessed the development of permanent foreign currency individual buyers (whether for themselves or on behalf of other people). This is mostly witnessed at border posts such as Beitbridge. Although the government recently tried to curb the buying activities at this particular border in August 2006 by increasing soldiers and policemen at the post, there has been no real change. These security patrols have proved futile given that no extra incentive was provided amidst their low salaries and poor working conditions. To worsen the situation, some of the security patrols have joined the bandwagon by asking a 'fee' from buyers so as to allow them (buyers) to do their business freely. Thus a problem question of: who will guard the guard

has been the end result. After the buyers have accumulated the foreign currencies, they send them to Harare where there will fetch better return.

ix)   Foreigners and tourists

Given that most foreign visitors, whether on business or tourists know the acute shortage of foreign currency in Zimbabwe, against the background of higher retail shop prices (currently retailers price their products using black market foreign exchange rates), most of these foreigners change their foreign currency in the black markets. Moreover, some embassy personnel have "permanent-contact" relations with black market vendors and peddlers through whom their monthly salaries (when converted into Zimbabwean dollars (ZWD) using black market exchange rates) can be raised by 6900[5] per cent or more during the peak periods.

x)   Illegal Gold sales

Since the late 1990s, illegal gold panning has been on the increase. This activity, popularly known in local language as 'chikorokoza' and the people who participate in the actual panning as 'makorokoza', is when the panners mine gold and sale, in most cases to other middleman. Since the price offered by the RBZ or its gold buyer subsidiary company, Fidelity Printers & Refineries is at most of the time lower than what will be offered elsewhere, most middlemen opt to sale the gold to South Africa. Given that such merchandise sale is not allowed by law, this becomes an illegal sale. The middleman will however get a better price in foreign currency, rands or US dollars which they will in turn off-load on the parallel black market.

xi)   Informal Money Transfer Agents

These informal money transfer agencies have increased since 2001, after the closure of foreign exchange bereaux. Normally, they are formed by a group of Zimbabweans (maybe 2 to 5 people) in the diaspora especially in countries such as UK and South Africa, to mention two countries. The agent will have the contact person or 'subsidiary' in Zimbabwe, mainly in Harare. Since the owners of the agent in the diaspora knows the areas where Zimbabweans live the various places in their respective foreign countries, the agent will advertise its 'business' and ability to help Zimbabweans to send money back home. To send money, one has to deposit the foreign currency with the agent at an agreed exchange rate which will be slightly lower than the black market rate prevailing in Harare at the time of sending the money. Once foreign currency has been deposited, the depositor's relative in Zimbabwe will be asked to go and collect the equivalent ZWD at a specific place in Harare.

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[5] For instance, a person who earn US$100 as of March 16 2007 could have ZWD equivalent of ZWD25, 000 (=250*100) at the official exchange rate; and ZWD1, 750,000 (=17 500*100) at the black market rate. Thus percentage difference between the amount in ZWD becomes 6900 (= ((1750000 – 25000)/25000)*100).

2.5   An Overview of macroeconomic performance: 1980 – 2006

Between 1999 and 2006, the country has been (and continues to be) facing its worst and severe socio-economic difficulties ever since her independence from Britain in 1980. The national economy or economic production activities (GDP) have cumulatively contracted by as much as 40 percent during this period (Wikipedia), while the annual inflation rate is currently the highest in the world, reaching 1 216 percent as of December 2006. Thus, hardships have manifested themselves in rising inflation, erosion of real incomes, critical shortages of both foreign currency and local currency, acute shortages of food and fuel, decline in savings and investment, capacity under utilization, company closures and high unemployment rate (currently above 80%). Direct foreign investment has all but evaporated. Rapid development of informal and parallel markets for both goods and foreign exchange are entrenching a growing shadow economy, with rising incidences of corruption in both private and public sectors. Price controls have been imposed on a wide range of products including food (maize, bread, steak), fuel, medicines, soap, electrical appliances, yarn, window frames, building sand, agricultural machinery, fertilizers and school textbooks.

Although dealing with Zimbabwe's macroeconomic performance requires detailed presentation of the movement in all economic variables, only trends in those macroeconomic indicators that have close relationship with the parallel premium for foreign exchange will be briefly discussed in this section.

