FOREIGN EXCHANGE RISK EXPOSURE OF LISTED COMPANIES IN SOUTH AFRICA

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ABSTRACT

The increased international participation of South African firms not only presents opportunities, but also exposes South African firms to foreign exchange risk. The study investigated the association between unanticipated changes in exchange rates and excess returns of firms listed on the JSE, as a method of assessing the levels of foreign exchange risk exposure of nonfinancial firms in South Africa, both for the pre- and post-2008 ZAR currency crisis.

All share price data, exchange rates data, and 3-month T-bill rates data were collected from I-Net Bridge. Levels of exposure to foreign exchange risk were measured through the augmented market model of Jorion (1990).

The results from this study report levels of foreign exchange risk exposure of nonfinancial firms listed on the JSE as 34.4%, 33.3%, and 37.8% for the US$, GBP, and the euro respectively, for the full period i.e. July 2002 to July 2013 . The results show that nonfinancial firms listed on the JSE have a higher incidence of negative foreign exchange exposure across all three dominant currencies regardless of the period used to run the model. The post-2008 crisis period reported significantly lower levels of foreign exchange exposure, and a higher incidence of positive levels of foreign exchange exposure, than in the pre-2008 currency crisis period.

The key message of the study is that exposure levels in South Africa in the post-2008 currency crisis period are significantly different to those levels in the pre-2008 crisis period. This means therefore that corporate treasury managers should review their hedging policies in the light of the changed external environment. The other message is that contrary to earlier studies that identified the US$/ZAR as the most important source of foreign exchange risk, this study established that the euro/ZAR is the more dominant source of foreign exchange risk in the South African market.

DECLARATION

I, Mashukudu Hartley Molele, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Mashukudu Hartley Molele

Signed at ……

On the …….. day of …… 2014

DEDICATION

I dedicate this work to my late paternal grandfather Moruti Maphalle Arnold Molele, the pillar of my faith, a dedicated servant to his Lord until the last moment, a man who lived his vows akin the fathers of monasticism. My late paternal grandmother Mmakhotlo Roseleah Molele who I never got to know but through my Dad have got to know the quiet resolve that ran in her. My late maternal grandfather Moruti Motinki Alpheus Mangena, he brought a lot of love, laughter and joy to me as his grandchild. Last but not least, my maternal grandmother ”Mmane” Mante Mangena the steel backbone to us all, she continues to preach to us as her grandchildren that we must internalise Corinthians 13.

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1 CHAPTER 1: INTRODUCTION

1.1 Purpose of the study

The purpose of this study is to assess the foreign exchange risk exposure levels of South African nonfinancial firms. The study further seeks to compare and contrast exposure levels of South African nonfinancial firms in the periods before and after the 2008 South African Rand currency crises. Foreign exchange risk exposure levels will be measured through the augmented market model of Jorion (1990). The augmented market model is a linear model which expresses share returns of a firm as a function of changes in exchange rates and the return on the overall market index.

The study will assess the extent of foreign exchange risk exposure of nonfinancial firms listed on the JSE, as defined through the economic exposure approach.

1.2 Context of the study

The liberalisation of South Africa's economy after 1994 unlocked opportunities for South African firms to source input products, open manufacturing facilities, raise capital, and to sell their manufactured goods in foreign markets (Eun & Resnick, 2009). In the South African context, financial and mining industries have had international links dating back to the nineteenth century (Verhoef, 2011). The author further states that the South African "manufacturing sector was a latecomer to international participation" (Verhoef, 2011: p.99).

The increased international participation of South African firms not only presents opportunities as outlined above, but also exposes them to foreign exchange risk. This is largely due to the fact that the foreign exchange market is the most liquid of all markets, and as a consequence, volatility of exchange rates becomes a challenge to managers of these firms in the context of the

increased role of international trade and the increased trend of globalisation. “It is widely accepted that fluctuations in exchange rates affect the competitive position of firms in the global market, and eventually impacts cash flows and firm value” (Hsiao & Han, 2012: p.1).

Managers recognise that a firm’s exposure to foreign exchange risk can have a significant impact on financial performance and firm value. Corporate treasury managers purchase currency derivative contracts in order to hedge against foreign exchange risk. Whether corporate treasury managers are successful in their management of foreign exchange risk in the context of South African nonfinancial firms is a question that must be tested empirically, particularly in the context of the recent global financial and currency crises.

Currency crises are defined in the literature as being characterised by structural changes in foreign exchange market volatility (Duncan & Liu, 2009). Figure 1 illustrates the structural change in monthly foreign exchange turnover of the South African Rand during the 2008 global financial crises

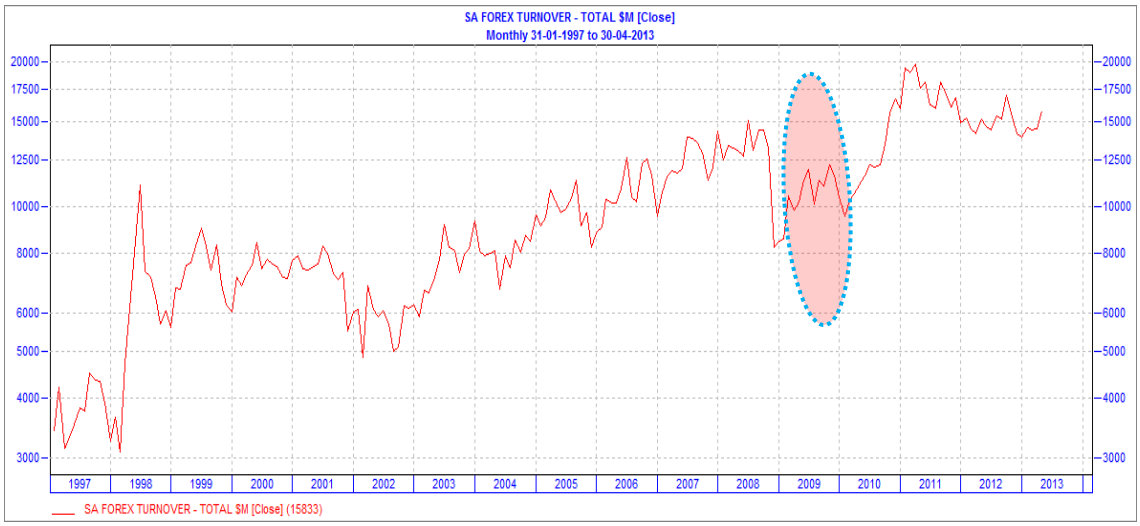

Figure 1: SA Forex Turnover - Total $M (I-Net Bridge)

Duncan & Liu (2009) studied the volatility structure of ZAR (South African Rand) returns over the period January 1994 to March 2009. They identified the 2008 ZAR currency crisis as having started on 26 September 2008 and having ended

on 5 November 2008. This is only a week after the US investment bank, Lehman Brothers, declared bankruptcy. These authors also identify other currency crisis periods as follows: Rand crisis 1 (16 May 1996 – 13 March 1997), Rand crisis 2 (10 June 1998 – 19 July 1998) and Rand crisis 3 (12 January 2001 - 22 January 2002).

It has been shown in the literature that firm currency exposure levels are time varying (Lin, 2011). The author established that during the 1997 Asian crisis and the 2008 global financial crisis, currency exposures were particularly high for firms in the Asian emerging markets when compared with periods of "tranquillity". The finding was interpreted to mean that firms could mitigate the greater currency exposures associated with periods of crisis by engaging in operational and financial hedges.

1.3 Problem statement

1.3.1 *Main problem*

The intention of this research is to assess the foreign exchange exposure of South African nonfinancial firms, and to contrast exchange rate exposure levels before and after the 2008 South African Rand crisis.

The study will investigate the association between unanticipated changes in exchange rates and excess returns of firms listed on the JSE as a method of assessing exposure levels. These exposure levels will be compared and contrasted for the pre- and post-2008 currency crisis periods, identified by Duncan and Liu (2009).

1.4 Significance of the study

The study fills a gap in that it provides a detailed empirical analysis of the extent of foreign exchange exposure of nonfinancial firms in the context of South

Africa. It is also unique in the South African context in that it will attempt to contrast the pre- and post-2008 South African Rand currency crisis levels of foreign exposure of South African nonfinancial firms.

The study will therefore seek to fill the gap in the literature by first determining the extent of foreign exchange exposure in the South African context. It further seeks to identify the key exchange rates to which there are higher incidences of foreign exchange exposure of South African nonfinancial firms.