2.5.1   Real GDP

The economic growth path of independent Zimbabwe was relatively rose for nearly two decades. Although the economy did not grow consistently and exceptionally above annual average rates of 5 percent, almost for 17 years the country did registered positive economic growth rates between 1980 and 1998, except for the two years, 1984 and 1992, which recorded negative rates due to draughts. Since 1999, however, the economy made a u-turn in its growth trend and even up to today, negative growth rates year after year have been the norm. Although a number of explanations have been advanced to be the actual causes of these economic demise, to say that foreign currency shortage has been the sole causer will be a misrepresentation of facts. Factors such as the controversial land reform, which is assumed to have paralyzed the agriculture sector, especially the tobacco growing activities; the capital flight which followed after the land reform and the general political and macroeconomic uncertainties; and the massive company closures are some of the most important factors that have resulted in the 40 percent cumulative decline in the economy activities since 1999. The worse decline was in 2003 when GDP growth rate was negative 10.3 percent, while the rate declined to minus 5.1 percent by the end of 2006. Table 2 presents some of the country's economic indicators.

Table 2: Average annual percentage growth rate of macroeconomic indicators

Year / Variable	1980-85	1986-99	1990-95	1996-99	2000	2001	'02	'03	'04	'05	'06
GDP	6	4	2.3	3.8	-7.3	-2.7	-4.4	-10.4	-3.8	-6.5	-5.1
M2	0.75	6.75	2.98	-8.7	32.4	46.8	129.6	-40.3	-66	16.4	na
Gov Deficit	-2.4	10.2	3.6	-11	31	26	100	na	na	na	na
Inflation	13.5	11.8	25.9	32.6	55.6	73.4	133.2	365	350	237.8	1 216
M2/O_e	-20	0.12	-17	-33	14	18	130	-95	-95	-73	Na
RER	10.45	-0.46	4.68	14.3	-23	-28	-57	na	na	Na	na
Parallel Premium (actual)	0.94	-0.33	-0.67	-3.6	36	481	2898	640	47	18	940
IR	-2.5	-4.7	34.3	-6.1	-33	-63	10	Na	na	na	na
Grant	2.4	10.2	10.2	-17	31	26	96	Na	na	na	na
Mx	10.2	5.3	12.3	8.8	-17	-3.6	-0.77	na	na	na	na
Cur Acc % GDP	-5.8	0.7	-3.4	-2.8	0.4	-0.3	-0.6	-2.9	-8.3	0.5	-0.5

Sources: World Bank's WDI and IMF's IFS, RBZ, Zimbabwean Central Statistical Office

Note: RER = real exchange rate; IR = international Reserve; M2/Oe = real money balance; and Mx = Merchandise exports.

2.5.2 Fiscal Deficit, Money Supply and Price

In a developing country like Zimbabwe, fiscal deficit has important linkages with the balance of payments and the money supply process. Normally, when fiscal deficit is financed through discretionary bank borrowing or money printing (seigniorage), it usually results in increased money supply. On the other hand, an excessive resort to foreign borrowing leads to over-valued real official exchange rate, deteriorating current account deficit, higher external debt and declining foreign exchange reserves.

Government deficit for the period 1980 to 2006 was averaging about 59% of GDP per year. This signifies how serious the fiscal debt for the country has been (and continues to be). The rise in fiscal deficit during the first decade of independence is explained by the rapid increase in government expenditure relative to tax revenue, as the government was trying to address the inherited social imbalances from the previous regime. This saw massive infrastructure development in sectors such as health and education. The growth of the deficit between 1991 and 1995 can be attributed to such factors as the drought of 1992/3 among other factors. Although on average the debt growth declined between 1996 and 1999, the annual run away growths witnessed since 2000 to date can be attributed to government expenditures on such factors as the land reform, maintenance of Zimbabwean soldiers who were on 'peace keeping mission' in DRC, parliamentary and presidential elections (in 2000/2005 and 2002, respectively).

Although money supply (M2) has been increasing for the greater part of the period under consideration (1980 – 2006), the serious increases have been witnessed since 1997 until now. In 1997, the government's liberation war veterans grant appeasement was solemnly

met by money printing since the grant was not budgeted for. In the new millennium, the significant increases in money printing were mainly to cater for most of the government expenditures explained in the above paragraph. This monetary phenomenon is now even worse (at the time of writing) given that foreign money coming from doors have been totally shut and the country has been forced to use this option even for its international payment obligations. As evidenced in Table 2, one of the off-shoot offspring of this seigniorage spree has been the rampant inflation which has robed the country's purchasing power.

2.5.3   Foreign trade policy and its effects

Regulation of foreign trade has been a key feature of the Zimbabwean economy. During the Unilateral Declaration of Independence (UDI) between 1965 and 1980, the economy was placed under international sanctions and the regime implemented import-substituting industrialization (ISI). This resulted in a sophisticated import control system being built up. At independence in 1980, the country inherited a heavily controlled economy and government pursued an import substitution development strategy, which saw it imposing several controls on trade, foreign currency inflows, interest rates, price and exchange rates. This policy seemed crucial in redressing the social imbalances that had been created by the war of liberation and the policies were meant to cushion the majority of citizens from any potential increase in prices.

However, by the end of the first decade after independence (1980-1989) the Zimbabwean economy was already experiencing industrial inefficiency, low productivity, market distortion, increasing public sector spending and low rate of employment. Like many other developing countries, the country implemented a comprehensive trade liberalization programme in 1991, which was meant to reverse a long tradition of control in the economy. These reforms were referred to as the Economic Structural Adjustment Programme (ESAP). The programme contained most, if not all of the elements of the orthodox Washington Consensus[6] and trade liberalization has been the main area of action. Trade Liberalization was designed to be gradual and implemented over the 1991-1995 periods; however the implementation was very swift. Trade liberalization began with removal of selected input items from the quantitative import controls to Open General Import License (OGIL), which was introduced during the second half of 1990. These measures exerted great pressure on the balance of payment (BOP) and led the government to implement import demand management measures in 1991 which included raising the minimum import tariffs to 10% on all imported goods and an additional 10% on items on OGIL (Tekere, 2001). This clearly indicates that there were problems in

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[6] The **Washington Consensus** is a set of policies promulgated by many neoliberal economists as a formula for promoting economic growth in many parts of Latin America and other parts of the world by introducing various market-oriented economic reforms which are designed to make the target economy more like that of First World countries such as the United States. These policies includes: fiscal descipline, redirection of public exenditure, tax reform, interest rate liberalization, a comparative exchange rate, trade liberalization, liberalization of inflows of foreign direct investment, privatisation, deregulation and secure property rights.

timing and implementation of some of the key policies during the programme, leading to implementation of measures that were contrary to the trade liberalization spirit such as increasing tariffs.

With the phasing out of ESAP in 1995, the government was not eager to pursue economic reforms resulting in a 2-year gap between the implementation of Zimbabwe Programme for Economic and Social Transformation (ZIMPREST), and expiry of ESAP. Most policies were reversed mainly due to poor macroeconomic performance, deficiencies in trade policies and sequencing of liberalization, fiscal indiscipline, exchange rate mismanagement, monetary policy mix and incompetence of economic managers to understand the substances and process of trade liberalization.

In October 1998 government took a turnaround policy and increased tariffs on finished products with local substitutes or those considered as luxuries. In fact tariff duties on some imported products were increased to level much higher than those of the pre ESAP period. This was done in an effort to restore stability in the foreign market, curtail import pressure on the exchange rate as well as the need to generate revenue whilst at the same time protecting the local manufacturing industry. The rapid depreciation of the currency in 1999 was followed by the introduction of exchange controls which were meant to peg the local currency against major currencies .The government started to apply the main border taxes namely custom duties, import tax (which was essentially sales tax on imported goods) and a surcharge. Ever since 1998, the foreign trade policy of the country has seized to be predictable and policy reversals have been the norm.

2.5.4   Export sector performance

The country's principal exports are basically low value-added agricultural commodities and minerals products. These include unmanufactured tobacco, ferro-alloys, gold, nickel and ginned cotton. Horticultural produce and fresh-cut flower exports are growing rapidly. The tourism sector has, over the last few years, increasingly become an important earner of foreign currency. Manufactured exports cover all the industrial products. Zimbabwe's principal imports are chemicals, machinery and equipment, motor vehicles, manufactured goods and petroleum products.

Generally, the export sector performed relatively well for nearly two decades since independence (of course with the exception of some years like 1987 when they were negatively affected by foreign currency shortages for importation of raw materials). Nevertheless, the beginning of the new millennium saw a rapid decline in export performance. The same factors that have been attributed to declining in the GDP also contributed to the demise of this sector. The land reform and invasions are said to have displaced the commercial farmers who were the main producer of agricultural export products like tobacco, among other export crops. The tobacco export sector has been heavily affected to the extent that the country lost its world position of being the second tobacco supply after Brazil to a position outside the top five. Irrespective of this massive decline, the sub-sector has been and continues to be the highest foreign currency earner

for the economy. On the other hand the shortage of foreign currency to purchase vital production raw materials in recent years has also contributed to the demise of the overall export sector.

3 The Model

3.1 The premium model

A number of models have been applied by various authors to determine the black market premium for foreign exchange. This paper will adapt the Kiguel and O'Connel (1994)'s stock-flow model, although with some modifications[7]. The explicit specification of the model is:

$$LogZ = \beta_0 + \beta_1 RER + \beta_2 LogIR + \beta_3 LogInfl + \beta_4 LogZ (-1) + \beta_5 DEV + \beta_6 LogM2 + e_t ..(1)$$

$$B_3, \beta_4, \beta_5\ \beta_6 > 0;\ \beta1, \beta_2 < 0$$

where   Z   = black market premium for (US$) foreign exchange
         RER   = real exchange rate
         IR   = international reserves
         Infl   = inflation rate
         Z (-1) = lag parallel premium for (US$) foreign exchange
         DEV   = expected rate of devaluation
         M2   = money supply

Premium models predict that the black market exchange rate is positively correlated with inflation. Due to government finance conditions, the domestic money stock is endogenized for it plays an important role for the fiscal deficit. The strong link between fiscal deficit and money growth in Zimbabwe, especially since 1997 suggests that over-expansionary fiscal policy is often at the heart of foreign exchange parallel markets with high premiums. Thus high fiscal deficits produce rapid money growth, which results in high rates of inflation causing high parallel premium for foreign exchange. The real exchange rate affects the premium rate indirectly and is assumed to have negative effect.