Risk managers in the investment community and corporate treasury managers will particularly benefit from the findings of the study. Corporate treasury managers will be able to utilise the estimated levels of foreign exchange exposure of their firms to assess whether their hedging policies are adequate or if there is a need for a revision of such policies, especially in light of the changed global macroeconomic landscape following the 2008 global financial crisis. Risk managers and investment analysts will be able to conduct much more informed fundamental analysis of firms listed on the Johannesburg Securities Exchange (JSE) with a clear perspective of the likely impact of unexpected changes in exchange rates on individual firms within their portfolios.

1.5 Delimitations of the study

The study will be limited to those nonfinancial firms that are listed on the JSE. The decision to limit the study to listed firms stems from the fact that the methodology adopted in the study as guided by the literature requires the use of stock returns in the modelling framework. Therefore the findings of the study may not lead to proper inferences being made in relation to non-listed nonfinancial firms.

The study will also be limited to those companies that have been listed since July 2002. The JSE implemented the FTSE global classification system in June 2002. These changes caused the All Share Index, the benchmark market index,

to become significantly different when compared to the period prior to the implementation of the FTSE system (Mangani, 2007).

The study will also exclude mining firms due to the fact that as Verhoef (2011) argued, South Africa's mining and financial industries have had international links since the nineteenth century. The study is interested in isolating only those industries that started to establish international linkages after 1994 when the country became a true democracy. Financial firms such as banks and asset management companies are in the business of taking calculated risks, including foreign exchange risk and therefore the focus of this will be on those non-financial firms that are interested in minimising the uncertainty that relates to foreign exchange risk

1.6 Definition of terms

- The terms "currency exposure" and "foreign exchange exposure" will be used interchangeably in this study.
- Foreign exchange exposure : in this study we follow the work of Adler and Dumas (1984), who define corporate foreign exchange exposure as the sensitivity of firm value to unanticipated changes in exchange rates, as reflected in stock prices.
- Currency risk must not be confused with the foreign exchange exposure concept. Currency risk relates to random changes in exchange rates, whilst currency exposure measures "what is at risk" (Eun & Resnick, 2009: p. 229).
- ARIMA = Autoregressive Integrated Moving Averages
- GARCH = Generalised Autoregressive Conditional Heteroskedasticity.
- Forex = Foreign exchange.
- ALSI (J203) = All-Share Index, the value-weighted market index of the JSE.
- JSE = Johannesburg Securities Exchange.
- R = The currency of South Africa, the Rand (ZAR).

- US$ = The currency of the United State of America, the dollar (USD).
- ¥ = The currency of Japan, the Japanese Yen (Yen).
- € = The currency for the European Union, the Euro (EUR).
- £ = The currency of Great Britain, the British Pound (GBP).

1.7 Assumptions

The study will assume that all JSE data collected from I-Net Bridge is consistent with the actual data generated by the day-to-day trading on the JSE. This assumption is sound because a number of traders and asset managers who actively trade on the JSE rely on this data platform.

2 CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This section provides a literature review to synthesise the theory and evidence of the foreign exchange exposure of firms. A distinction is made between the different approaches to the definition of foreign exchange exposure of firms. The literature on foreign exchange rates is reviewed, followed by a review of the literature on share prices. Literature on the foreign exchange risk exposure of firms is reviewed. Finally, empirical evidence of the validity of the theoretical model in the developed market context as well as for the small open economy context will conclude the section. Based on the results of the literature review, the chapter will conclude with an outline of the hypothesis to be tested by the study.

2.2 Background discussion

There are three different types of foreign exchange risk exposure and these are: transaction exposure, translation exposure, and economic exposure (Eun & Resnick, 2009; O'Connor & Bueso, 1990).

Transaction exposure defined:

According to Eun and Resnick (2009) the extent of a firm's transaction exposure is equivalent to the amount of its receivables and payments that are denominated in foreign currency. To demonstrate the nature of a firm's transaction exposure, these authors provide two examples as follows:

Example 1:

Suppose that a South African firm sells its products to another firm based in the United States of America. The South African firm extends two-month credit terms and issues an invoice to its American client for the amount of US$1

million. When the South African company receives US$1 million after the two months, it will be subjected to the prevailing spot rates in the foreign exchange markets when it converts the US$1 million into South African Rand (ZAR). Clearly the South African firm cannot know the spot rates that will prevail in two months' time, with perfect certainty. It is this uncertainty of foreign exchange rates that gives rise to currency risk for the South African firm.

Example 2:

Consider a scenario where a South African firm raises capital in the international capital markets. The firm enters into a loan contract with a British bank that requires the delivery of £1 billion for principal and interest in 12 months. The fact that the ZAR/GBP exchange rate is uncertain means that the South African firm will not be certain about how much ZAR it will require to buy £1 billion in 12 months.

It is clear from the two examples that in instances where a firm has receipts and payments that are denominated in foreign currency, the firm will be exposed to currency risk and that the settlement of these payments and receipts will have an effect on the company's cash flow position (Eun & Resnick, 2009).

However, firms are able to manage their transaction exposure by purchasing contracts in the forward market for exchange rates. O'Connor and Bueso (1990) argue that the act of entering into contracts in the forward market exposes the firm to further transaction exposure because if the spot rates are lower that the forward rate at maturity, a firm that has an obligation to sell currency at that point in time will incur losses, thus affecting the firm's cash flow position.

Translation exposure defined:

Translation exposure is defined as the extent to which a firm's consolidated financial statements can be affected by exchange rate movements (Eun & Resnick, 2009). This is particularly relevant for multinational corporations which

have subsidiaries whose financial statements must be converted into the firm's home currency to comply with the firm's requirements for financial reporting.

Eun and Resnick (2009) argue that translation exposure is an attempt by accountants to measure the impact of the unexpected changes in exchange rates on firm value *ex post*. The authors further posit that this approach performs poorly with respect to the *ex ante* measurement of the impact of unanticipated exchange rate movements on firm value.

Economic exposure defined:

Transaction exposure is short-term in nature as opposed to economic exposure which is a much broader conception of foreign exchange risk exposure. O'Connor and Bueso (1990) define economic exposure as the foreign exchange risk that has the potential to impact on total cash flows of the firm.

Adler and Dumas (1984) are more specific in their definition of economic exposure. They define economic exposure as the sensitivity of firm value to unanticipated changes in exchange rates as reflected in stock prices.

It was quite clear from the discussion on transaction exposure that corporate managers have a full understanding of the extent of their firm's exposure to currency risks associated with short-term transactions which involve foreign-currency denominated obligations. This is also referred to as asset exposure.

Figure 2 illustrates the two channels through which changes in exchange rates can affect firm value. However, it must be noted that the extent of currency risk exposure of a firm's operating cash flows (also called operating exposure) is a function of the impact of changes in exchange rates on the firm's competitive position in the market place, and this is not easily measurable (Eun & Resnick, 2009). Hence, Adler and Dumas (1984) use share prices as a proxy for firm value as determined by the market. Share prices of different firms are generally relied upon to compare the competitive position of a firm relative to its peers.

For most firms, asset exposure accounts for a smaller proportion of the firm's total exposure to foreign exchange risk when compared to operating exposure. Thus, the definition of economic exposure provided by Adler and Dumas (1984) can be interpreted as an attempt to define and measure the extent of a firm's exposure to foreign exchange risk through the operating exposure channel.

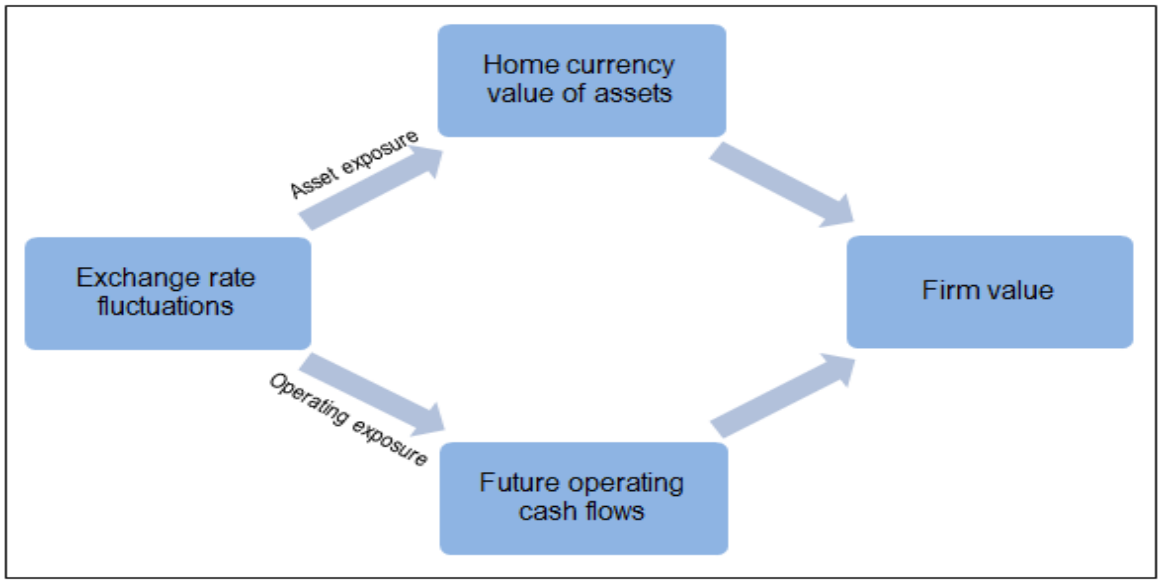

Figure 2: Channels of economic exposure (Eun & Resnick, 2009)

Eun and Resnick (2009) argue that the extent of a firm's operating exposure is a function of the structure of the firm's markets for key resources, such as labour and raw materials, as well as the firm's strategic management capabilities in respect of its positioning in the market. This argument is much better articulated by Soenen and Madura (1991) who argue that the focus on transaction exposure is only good for corporate managers who are interested in maximising short-term after-tax profits, and that for managers whose incentives are more aligned with shareholders' interest, a strategic approach to the management of foreign exchange risk is necessary if firm value is to be maximised in the long-term.

It is clear from the literature review that economic exposure is a much more important approach to the management of foreign exchange risk in the long-

term. The management of the different types of exposure is not the primary aim of the study, and therefore a detailed discussion of the mechanics of management of such foreign exchange risk exposure is beyond the scope of this study.

2.3 Foreign exchange risk exposure of firms

2.3.1 *Exchange rate uncertainty of the South African Rand*

Bilateral exchange rates are better understood simply as the price of foreign exchange (for example, US$) measured in foreign units of domestic currency (ZAR) (Copeland, 1989). A trade-weighted exchange rate on the other hand represents the value of ZAR measured against a basket of currencies.

Eun and Resnick (2009, p25) define the international monetary system as “the institutional framework with which international payments are made, movements of capital are accommodated, and exchange rates among currencies are determined”.

The fall of the Bretton Woods system in 1972 was followed by the adoption of the flexible exchange rate system (Eun & Resnick, 2009). Under the Bretton Woods system, currencies were pegged to the US$, thus eliminating the uncertainty that currently characterises the foreign exchange market, where both nominal and real exchange rates have become more volatile (Baum, Caglayan, & Barkoulas, 2001).

Current exchange rate arrangements can be classified into eight broad categories, including amongst others, pure float exchange rate arrangements (Eun & Resnick, 2009)[1]. In the case of an independent float, exchange rates are purely determined by market forces of demand and supply (Copeland, 1989).

[1] The South African Rand (ZAR) is classified as a pure float.

The key to understanding the cause of currency fluctuations is first to understand the key players in the market who drive demand and supply of currency.

Eun and Resnick (2009) view the foreign exchange market as a two-tier market comprising the inter-bank and the client market. As reported in Table 1, the client market accounted for 17 percent of the trading volume in the foreign exchange market, whilst 83 percent of the trading volume was driven by the interbank market (Eun & Resnick, 2009). Most trades handled in the interbank market are of a speculative or arbitrage nature (Eun & Resnick, 2009). This clearly demonstrates the driving force behind demand and supply conditions in the foreign exchange market.

Table 1: FX turnover by instrument and counterparty[2]

Instrument/Counterparty	Turnover in USD (million)	Percentage
Spot	**$1,004,889**	**33**
With reporting dealers	426,480	14
With other financial institutions	394,206	13
With nonfinancial customers	184,203	6
Outright Forwards	**361,730**	**11**
With reporting dealers	95,875	3
With other financial institutions	158,862	5
With nonfinancial customers	106,993	3
Foreign Exchange Swaps	**1,714,370**	**56**
With reporting dealers	796,172	26
With other financial institutions	682,212	22
With nonfinancial customers	235,986	8
Total	$3,080,989	**100**

Source: (Eun & Resnick, 2009), Bank of International Settlements, Dec, 2007

Gidlow (2004) provides an account of South Africa's major exchange rate policy changes which resulted in the current system of a pure floating South African Rand. According to the author, the South African Reserve Bank (SARB) first announced a more hands-off approach to its exchange rate policy on 26 August 1998. The Governor of the SARB at the time, Dr Stals, is said to have told the Bank's shareholders that the long established policy of the Bank's intervention

[2] Average daily turnover

in foreign exchange markets to support the Rand was unsustainable given the increasingly volatile nature of capital. The author argues that the decision of the SARB to abandon its policy of intervention in the market to support the Rand and to introduce an element of uncertainty in the exchange rate of the Rand was partly made to discourage speculators from taking short positions in the Rand.

Takaendesa, Tsheole, and Aziakpono (2006) investigated the impact of real exchange volatility of the South African Rand on export flows to the United States of America. Their study spans the period January 1992 to April 2004. The study uses cointegration techniques and error correction methods to study the relationship between real exchange rate volatility of the Rand and export flows; the writers find that the volatility of the real exchange rate of the Rand has a negative impact on real exports.

The sharp volatility in the Rand (ZAR) exchange rate in the aftermath of the 2008 global financial crisis is another phenomenon that must be explained. Franscher (2009) argues that most currencies, including the ZAR, depreciated in value relative to the US$ due to the fact that they had weak current account positions. He further argues that those countries that had “high direct financial exposure to the United States, with low foreign exchange reserve coverage suffered substantially in terms of currency depreciations” (Franscher, 2009: p 1406). The whole emphasis of Franscher’s paper was based on the premise that the reversal in capital flows away from emerging markets, as US investors increasingly looked to enhance their liquidity positions, meant that countries with low levels of US$ reserves such as South Africa would be most susceptible to currency depreciations.

2.3.2 *Share return properties of JSE listed firms*

Damodaran (2001) argues that share price maximisation is the primary objective of managers and shareholders aiming to maximise firm value because of three reasons:

- Unlike earnings and sales which are reported quarterly, share prices are easier to observe and thus aid in measuring a firm's performance better than other measures.
- Market participants are assumed to be rational and so share prices reflect the rational investor's best estimate of firm value.
- The share price is also seen as the best measure of value to the shareholder because if the shareholder were to opt to exit his or her investment in the firm, the share price would represent the value of the firm to the shareholder.

The discounted cash flow valuation (DCF) method is the most fundamental valuation method of listed firms (Damodaran, 2001). Cuthbertson and Nitzsche (2004) show how a firm's share returns can be related to firm value under the DCF method.

Chimanga and Kotze (2009) use a multivariate factor model in examining the factors that affect stock returns on the JSE. Their study spans the period 1997 to 2007. They found that the Arbitrage Pricing Theory (APT) of Ross (1976) was better at explaining the return generating process than the Capital Asset Pricing Model (CAPM).

Ward and Muller (2012) conducted an empirical testing of the CAPM on the JSE and found that the CAPM is redundant in the JSE context. The authors conclude that their findings indicate that stock risks are multidimensional. This gives further support to the use of an APT type model.

Mangani (2007) studied the distributional properties of share prices and share returns of firms listed on the JSE. The study spanned the period February 1973 to April 2002. The sample comprised 42 JSE listed firms. The study found that JSE share prices were generated by non-stationary as opposed to share returns (logarithmic share prices) which were found to be stationary processes. The author further concluded that the findings of the study imply that share returns must be the basis of empirical studies of JSE share price behaviour.

2.3.3 *Empirical evidence of foreign exchange exposure*

Section 2.2 gave the theoretical foundations to the concept of foreign exchange risk exposure of firms. However, despite the strong theoretical grounds for foreign exchange risk of firms, Bartram and Bodnar (2007) found limited empirical support for the foreign exchange exposure phenomenon. These authors carried out an extensive survey of the literature on the foreign exchange exposure phenomenon in the developed market context and found that regardless of any differences with respect to methodological approach across the studies covered in the survey, the incidence of significant currency risk exposure ranged between 10-25 per cent of all firms in the respective studies.

The primary difference in the methodological approach is with respect to model construction. Adler and Dumas (1984) measure foreign exchange risk exposure as the sensitivity of firm value to unanticipated changes in exchange rates as reflected in stock prices. The authors specify a linear model of share returns regressed against changes in exchange rates. They point out that the use of share returns is primarily due to the fact that statistical estimation of the model requires stationary data, and stock prices are known for not being stationary, whilst share returns are stationary.

The model is as follows:

$$R_{i,t} = \alpha_i + \beta_i XR_t + \varepsilon_{i,t} \qquad (1)$$

Here, $R_{i,t}$ designates the share return of firm i in period t, XR_t is the change in exchange rate in period t, β_i is the sensitivity of firm i's share returns to changes in exchange rates, α_i is the constant term, and $\varepsilon_{i,t}$ is the error term.