In Zimbabwe, we expect the short-term determinant to be the expected rate of devaluation, in view of the discussions of the country's monetary history, especially the frequency of devaluations. This variable captures the dynamics in the black market better than the interest parity differential because the atomicity of foreign currency buyers in the

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[7] This model is modified in the sense that (a) international reserve is included as an explanatory variable and (b) the stock-flow model developed by Kiguel and O'Connel (1994) is stated as a partial adjustment model that has been found to have, among other things, multicollinearity, hetroscedasticity and serial correlation problems. So the static regression model will be considered in order to examine the nature of the relationship between the dependent variable and the regressors in both the long run and the short run, provided that there is cointegration.

parallel market, their motives and the amounts involved do not suggest the existence of important capital outflows fuelled by the differential between domestic and foreign interest rates. Expected devaluations should have a positive impact on the level of the premium.

The influence of international reserves is assumed to be negative. The link between the premium and international reserves shows that an increase in the level of international reserves reduces the demand for foreign exchange in the parallel market when the supply increases in the official market and thereby ends up in lowering the parallel premium. On the other hand, like the official exchange rate, the black market rate also follows a random walk. Nevertheless, previous black market rates have played an important role in determining the future black market rates and in the Zimbabwean situations, lagged values of the premium has thus been positively related to the current premium rates at any point in time.

3.2   Inflation and the black market exchange rate

The debate surrounding the relationship between inflation and black market for foreign exchange markets is broadly dichotomized into the neo-classical approach and the structuralist approach. The categorization of these two approaches is based on contemporary conflicting ideas about development issues in developing economies and the nature of their external sector crisis (Berge, 1995)

The neo-classicalist belief holds that inflation affects the parallel market for foreign exchange in two ways. First, it causes the fixed nominal exchange rate to become increasingly over-valued, which in turn leads to an expansion in the size of the parallel market. Second, by reducing real domestic interest rates, inflation induces capital flight. In this regard, inflation may cause the parallel exchange rate to rise (Degefa, 2001). The structuralist school of thought postulates that if the parallel exchange rate rises or the official exchange rate is devalued, the demand for money increases due to an increase in the domestic currency cost of foreign exchange, which leads to a rise domestic prices.

Therefore, the question of whether black market exchange rate (H) causes inflation (π) or vice versa in Zimbabwe is investigated empirically using pairwise Granger causality test. Through Granger causality tests, one can proceed to test for the direction of causality between the two series. Standard Granger (1986) causality test examines the role of past changes in inflation (π), in explaining the current variations in black market exchange rate (H). On the other hand, a reversed causality direction is determined by experimenting with variables π and H interchanged, using the following equations:

$$\pi_i = \sum_{i=1i} \alpha_i \Pi_{t-1} + \sum_{i=1} \beta_i H_{t-1} + U_t \dots\dots\dots\dots\dots\dots \text{(2a)}$$

$$H_t = \sum_{i=1} \beta_i H_{t-1} + \sum_{i=1} \alpha_i \Pi_{t-1} + V_t \dots\dots\dots\dots\dots\dots \text{(2b)}$$

to determine whether or not π_i do Granger cause H_i and vice versa, respectively. In terms of interpretation, H are said to be Granger-caused by π if inflation help in the prediction of H, or equivalently if the coefficient on the lagged inflation values are statistically significant. In our case, there are four possible causal relationships between inflation (π) and black market premium (H):

i.   Unidirectional causality from π to H;
ii.   Unidirectional causality from H to π;
iii. Bidirectional causality when π causes H and vice versa;
iv.   Independence when there is no causal relationship between π and H.

The results of the Granger causality test are presented in Table 5.

4   Empirical Analysis

4.1   Data definitions and sources

The study employed annual time series data covering 1980 through to 2005 to investigate the statistical significance of the variables that relate to the black marker premium for foreign exchange. The premium is as defined earlier. Data on official exchange rate are the annual averages from the International Financial Statistics (IFS) of the International Monetary Fund (IMF). Data on both the parallel and official exchange rates (for the US$) are collected from Reserve Bank of Zimbabwe (RBZ). RER is the real exchange rate, computed following Nkurunziza (2002:25) as $\frac{E}{P} * P^w$, where P represents Zimbabwe's domestic price level (CPI), and P^w is the world price level (US wholesale price index). The series are from IFS. Data on both international reserves (IR) and inflation were collected from IFS. DEV is the expected rate of depreciation, computed as $\frac{E^E_{t+1} - E_t}{E_t}$, where E is the official rate of exchange (ZWD per USD). M2 is money supply and the series is taken from the RBZ.

4.2   Methodology

The econometric analysis in this study is three-fold: test for stationarity of the series used in the econometric model; test of the existence of static long-run equilibrium relationship between black market premium and its determinants; and development of a parsimonious dynamic model of the short-run relationship between black market premium and its determinants, which could used as the basis for design and assessment of monetary policy.

4.2.1 Stationarity Tests

The drawback to using non-stationary economic series in the study would be that the presence of deterministic time trends in any of the two rates could lead one to misinterpret what is essentially a pro-cyclical movement of the series over time for a deeper relationship between them. Thus to avoid inappropriate model specification and to increase the confidence of the results, time series properties of the data are investigated. Although there are a number of methods used to test for stationarity and the presence of unit roots, the methods used here are the Augmented Dickey-Fuller (ADF) and the Philips Peron (PP) tests. By definition a series is stationary if it has a constant mean and a constant finite variance. A series X_t is said to be integrated of order d, denoted as $I(d)$, if it must be differenced d times for it to become stationary[8]. The ADF regression test can be written as:

$$\Delta\chi_t = \beta_0 + \lambda\chi_{t-1} + \beta_1 t + \sum_{t=2}^{p} \gamma_i\Delta\chi_{t-1} + \varepsilon_t \quad \text{……………….. (3)}$$

Where t is the time trend, p is the number of lags; ε_t is a stationary disturbance error term. The null hypothesis that x_t is non-stationary is rejected if λ_1 is significantly negative. The number of lags (n) of Δx_t is normally chosen to ensure that regression residual is approximately white noise. Table A2 in appendix provides unit root test results and the tests indicate that all the variables are stationary at first difference, that is they are $I(1)$ variables.

4.3 Estimation Results

The estimation of the long-run static equation presented in Table 3 reveal that real exchange rate, international reserves, inflation and lagged values of premium are all significant at least at 10 percent level of significant. The elasticity of black market premium with respect to international reserves, inflation and its lagged values are -0.38, 0.19 and 1.32, respectively. The long-run estimation indicates that the model fits the data well as evidenced by values of both R^2 and F-statistic tests which are above 94 percent. Thus, according to empirical tests in this study, the result shows that expansionary monetary policy in Zimbabwe (which is produced by high fiscal deficit) surface itself in higher inflationary trends, exerting an upward pressure on the black market premium. This result is in line with theory as well as with the general conclusion that over-expansionary fiscal deficit is often at the centre of black market with high premiums.

The fact that for Zimbabwe, previous black market rates have provided the basis for the prediction of future black market rates in an upward trend is reinforced by the positive correlation between the current and lagged black market premiums as shown in the results. On the other hand, the negative relationship between international reserves and black market premium is according to theoretical expectations.

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[8] Differenced series can be denoted by letter D or Δ symbol, i.e., differenced inflation series becomes D_inflation or Δinflation.

Table 3: OLS Estimation Results of Long-run Cointegrated Equilibrium Model of the Black Market Premium

Dependent Variable: LN_Z (Sample 1980 – 2005)

Variable	Coefficient	Standard Error	t-statistic	Probability
RER	-0.005	0.003	-1.76	0.09
LN_IR	-0.378	0.102	-3.72	0.002
LN_INFL	0.19	0.07	2.71	0.02
LN_Z2(-1)	1.32	0.182	7.24	0.00
C	6.97	2.027	3.44	0.003
R-squared	0.957290			
Adjusted R^2	0.947241	F-statistic	95.26	
S.E. of regression	0.184156			

The results from the parsimonious error correction model (ECM) are presented in Table 4. To avoid any estimations bias from the results, the ECM model was tested for such econometric assumptions as normality, heteroskedasticity, serial correction and mis-specification and these tests are presented in the appendix Table A3. Generally, the tests confirm that the shot-run model is statistically good. The statistical fit for the short run dynamic reduced form equation for black market premium in Zimbabwe appears to be good as indicated by higher values of both the R^2 and the F-statistic values. At the same time, as expected, the coefficient of the error term (ECM_{t-1}) has a negative sign and more importantly that it is at one percent level of significance. This significant negative sign on the ECM ensures that the all the explanatory variables in ECM work together for black market premium to get to equilibrium in the short run. Thus the ECM results confirm the appropriateness of the error correction approach framework and that it should be used in conjunction with the long run equilibrium relationship for better policy recommendations.