The estimated foreign exchange exposure using equation (1) is referred to as total exposure. However, the total exposure tends to exaggerate the importance of foreign exchange changes in explaining the variation in share returns since equation (1) does not include other macroeconomic variables which may co-vary with exchange rates and share returns (Muller & Verschoor, 2006).

Jorion (1990) dealt with the criticism around the total exposure estimated in equation (1) by incorporating the return on the overall market index. The augmented market model as it is referred to in the literature is written as follows:

$$R_{i,t} = \alpha_i + \beta_i XR_t + \gamma_i R_{m,t} + \varepsilon_{i,t} \quad (2)$$

Here, $R_{i,t}$ designates the share return of firm i in period t, XR_t is the change in exchange rate in period t, β_i is the sensitivity of firm i's share returns to changes in exchange rates, α_i is the constant term, γ_i is the sensitivity of firm i's return to movements in the market index, $R_{m,t}$ is the return of the market index in period t, and $\varepsilon_{i,t}$ is the error term. In equation (2), β_i is referred to as the residual exposure because it is estimated by offsetting the firm's total exposure by the market exposure as measured by the firm's market beta (Muller & Verschoor, 2006).

Other differences in the methodological approach include the selection of the representative exchange rate to be applied in the model. Many studies have used trade-weighted exchange rates as a proxy (Allayannis & Ihrig, 2001; Bodnar & Gentry, 1993; Bodnar & Wong, 2003; Jorion, 1990). On the other hand, some have opted for bilateral exchange rates (De Wet & Gebreselasie, 2004; Khoo, 1994). Williamson (2001) argues that the use of trade-weighted exchange rates may tend to underestimate exposure levels for a firm in those instances where the relevant currencies affecting a firm's foreign sales form a smaller component in the basket of currencies comprising the trade-weighted exchange rates. The other question with respect to the use of exchange rates in the model is whether to use actual changes in exchange rates to estimate unanticipated changes in those rates. Some studies have opted to utilise actual changes in the exchange rate (Bodnar & Gentry, 1993; Jorion, 1990). Others, on the other hand, have opted to use modelling techniques such as ARIMA and GARCH to derive residuals which are then used as a proxy for unanticipated changes in exchange rates. De Wet and Gebreselasie (2004) argue that the

use of actual changes in exchange rates as opposed to unanticipated changes is primarily motivated by the argument that changes in exchange rates are largely unanticipated.

Other differences in respect of the methodological approach involve the method for the selection of a sample. Pantzalis, Simkins, and Laux (2001) found that multinational firms with a global footprint tend to have lower levels of exposure. Multinational firms tend to be hedged operationally and therefore exposure levels are easily lowered through measures such as exposure netting (Eun & Resnick, 2009).

Bodnar and Wong (2003) distinguish between the impact of using value-weighted and equally-weighted market as control variables in equation (2). These authors argue that the use of value-weighted market portfolios such as the ALSI tends to favour larger firms. They argue that because most of the larger firms are multinationals and net exporters, their cash flows will increase when the domestic currency depreciates. They further argue that the impact of this situation is that the market portfolio will tend to show negative exposure. On the other hand, equally-weighted market portfolios tend to favour smaller firms.

Empirical studies have been conducted with respect to foreign exchange exposure of firms in the context of small open economies. These have largely reported much higher levels of currency risk exposure (Chen, Naylor, & Lu, 2004; Hsiao & Han, 2012; Salifu, Osei, & Adjasi, 2007).

In the South African context, De Wet and Gebreselasie (2004) examined the foreign exchange exposure of the country's four major commercial banks and found that contrary to weak empirical evidence in the developed market context, their study revealed significant levels of foreign exchange exposure. However, it must be noted that this finding is hardly surprising as financial firms have very different attitudes towards financial risks (Bartram & Bodnar, 2007).

Barr, Kantor, and Holdsworth (2007), on the other hand, undertook a study of exposure to foreign exchange risk, of firms comprising the Top 40 stocks listed on the JSE in terms of market capitalisation.

2.4 Conclusion of Literature Review

It is clear that foreign exchange markets are dominated by speculators such as hedge funds, which account for most of the trading volume on those markets. In the process they affect demand and supply conditions that determine exchange rates. The South African Reserve Bank was shown to have adopted the pure floating exchange rate regime which essentially means that prices are determined by market forces, thus subjecting the Rand to periods of volatility without central bank intervention. The volatility of the Rand was also shown to have an adverse effect on the trade performance of South Africa in respect of export flows to the United States of America.

It was also demonstrated that most studies in the South African context have tended to focus on the financial sector and the larger firms listed on the JSE. This study will contribute to the literature by focusing on nonfinancial firms listed on the JSE

2.5 Formulation of Hypothesis

2.5.1 ***Null Hypothesis (H_0):***

Unanticipated changes in foreign exchange rates have no effect on excess returns of firms listed on the JSE.

2.5.2 ***Alternative Hypothesis (H_1):***

Unanticipated changes in foreign exchange rates have an effect on excess returns of firms listed on the JSE.

3 CHAPTER 3: RESEARCH METHODOLOGY

This section outlines the research methodology that will be adopted in this study. The research paradigm used in this study is described, followed by a description of the research design that will be applied in the process of arriving at a firm conclusion regarding the hypothesis outlined in section 2.5. The populations and the sampling method adopted for the purpose of this study are described. The model will be estimated using the student version of E-Views 7 software.

3.1 Research methodology

The study will use the quantitative research approach. “The preferential use of a quantitative approach places greater value upon information that can be numerically manipulated in a meaningful way, and this is the traditional scientific approach to research” (Page & Meyer, 2000: p.17).

The primary research strategy that will be adopted is the hypothesis-testing research strategy. A statistical model of the relationship between firm value and changes in foreign exchange rates will be estimated. The estimated parameters from the statistical model will be tested at a chosen level of significance to see if they support the theoretical predictions of the foreign exchange exposure literature. The findings will then be summarised in order to describe general patterns observed from the sample and to generalise about the broader population.

3.2 Research Design

The study begins by providing a summary of the market data collected. The market data include share prices, three different bilateral exchange rates, the 3-month Treasury Bill rate, and the FTSE/JSE All Share market index. The

summary will be in the form of descriptive statistics such as the mean, standard deviation, skewness, and kurtosis of market data.

Once the study has given an indication of the nature of the market data in terms of their probability distributions, the necessary transformations of each of the relevant variables will be made. Transformations of relevant variables will be guided by finance theory. For example, the mechanics of computation of excess returns of an asset such as share prices are well established in the literature and are acceptable as standard (Brooks, 2008; Cuthbertson & Nitzsche, 2004; Koop, 2006). This will ensure that the parameters estimated by the model will be reliable and unbiased, thus allowing for correct inferences to be made about the association between the variables of interest; in this exercise the main such variable is the association between firm excess returns and unanticipated changes in the exchange rates.

The study will adopt the augmented market model of Jorion (1990) as follows:

$$R_{i,t} = \alpha_i + \beta_i XR_t + \gamma_i R_{m,t} + \varepsilon_{i,t} \quad (3)$$

Where $R_{i,t}$ is the excess return of firm i at period t.

β_i is the sensitivity of firm i's excess returns to unexpected changes in exchange rates .

XR_t is the unexpected change in the exchange rate.

γ_i is the sensitivity of firm i's return to market fluctuations.

$R_{m,t}$ is the excess return of the market index, the ALSI.

$\varepsilon_{i,t}$ is the error term (white noise).

The market model outlined above is augmented in the sense that the basic single factor model of Adler and Dumas (1984) is extended by incorporating an additional factor in the form of a market index. The idea behind the incorporation of a market index is that the systemic risk captured by γ_i helps to

improve the estimation of the residual foreign exchange risk exposure as measured through the parameter β_i.

The augmented market model is an empirically testable model of foreign exchange risk pricing. Its theoretical foundation is rooted in the work of Ross (1976), the so-called Arbitrage Pricing Theory (APT), and the work of Solnik (1983), who extended APT to the international environment (Kodongo, 2011). The attractiveness of the APT model is in the fact that it makes no assumptions about an investors' objective function (Cuthbertson & Nitzsche, 2004).

Cuthbertson and Nitzsche (2004) show that the APT model can be summarised in two equations:

$$R_{it} = a_i + \sum_{j=1}^{k} b_{ij} F_{jt} + \varepsilon_{it} \quad (4)$$

$$ER_{it} = \lambda_0 + \sum_{j=1}^{k} b_{ij} \lambda_j \quad (5)$$

Equation (4) measures the contemporaneous risk exposure to the cross-section of assets. In Equation 5, ER_{it} is the expected return on firm i at period t while λ_0 is the risk free rate. In that equation, λ_0 and λ_j are constant across the cross-section of share returns.