Table 4: Parsimonious single equation ECM of the black market premium

Modelling ΔLN_Z by OLS (Sample 1980 – 2005)

Variable	Coefficient	Standard Error	t-statistic	Probability
ECM_{t-1}	-0.24	0.32	-3.90	0.0014
DLN_M2	1.12	0.30	3.70	0.0021
DLN_Z2(-1)	0.91	0.23	4.0	0.0011
DLN_INFL	0.26	0.12	2.42	0.0286
DDVE	-0.70	0.38	-1.86	0.0823
C	0.007	0.04	0.16	0.8733
R^2	0.898	F-statistic	23.8	
Adjusted R^2	0.85			
S.E. of regression	0.18			

4.4 Results of Pairwise Granger Causality test

The Granger causality test is used to determine the nature of causality between changes in the black market exchange rate and inflation rate in Zimbabwe. To increase confidence of the results from this test, the test is based on both monthly and annual stationary data series for the period 1975(2) to 2006(12) and 1975 to 2006, respectively. The Granger causality tests presented in Table 5 (panels A and B) discloses that the direction of causality in both monthly and annual tests is generally bi-directional, from inflation rate to black market exchange rate and vice versa. Thus for Zimbabwe, these two series feed each other, and any meaningful monetary policy targeting the unification of the official and black market exchange rates has to be modeled in such a way that these two problems can be simultaneously dealt with.

Table 5: Pairwise Granger Causality Test

A: Monthly Data: 1975(2) – 2006(12)

Null Hypothesis	Obs	F-Statistic	Prob
D_INFL does not Granger Cause D_PAR	368	9.0	0.001
D_PAR does not Granger Cause D_INFL		6.88	0.008

B: Annual Data 1975 – 2006

Null Hypothesis	Obs	F-Statistic	Prob
D_PAR does not Granger Cause D_INFL	30	185.5	1.0E-15
D_INFL does not Granger Cause D_PAR		296.5	0.0000

5 Conclusions and policy recommendations

The findings generally conform to both theory and the empirical results of other studies on African countries. Given the theoretical importance of the expansionary monetary policy, the study concludes that growth in money supply is one of the major contributors to the proliferation of the black market for foreign currency in Zimbabwe. The same is true with regards to high rates of inflation. The fact that the country has been financing its fiscal deficit by expansionary monetary policy over the years has not been only damaging by causing higher inflation rates, but also by propagating the black market premium. Generally, both long-run and short run models presented in this research, together with the respective econometric test that were done on them, indicates that these models best fit the data, hence their results provide the quantitative determinants of black market premium in Zimbabwe.

5.1 Conclusion

The study analyzed the determinants and effects of black market exchange rate for the USD and the resulting black market premium for the economy of Zimbabwe. As in other countries, the parallel black market in Zimbabwe has arisen in response to government

distortions in the allocation of foreign currency to economic agents. For example, sometimes the allocation has been made on the basis of import licenses, which in turn are accorded to a handful of importers handpicked not always on the basis of their economic merit, leading to inefficiencies, rent-seeking and smuggling. The management of exchange rate in the Zimbabwean case over the recent years differed from other African countries in that the country has been hard hit by very high black market premium rates. Though, attempts to seriously address the fundamental factors underlying the parallel market have been made by means of a foreign currency auction system in January 2004, the system has been abandoned due to lack of sufficient foreign currency to satisfy the requirements of the demanders. As a result foreign currency continuous to be sold on the black market even today and the market continues to thrive.

5.2   Policy implications

The empirical results provides the following few policy recommendations. Firstly, the persistence effect of the premium is strong. It suggests that the black market has gone beyond being just tolerated by the government to becoming a stable institution, despite the fact that it is still officially "illegal". The fact that some government departments also resort to the black market for settling 'important' foreign currency payment obligations, is in itself a death blow towards successfully eradicating this pervasive market. The research's finding suggests that successful unification of the parallel and the official markets for foreign currency will require long-term measures, strong and sustainable enough to "destabilize" the parallel market. Given that trade liberalization polices and the auction systems to date have failed to rescue the economy from the evils of this market, it means that other policy strategies have to be employed. One possible policy strategy is the development of a more vibrant economy, as GDP growth normally reduces the premium in the long run. That is, economic growth which encompasses activities such as increased exports and foreign direct investments, to mention a few areas, means possibility of more foreign currency inflow, assuming other things constant.

Secondly, a more predictable (and aligned) exchange rate will reduce the uncertainty associated with frequent devaluations of the domestic currency, given the positive impact of the expected rate of devaluation on the level of the premium. A situation where firms and other investors are unable to make their decisions on the basis of a stable currency will cause difficulties in attracting investment, whether domestic or foreign, depriving the economy of foreign exchange that would ease pressure on demand for foreign exchange.