Therefore the augmented market model is a two factor APT model of a cross-section of firms: foreign exchange rates and the market index are the two factor loadings. The coefficient of market index measures systematic risk, whilst the coefficient of the foreign exchange rate factor load measures foreign exchange risk exposure

The sample used in the study is made up from a representative cross-section of firms, the returns of which have been observed at intervals of one week over a period of 12 years. This suggests that panel data are present and as such, panel regression methods are most appropriate in the estimation of our model. Khoo (1994) posits that single equation individual firm-level estimation of the

model for each firm in the sample using Ordinary Least Squares methods will result in parameter estimates that are unbiased and consistent; however, they are not efficient. That author further argues that the use of panel regression methods known as Seemingly Unrelated Regressions (SUR) in the estimation of the augmented market model provides much more efficient estimates because these methods take advantage of the panel data structure by factoring contemporaneous correlations between the error terms of each of the firm's specific linear equations.

3.3 Population and sample

3.3.1 *Population*

The population for this study comprises all firms listed on the JSE.

3.3.2 *Sample and sampling method*

The sample comprises those nonfinancial firms that have been listed on the JSE since July 2002 i.e. firms with missing data have been excluded from the sample The JSE implemented the FTSE global classification system in June 2002. As a result the All Share Index, the benchmark market index, would differ significantly from the period prior to the implementation of the FTSE system (Mangani, 2007). The total number of companies included in the sample is 90 firms and these are listed in Appendix A

The data collected for the study spans the period July 2002 to June 2013, in weekly frequencies. The SUR framework requires that the number of time series observations per cross-section unit (T) be greater that the total number of cross-sections ($N = 90$); thus, $T > N$ for all firms in the sample (Brooks, 2008). Monthly data will not be feasible under the SUR framework because the two sub-periods used to compare and contrast pre- and post-crisis exposure levels fail the $T > N$ data constraint under the SUR framework. Daily data would have

resulted in a time series of over 2 870 observations per variable; this would increase the power of the test and would possibly expose the test to the risk of committing a Type II error when conducting hypothesis tests. Weekly data on the other hand will result in a time series comprising 577 observations, which meets the data constraints under the SUR methodology, and is less prone to the risk of committing a Type II error when compared to daily data.

3.4 The research instrument.

3.4.1 *Seemingly Unrelated Regression model*

The study will estimate equation (3) based on the SUR method of Zellner (1962) and in accordance with many other studies in this area of research (Bodnar & Gentry, 1993; Dominguez & Tesar, 2006; Khoo, 1994). The method is appropriate for the study because the coefficients in equation (3) and equation (4) are assumed to be time-invariant, yet they vary across firms. The assumptions imply that levels of foreign exchange risk exposure are expected to vary across firms, and the systematic risk exposure of firms will also vary across the cross-section of firms, yet remain constant inter-temporally.

Estimation of the Regression Model

The SUR method is set up as follows:

$$\begin{bmatrix} \boldsymbol{y}_1 \\ \boldsymbol{y}_1 \\ \vdots \\ \boldsymbol{y}_N \end{bmatrix} = \begin{bmatrix} X_1 & & & \mathbf{0} \\ & X_2 & & \\ & & \ddots & \\ \mathbf{0} & & & X_N \end{bmatrix} \begin{bmatrix} \boldsymbol{\beta}_1 \\ \boldsymbol{\beta}_2 \\ \vdots \\ \boldsymbol{\beta}_N \end{bmatrix} + \begin{bmatrix} u_1 \\ u_2 \\ \vdots \\ u_N \end{bmatrix} \tag{6}$$

Here, $\mathbf{X}_{\mathrm{n}}$ is a $1 \times \mathbf{k}_{\mathrm{n}}$ vector of explanatory variables and $\boldsymbol{\beta}_n$ is a $\mathbf{k}_{\mathrm{n}} \times 1$ vector of parameters, and $n = 1, 2, \ldots, N$. In cases where there is covariance between error terms across the systems of equations ($E\boldsymbol{u}_i\boldsymbol{u}_j' \neq 0$) then the Generalised Linear Squares (GLS) estimator under equation (6) is more efficient than the

Ordinary Least Squares (OLS) estimate of single-equation parameters for each cross-section unit (Hsiao, 2003).

Baltagi (2001) summarises the benefits and limitations of working with panel data methods as follows:

Benefits of working with panel data:

a) Panel data methods control for individual heterogeneity better than time series methods and cross-section methods, thus reducing the risk of estimating biased results. An example of this particular benefit of working with panel data methods is found in Khoo (1994), who ran single equation time series regression on equation (3) and also estimated equation (3) under the SUR framework. That author found that the adjusted R^2 was slightly lower for the SUR model. Under single equation OLS methods the coefficients are still unbiased; however, standard error estimates are inaccurate when compared to estimates based on the SUR framework.
b) Panel data provide more informative data and therefore reduce the likelihood of multicollinearity.
c) Panel data methods are more dynamic and therefore better at discerning inter-temporal dynamics than cross-section methods which are static.
d) In some cases, times series and cross-section methods are unable to detect and measure certain effects which can be easily handled under panel data methods.
e) In most instances panel data are collected at the micro level of individuals and firms. Panel regression methods eliminate the need to aggregate at the macro level which in many instances is the cause of biased estimates in the case of pure time series methods.

The limitations of panel data methods are mostly at the panel survey design and data collection levels. However these are not relevant in this study because

secondary data are available from a number of sources such as I-Net Bridge, McGregor BFA and the South African Reserve Bank.

Overall Model Fit

The coefficient of determination R^2 measures the extent to which the estimated regression model explains the variation in total returns for a firm (Koop, 2006). The adjusted R^2 is a better measure in the context of the study because there is more than one explanatory variable in the regression model. The F-statistic and its associated p-value (Prob(F-statistic) in E-Views model output) will be used to test overall model fit; in other words, to test if the R^2 is statistically significant (H_0: adjusted $R^2 \neq 0$). The decision rule will be as follows:

- If Prob(F-statistic) *is less than* 0.05, we reject that adjusted $R^2 = 0$
- If Prob(F-statistic) *is greater than* 0.05, we accept that adjusted $R^2 = 0$

Interpretation of the regression coefficients will only proceed if it is found that there is model fit.

Interpretation of Regression Coefficients

The primary statistic of interest in this study is the regression coefficient β_i. The focus of the study will be on the statistical significance of β_i, and the size of the statistic will be a secondary issue. Detailed discussion on the interpretation of regression coefficients is covered in section 3.6.3.

3.5 Procedure for data collection

I-Net Bridge is the primary source of data on historical share prices and dividend yields for each of the firms comprising the sample, the total return index of the ALSI (J203), the 3-month Treasury Bill, and exchange rates. The following exchange rates will be sourced: a) ZAR/US$, b) ZAR/€, and c) ZAR/£. According to the South African Reserve Bank, these three currencies represent three of the five major currencies on a trade-weighted basis (SARB, 2008). The

US$, €, and the £, are weighted as follows 14.88%, 34.82%, and 10.71% respectively . The Chinese Yuan and the Janapese Yen were excluded due to challenges with the collection of reliable data. McGregor BFA will be relied upon to validate the integrity of the data sourced from I-Net Bridge.

3.6 Data analysis and interpretation

3.6.1 *Computation of Excess Returns*

Following Koop (2006), Excess Returns (*ER*) for each company in the sample will be calculated as follows:

$$ER_{it} = R_{it} - R_{0t} \qquad (7)$$

Where R_{0t} is the yield on the risk-free rate, the 3-month Treasury Bill.

The total holding period returns R_{it} in equation (5) will be calculated follows:

$$R_{i,t} = \frac{P_t - P_{t-1} + D_t}{P_{t-1}} \times 100 \qquad (8)$$

where P_t and P_{t-1} represent stock prices at time t and t-1 respectively, and D_t represent dividend yield at time t.

Cuthbertson and Nitzsche (2004) provide a theoretical treatment of the relationship between total holding period returns and the value of firms under the discounted cash flow method. Brooks (2008) and Koop (2006) both argue that total period holding returns are appropriate in a study that relies on a cross-section of returns. This clearly provides both a theoretical and an empirical support to the use of total holding period returns as opposed to simple returns or compounded returns

The JSE provides data on the total return index of the ALSI (J203). Therefore, compounded returns on the J203 will be calculated as follows.

$$R_{mt} = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100 \qquad (9)$$

where P_t and P_{t-1}represent the total return index of the ALSI (J203) at time t and t-1 respectively.

3.6.2 *Descriptive Statistics*

The study will provide descriptive statistics for each of the variables in order to illustrate sample data. The goal of this exercise is to gain an understanding of the distribution of each of the variables.

Measures of central tendency

a. The Mean

Suppose $X_1, X_2, X_3,\ldots,X_n$ are actual values generated by a random variable **X,** in a sample of size n. The arithmetic mean of the sample is defined as follows:

$$\overline{x} = \frac{1}{n}\sum_{i=1}^{n} x_i \qquad (10)$$

b. The Median

Suppose $X_1, X_2, X_3,\ldots,X_n$ are actual values generated by a random variable **X,** in a sample of size n. Suppose also that the sample data are arranged in an ascending order. The median of the sample is defined as the middle observation if ***n*** is an odd number, and it is defined as the mid-way between the two observations at the centre of the series of observation if ***n*** is an even number.

c. The Mode

The mode is defined simply as the most frequently occurring value.

Measure of dispersion

The standard deviation is a measure of the variability in the sample data and is calculated as follows:

$$s = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}} \qquad (11)$$

Shape of the sample data

a. Skewness and Symmetry

Skewness is defined as follows:

$$\text{Skewness} = \frac{\sqrt{n}\sum_{i=1}^{n}(x_i - \bar{x})^3}{\left(\sum_{i=1}^{n}(x_i - \bar{x})^2\right)^{3/2}} \qquad (12)$$

In this study the mean and the median will be the most appropriate measures of central tendency as they will help in determining the shape of the curve that represents the distribution of the sample data. Symmetry is achieved when the mean and the medial are equal. Positive skewness of the curve occurs when the mean is greater than the median, while negative skewness occurs when the mean is less than the median. It is important to note that for a variable to be

deemed to be normally distributed, the mean, median, and mode have to be equal.

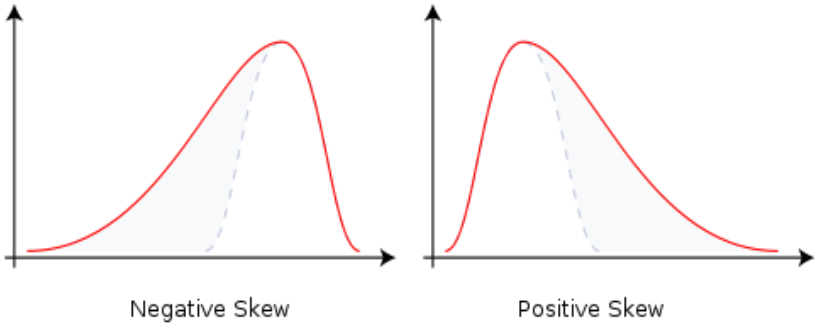

Figure 3: Skewness (Schumacher, 2012)

b. Kurtosis

Kurtosis is defined as follows:

$$\text{Kurtosis} = \frac{n\sum_{i=1}^{n}(x_i - \bar{x})^4}{\left(\sum_{i=1}^{n}(x_i - \bar{x})^2\right)^2} - 3 \qquad (13)$$

Kurtosis is a relative measure of the flatness of the curve and the peak of the curve. A normal distribution has a Kurtosis equal to 0, and is similar in shape to the blue curve in figure 4.

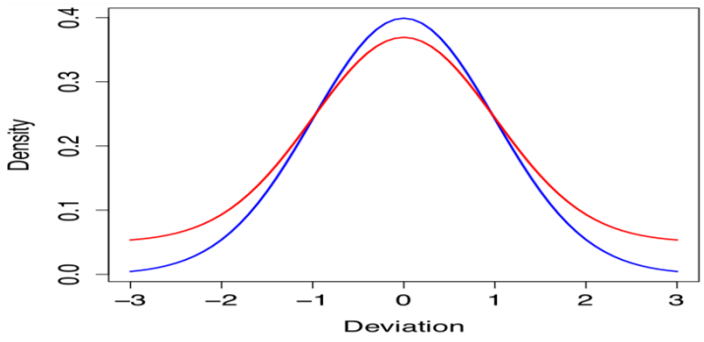

Figure 4: Kurtosis (Hossain, 2008)

3.6.3 *Hypothesis Testing*

The study will test the hypotheses formulated in section 2.5 by comparing the p-value to the 95% significance level. The hypotheses were formulated as follows:

H_0: $\beta_i = 0$: Unanticipated changes in foreign exchange rates have no effect on excess returns of firms listed on the JSE.

H_1: $\beta_i \neq 0$: Unanticipated changes in foreign exchange rates have an effect on excess returns of firms listed on the JSE.

The p-value is calculated in E-Views as part of the regression model output. Table 2 summarises the decision rule that will be followed in arriving at a conclusion regarding the hypothesis tests for each firm in the sample. The null hypothesis (H_0) is rejected if the p-value ≤ 0.5. Section 3.3.2 outlines measures taken to minimise the risk of committing Type II error.

Table 2: States of nature, decision on null hypothesis, and associated probabilities

DECISION ON NULL HYPOTHESES	STATES OF NATURE	
	NULL HYPOTHESES TRUE	NULL HYPOTHESES FALSE
ACCEPT	Correct decision Probability = 1 – α	Type II error Probability = θ
REJECT	Type I error Probability = α (α is called **significance level**)	Correct decision Probability = 1 – θ (1 – θ is called **power**)

Source: Newbold (1995)

3.7 Limitations of the study

- The use of the ALSI, a value-weighted market index may give biased results in the estimation of exposure levels of smaller firms.

- The use of bilateral exchange rates may result in some firms showing no exposure purely because the firm in question has no presence in the foreign markets of United States of America, Great Britain, or the Euro area.
- The sample comprises listed firms and therefore the results may not necessarily be generalised to similar firms of the same size that are unlisted. The results will largely be descriptive of exposure levels of nonfinancial firms listed on the JSE, and may not be extrapolated to calculate the future exposure levels or exposure levels of firms that are not listed on the JSE

3.8 Validity and reliability

The issue of validity addresses the degree to which the research instruments are accurate measures of reality (Easterby-Smith, Thorpe, & Lowe, 2002).

3.8.1 *External validity*

External validity relates to “the probability that patterns observed in the sample will be repeated in the general population” (Easterby-Smith, Thorpe, & Lowe, 2002: p.53). The study will rely on panel regression methods as opposed to single equation methods for individual firm regressions. The finding of a model fit within the SUR framework will help in giving credence to the external validity of the study. A sample size of 90 firms and ten years’ history of weekly share prices will also serve to increase the external validity of the study.

3.8.2 *Internal validity*

Internal validity addresses the issue of whether the research method is capable of eliminating bias and the effect of extraordinary variables (Easterby-Smith, Thorpe, & Lowe, 2002). In order to minimise bias in the determination of levels of foreign exchange exposure, the study will estimate residual exposure levels as opposed to total exposure levels. The literature review demonstrated that the

augmented market model of Jorion (1990) is the one most favoured by practitioners in this area of research.

The use of the ALSI, a value-weighted market index, may give biased estimates of exposure levels for smaller firms. However, many studies rely on the use of value-weighted market indices as a control variable in their estimation of the augmented market model (De Wet & Gebreselasie, 2004; Jorion, 1990; Shin & Soenen, 1999). The methodological approach of this study is consistent with other studies.

3.8.3 ***Reliability***

Reliability of a study deals with questions such as: “will the measures yield the same results on other occasions” (Easterby-Smith, Thorpe, & Lowe, 2002: p.53). It is expected that the general patterns observed from the sample will be reliable. The sample size and the period of the study provide both the breadth and depth to ensure reliability of the findings of the study.

4 CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents and describes the results of the data analysis as well as the firm-level foreign exchange exposure hypothesis tests conducted on the basis of the augmented market model of Jorion (1990).

4.2 Data Analysis

Figure 5 illustrates the raw price data against the corresponding returns data for the ALSI and the three different exchange rates: ZAR/US$, ZAR/GBP, and the ZAR/EUR.

It is clear from figure 5 that all four variables are generated by non-stationary processes, whilst the corresponding returns data appear to be stationary. This is evident because the raw data appear to be trending, whilst the returns data appear to be mean-reverting with apparent volatility clustering. It is also interesting to note that the returns data for all four variables show heightened volatility in the last quarter of the year 2008. This can be attributed to the 2008 ZAR currency crisis which Duncan and Liu (2009) estimated to have spanned the period 26 September to 5 November 2008.

The volatility clustering observed in the returns data points to the possibility that the returns data follow a leptokurtic distribution. Leptokurtosis occurs in instances where kurtosis is greater than 3. Leptokurtosis indicates that there are fat tails in the distribution of the variable of interest. Fat tails mean that there is a higher probability of extreme events occurring; for example, large losses or large gains.