Thirdly, it is also a well known economic fact that exports are one of the nearly endogenous variables that any country can manipulate and use for its benefit to earn foreign exchange. Though export prices are exogenously determined on the international market, a country can still be able to reduce the scarcity of foreign currency by increasing its exports, both in quantity and quality terms through relevant export promotion strategies and state of the art production techniques, respectively. If Zimbabwe could be able to revive her export sector, much of the pain brought by black market maybe reduced to a greater extent.

Fourthly, another important factor which is a prerequisite for these policies to succeed is the restoration of the country's long-term macroeconomic and political stability. Even if the authorities were willing to implement the trade and exchange rate reforms that are necessary for a successful unification policy, it will be difficult to achieve and maintain macroeconomic discipline in a hyper inflationary, politically polarized and sanctioned/isolated country. Reducing the country's hyperinflationary environment and taking steps to mend the battered relations with the international community (among the array of ills to be corrected) would not only lay the basis for long-term development initiatives, but will also reactivate international cooperation with the country and boost confidence in Zimbabwe's economy. Other countries have capitalized on expatriates, created systems and structures credible enough to attract investment by their own 'diaspora'.

Lastly, although the study have pressed much attention on the policies suggested by material reviewed as well as the empirical results of the model, there are many more measures that will need to accompany the process of exchange rate unification in Zimbabwe. For example, unification will have to be marshaled in such a way that it does not generate excessive inflation. Other measures should include the government fostering a more competitive banking sector as well as general financial stability (especially following the financial crisis which hit the country, resulting in more than four banks placed under curatorship in 2004) in order to increase efficiency in the use of the country's limited financial resources, including foreign currency.

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APPENDIX

Table A1: Annual Currency Movements against US$ and Reasons for Adjustments

Time	Z$/US$	% Devaluation From Previous period	Inflation Rate	Reasons for Adjusting
Dec-79	0.6742	-	0.11	currency was pegged to the rand
Dec-80	0.6306	-	0.1	currency peg to the rand abandoned in March 1980
Dec-82	0.9195	20%	0.17	Adoption of Trade Weighted Basket of currencies Currency devalued by 20% on 9 December 1982
Dec-84	1.5029	36%	12.0%	Official Devaluation
Dec-90	2.6364	16%	14.0%	Official Devaluation
Dec-91	5.0511	92%	40.0%	To current for inflation differentials between Zimbabwe and her Major trading partners
Jan-93	6.0354	19%	45.0%	To current for the cumulative impact of inflation therefore offset the Misalignment- moving towards unification of market official exchange . Rate
Jan-94	8.4942	41%	18.0%	Intro. Corp FCA's, lib of current account to bring exchange rate closer to perceived market rate, exchange rate devalued by 17% on 1.Jan 94
Jan-95	8.3829		23.0%	Market and official exchange rate unified in July 1994- adoption of market determined exchange rate system
Jan-96	9.4509	13%	22.0%	Adjustment to cumulative inflation differentials
Jan-97	10.964	16%	19.0%	Adjustment to cumulative inflation differentials
Jun-97	11.391	4%	19.0%	Adjustment to cumulative inflation differentials
Sep-97	12.682	11%	19.0%	Adjustment to cumulative inflation differentials
Nov-97	14.556	15%	19.0%	Adjustment to cumulative inflation differentials
Dec-97	18.608	28%	19.0%	Adjustment to cumulative inflation differentials
Jan-98	18.235	-2%	32.0%	
Mar-98	16.139	-11%	32.0%	

				Widening inflation differentials, poor export performance, low foreign exchange reserves
Jun-98	18.012	12%	32.0%	Widening inflation differentials, poor export performance, low foreign exchange reserves
Jul-98	19.135	6%	32.0%	Widening inflation differentials, poor export performance, low foreign exchange reserves
Sep-98	33.761	24%	32.0%	Widening inflation differentials, poor export performance, low foreign exchange reserves
Dec-98	37.369	11%	32.0%	
Jan-99	39.247	5%	44.0%	Informal arrangements with the banking sector
Dec-99	37.65	-4%	57.0%	Informal arrangements with the banking sector
Mar-00	38.153	1%	51.0%	Informal arrangements with the banking sector
Aug-00	55	44%	54.0%	Official Devaluation to correct for overvaluation
Feb'03	824	1398%	221.0%	Introduction of export support rate to restore exporter viability
Jan'04	4197.6	409%	623.0%	Introduction of the foreign exchange auction system to restore export viability and enhance accountability of foreign exchange
Apr'04	5200	24%	505.0%	Introduction of Diaspora / export floor to enhance exporter viability
Oct'04	6200	19%	209.0%	Introduction of Diaspora / export floor to enhance exporter viability
May'05	9000	45%	129.0%	Introduction of Diaspora / export floor to enhance exporter viability
Jul'05	17600	63%	254.8%	Adjustment in line with inflation developments
Aug'05	24025	6%	265.1%	Adjustment in line with inflation developments
Sep'05	26000	29.90%	359.8%	Adjustment in line with inflation developments
Oct'05	76002	6%	359.8%	Adjustment to reflect market forces
Jan'06	99202	65%	613.2%	Adjusted to reflect volumes of foreign exchange traded