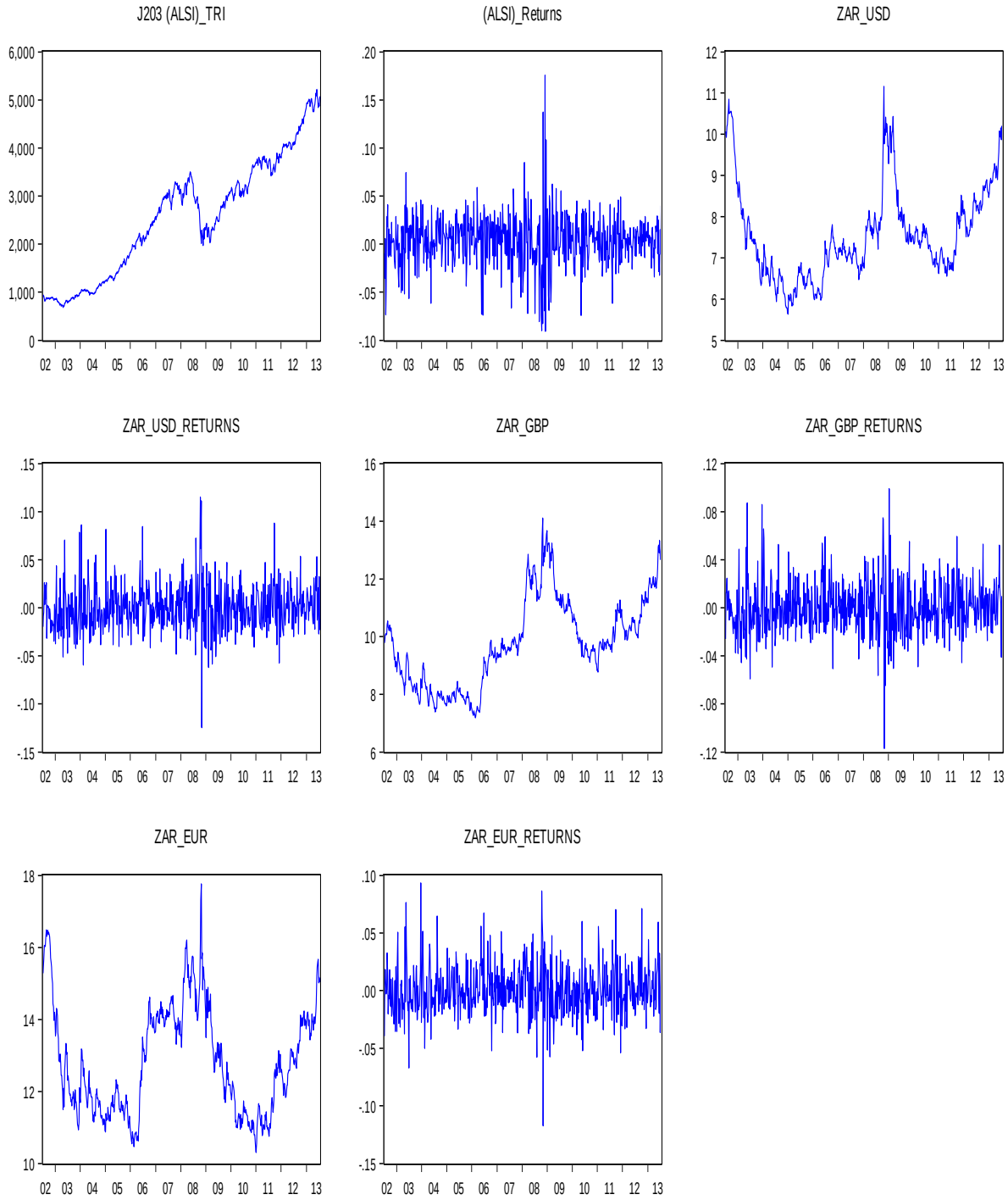

Figure 5: Graphical illustration of market data

Table 3: Summary statistics of key data

	Full period				Pre-2008 Currency Crisis				Post-2008 Currency Crisis			
	ALSI Returns	USD Returns	GBP Returns	EUR Returns	ALSI Returns	USD Returns	GBP Returns	EUR Returns	ALSI Returns	USD Returns	GBP Returns	EUR Returns
Mean	0.003	0.0002	0.0002	0.0007	0.003	-0.001	0.000	0.001	0.0027	0.0012	0.0005	0.0008
Median	0.005	-0.0014	-0.0018	-0.0020	0.006	-0.002	-0.002	-0.002	0.0033	0.0000	-0.0010	-0.0021
Maximum	0.176	0.1149	0.0990	0.0933	0.085	0.086	0.087	0.093	0.1755	0.1149	0.0990	0.0863
Minimum	-0.091	-0.1244	-0.1171	-0.1173	-0.081	-0.059	-0.059	-0.067	-0.0908	-0.1244	-0.1171	-0.1173
Std. Dev.	0.027	0.0248	0.0226	0.0224	0.026	0.023	0.022	0.022	0.0296	0.0264	0.0237	0.0235
Skewness	0.175	0.5104	0.3367	0.2939	-0.520	0.716	0.595	0.590	0.7714	0.2965	0.0621	-0.0173
Kurtosis	7.385	5.6012	5.3837	5.2960	3.927	4.263	4.331	4.494	9.6134	6.5717	6.2466	5.9479

Table 3 provides summary statistics for the returns data. In the full period covered in the study, the Kurtosis for ALSI, ZAR/USD, ZAR/GBP, and the ZAR/EUR was 7.385, 5.6012, 5.3837, and 5.2960 respectively. The contrast between Kurtosis for the pre-crisis period and for the post-crisis period indicates that in the post-2008 currency crisis period the distribution of returns is more leptokurtic than in the pre-crisis period. It is quite clear that there have been large gains and losses during the post-crisis period. The minimum and the maximum figures for all four variables reported in Table 3 all occurred during the post-crisis period. For example the minimum and the maximum weekly return of the ALSI of -0.091 and 0.1755 respectively, were all realised in the post-crisis period.

The mean weekly return for the ALSI is less than the median across the three sample periods. This indicates a negative skewness in the market return data. In other words, the risk of extreme events in the form of large losses or large gains observed from the fact that there is leptokurtosis in the data, is most likely to be on the downside than on the upside. Thus, on a given trading week the probability of making a large loss is more than the probability of making a large gain. The mean weekly return for all three exchange rates however is greater than the median across the three sample periods, indicating a positive skewness. It is reasonable on the basis of simple observation of exchange rate data in Figure 5 to assume that there have been more instances of depreciation of the exchange rate of the ZAR against the major currencies than there have been instances of an appreciation of the exchange rate of the ZAR. This therefore means that positive skewness of the exchange rate returns is to be expected These data fit the predictions from the literature and therefore can be used in the augmented market model as part of the research design adopted in this study

4.3 Results pertaining to the Hypothesis

Table 4: Summary of foreign exchange exposure for South African listed companies

		Full period 7/07/2002 – 21/07/2013	Pre-2008 Currency Crisis 7/07/2002 – 24/09/2008	Post-2008 Currency Crisis 9/12/2008 – 21/07/2013
PANEL A: Direction and Magnitude of exposure to ZAR/US$ exchange rate				
Sample		90 firms	90 firms	90 firms
FX Exposure Coefficient (β_i) :	Mean	-0.067	-0.172	0.007
	Minimum	-0.578	-1.328	-0.992
	Maximum	0.362	0.419	0.697
Significant Exposure:	Number of Firms	31	29	19
	Percentage of Total	34.4%	32.2%	21.1%
Sign of Exposure Coefficient:	Positive	3 (9.7%)	4 (13.8%)	8 (42.1%)
	Negative	28 (90.3%)	25 (86.2%)	11 (57.9%)
PANEL B: Direction and Magnitude of exposure to ZAR/GBP exchange rate				
Sample		90 firms	90 firms	90 firms
FX Exposure Coefficient	Mean	-0.122	-0.221	-0.033
	Minimum	-0.608	-1.659	-0.812
	Maximum	0.710	1.131	0.682
Significant Exposure (β_i):				
	Number of Firms	30	34	21
	Percentage of Total	33.3%	37.8%	23.3%
Sign of Exposure Coefficient (β_i):	Positive	2 (6.7%)	4 (11.8%)	7 (33.3%)
	Negative	28 (93.3%)	30 (88.2%)	14 (66.7%)
PANEL C: Direction and Magnitude of exposure to ZAR/EUR exchange rate				
Sample		90 firms	90 firms	90 firms
FX Exposure Coefficient (β_i)	Mean	-0.432	-0.243	-0.032
	Minimum	-9.020	-1.578	-1.071
	Maximum	2.901	0.745	0.839
Significant Exposure (β_i):				
	Number of Firms	34	40	20
	Percentage of Total	37.8%	44.4%	22.2%
Sign of Exposure Coefficient (β_i)	Positive	2 (5.9%)	0 (0%)	4 (20.0%)
	Negative	32 (94.1%)	40 (100%)	16 (80%)

This table shows a summary of the hypothesis test results of foreign exchange exposure of a sample of 90 nonfinancial firms listed on the JSE. The residual foreign exchange exposure is estimated using the SUR panel regression methods to estimate the augmented market model:

$$R_{i,t} = \alpha_i + \beta_i XR_t + \gamma_i R_{m,t} + \varepsilon_{i,t}$$

Table 4 provides a summary of the results for firm-level foreign exchange exposure for listed nonfinancial firms in South Africa using the augmented market model of Jorion (1990). Individual results for hypothesis tests at the firm

level are reported in Appendix C. Prob(F-statistic) is less than 0.05 and therefore this indicates that there is model fit and that the model can be used to make hypothesis tests.