Source: Reserve Bank of Zimbabwe

Table A2: Univariate characteristics of all the variables

Series	Model	ADF			PP		Conclusion
		Lags	$\tau \ \tau_\mu \ \tau_\tau$	$\phi_3 \ \phi_1$	Lags		
LN_Z	τ_τ	3	-2.39	21.7***	2	5.74	Non-Stationary
	τ_μ	3	-3.7**	29.2***	2	6.04	
	τ	3	-4.2***	-------	2	6.28	
	τ_τ	3	-1.12	1.95	2	-1.35	

LN_IR	τ_μ	3	-1.76	2.5	2	-1.19	Non-Stationary
	τ	2	-0.56	-------	2	-0.76	
LN_INFL	τ_τ	3	-4.06**	7.52***	2	-2.44	Non-Stationary
	τ_μ	4	0.58	4.39	2	-0.89	
	τ	4	1.85	------	2	1.64	
LN_M2	τ_τ	4	0.29	8.38	2	-1.14	Non-Stationary
	τ_μ	4	1.44	6.3	2	-1.31	
	τ	4	0.99	--------	2	0.75	
RER	τ_τ	3	-3.73**	3.57	2	-2.12	Non-Stationary
	τ_μ	3	-3.53**	3.47	2	-1.85	
	τ	0	-1.90*	------	2	-2.01**	
DEV	τ_τ	3	-4.81***	5.18***	2	-2.73	Non-Stationary
	τ_μ	0	-2.81*	4.04	2	-3.05**	
	τ	0	-0.001	------	2	-1.55	
ΔLN_Z	τ_τ	2	-3.12**	5.98***	2	-4.23***	Stationary
	τ_μ	2	-2.23*	4.28**	2	-3.81***	
	τ	4	-1.76*	------	2	-2.78**	
ΔLN_IR	τ_τ	2	-4.39**	7.63***	2	-4.16**	Stationary
	τ_μ	1	-4.19***	10.54***	2	-4.03***	
	τ	1	-4.24***	-------	2	-4.08***	
ΔLN_INFL	τ_τ	3	-3.25	12.15***	2	-5.69***	Stationary
	τ_μ	3	-3.00*	14.44***	2	-5.51***	
	τ	3	-2.31**	-------	2	-5.19***	
ΔLN_M2	τ_τ	3	-4.99***	6.29***	2	-4.55***	Stationary
	τ_μ	4	-3.05**	4.7***	2	-4.30***	
	τ	4	-2.98	--------	2	-3.29**	
ΔRER	τ_τ	0	-5.31***	14.22***	2	-5.40***	Stationary
	τ_μ	0	-5.13***	26.13	2	-5.16***	
	τ	0	-5.15***	-------	2	-5.17***	
ΔDEV	τ_τ	3	-3.63*	5.18	2	-4.66***	Stationary
	τ_μ	3	-3.81**	6.98***	2	-4.61***	
	τ	3	-3.94***	-------	2	-4.77***	

*(**)[***] Statistically significant at a 10(5)[1] % level

Key: τ_τ: Means Trend and Intercept

τ_μ Means intercept

τ Means None

(LN_Z = log of the black market premium; LN_IR = log of international reserves; LN_INFL = log of inflation; LN_M2 = log of money supply; RER = real exchange rate; and DEV = devaluation).

Table A3: ECM's Diagnostic Tests

Test	H_0	Test Statistic	p-Value	Conclusion
Jarque-Bera	Normally distributed	JB = 3.57	0.19	Normally distributed
Ljung-Box Q	No Serial Correlation	LB_Q = 2.26	0.89	No Serial Correlation
Breusch-Godfrey	No Serial Correlation	nR^2 = 4.88	0.09	No Serial Correlation
ARCH LM	No Heteroskedasticity	nR^2 = 0.35	0.55	No Heteroskedasticity
White	No Heteroskedasticity	nR^2 = 1.93	0.37	No Heteroskedasticity

Stability Test

Test	H_0	Test Statistic	p-Value	Conclusion
Ramsey RESET	No Misspecification	LR = 4.31	0.12	No Misspecification