An important result to note is that of the three currencies used in the study to estimate the foreign exchange risk exposure of nonfinancial firms listed on the JSE, the euro with a 37.8% exposure is the dominant source of foreign exchange risk, followed closely by the US$ with a 34.4% exposure. By comparing and contrasting exposure levels for the pre- and post-2008 currency crisis periods, it becomes apparent that in the period before the 2008 currency crisis, the euro was still the most dominant source of foreign exchange risk, with the GBP being more of a source of foreign exchange risk than the US$. However, in the period after the 2008 currency crisis, the GBP is the dominant source of risk followed by the euro.

Another important result to note is that levels of foreign exchange risk exposure for all three major currencies have declined in the period after the 2008 currency crisis, when compared to the period before that crisis. Foreign exchange risk exposure levels for the euro, the GBP, and the US$ have declined to 22.2%, 23.3%, and 21.1% respectively in the post-2008 currency crisis period.

For the full period (2002 – 2013), among the firms that reported foreign exchange risk exposure, the incidence of negative foreign exchange risk exposure to the euro, GBP, and US$ was 94.1%, 93.3%, and 90.3% respectively. However by contrasting the period before and after the 2008 currency crisis it becomes clear that after the 2008 currency crisis, the incidence of negative foreign exchange risk exposure for the euro, GBP, and US$ declined to 80%, 66.7%, and 57.9% respectively; this is in comparison to negative exposure levels of 100%, 88.2%, and 86.2% in the period before the 2008 currency crisis.

4.4 Summary of the results

In summary the results show that nonfinancial firms listed on the JSE have a higher incidence of negative foreign exchange exposure across all three dominant currencies regardless of the period used to run the model. It is also important to note that in the post-2008 crisis period, lower foreign exchange exposure levels are evident; also, there is a higher incidence of positive foreign exchange exposure levels than in the pre-2008 currency crisis period.

5 CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

This chapter discusses and explains the results of the hypothesis test with particular reference to the relevant literature on foreign exchange exposure.

5.2 Discussion pertaining to the Hypothesis

As illustrated in table 4, the results from this study report levels of foreign exchange risk exposure of nonfinancial firms listed on the JSE as 34.4%, 33.3%, and 37.8% for the US$, GBP, and the euro respectively. These exposure levels are higher than those documented in the literature in the developed market context. As discussed in section 2.3.3, despite the strong theoretical grounds for the foreign exchange risk exposure of firms, Bartram and Bodnar (2007) found limited empirical support for the foreign exchange exposure phenomenon. These authors conducted a survey of the literature in the context of developed countries and found that exposure levels ranged between 10 – 25%.

However as documented by Chen *et al*. (2004), small open economies such as South Africa can be expected to have higher exposure levels due to the fact that in contrast to the developed market context, most firms listed in emerging market stock exchanges have a lower global footprint than their developed market counterparts. Firms with a global footprint generally have a natural operational hedge which allows them to engage in exposure netting as discussed in section 2.3.3. There is also some empirical evidence that suggests that usage of financial derivatives relating to currencies has the effect of reducing foreign exchange risk exposure (Allayannis and Ofek, 2001). Bartram and Bodnar (2007) argue that the usage of currency derivatives is largely found to be more prevalent in multinational firms.

What is surprising however, is that despite the argument of multinationals having both financial and operational hedges, two of the top South African nonfinancial multinational firms, Naspers (NPN) and MTN, have reported significant exposure to all three key currencies utilised in this study and across the two sub-periods (see Appendix C). This may point to a limited or inadequate usage of risk management techniques by these firms. On the contrary, another South African multinational, Sasol (SOL) only reported an exposure to the euro currency and the exposure was positive and not adverse as is the case with NPN and MTN. It is important however to note that both NPN and MTN have a strong presence on the African continent and other emerging market economies: these include China, Spain and Russia in the case of NPN, and Syria and Iran in the case of MTN. Sasol on the other hand has operations in America. This may point to a geo-political dimension to the exchange exposure puzzle in the South African context.

The decline in levels of foreign exchange risk exposure after the 2008 currency crisis can be attributed to the fact that the ZAR has declined in value relative to the US$, GBP, and the euro. Figure 5 in section 4.2 shows that the ZAR has depreciated in value relative to all these three major currencies. South Africa is an export-oriented, small, open economy and therefore a depreciation of the ZAR relative to major currencies makes local manufacturing firms more competitive in the global market place because locally manufactured goods become relatively cheap. Table 4 also shows that the mean foreign exposure coefficient to the US$ is positive in the post-2008 currency crisis period, whilst the magnitude of the adverse mean foreign exposure coefficient to the GBP and the euro have declined. This indicates that the depreciation of the ZAR in the aftermath of the 2008 currency crisis has benefited local nonfinancial firms.

Multinationals also benefit from a depreciation of the ZAR exchange rate because when they translate their foreign-currency denominated profits they receive foreign exchange gains. For example, MTN showed negative foreign exchange risk exposure before the 2008 currency crisis but the magnitude of

the adverse exposure to foreign exchange risk exposure was much lower after that currency crisis. The same pattern is observed for many other multinationals including NPN.

It is also interesting to note that the list of firms with an exposure to foreign exchange risk is dominated by firms in the retail trade sector. Massmart Holdings Limited (MSM), Pick ‘n Pay Stores Limited (PIK), Pick ‘n Pay Holdings Limited (PWK), Rainbow Chicken Limited (RBW), Shoprite Holdings Limited (SHP), Sovereign Food Investments Limited (SOV), The Foschini Group Limited (TFG), Truworths International Limited (TRU), and Woolworths Holdings Limited (WHL) all showed negative exposure to foreign exchange risk.

The lower levels of exposure in the period after the 2008 currency crisis is partly explained by the fact that many of the firms in the retail trade sector that reported negative foreign exchange risk in the full period, showed no exposure to foreign exchange risk exposure in the period after the 2008 currency crisis; of those that did show exposure, their exposure levels were negative but much lower than in the post-crisis period.

For ease of reference, tables 5, 6 and 7 present exposure levels of the retail trade sector firms to demonstrate the contrasting picture in the pre- and post-2008 currency crisis periods. It is also interesting to note that among the retail sector firms, most food retailers (PIK, PWK, RBW) show no exposure to foreign exchange risk in the post-2008 currency crisis period, whilst on the other hand all clothing retailers (TFG, TRU, WHL) show negative exposure and in some instances their exposure levels are even more than in the pre-crisis period. This is hardly surprising because South African clothing retailers are known to import most of their merchandise, and therefore a depreciating currency would inflate their cost structure and thus affect their profit margins. This finding clearly supports the theoretical argument that efficient markets will price-in foreign exchange risk.

Table 5: Retail sector firms' exposure to US$ foreign exchange risk

	US$					
	Full period		**Pre-2008 Currency Crisis**		**Post-2008 Currency Crisis**	
	Exposure	(βi)	Exposure	(βi)	Exposure	(βi)
MSM	Yes	-0.332	Yes	-0.480	No	N/A
PIK	Yes	-0.160	Yes	-0.365	No	N/A
PWK	Yes	-0.128	Yes	-0.207	No	N/A
RBW	Yes	-0.185	Yes	-0.356	No	N/A
SHP	Yes	-0.138	Yes	-0.296	No	N/A
SOV	Yes	-0.279	Yes	-0.422	No	N/A
TFG	Yes	-0.494	Yes	-0.528	Yes	-0.460
TRU	Yes	-0.376	Yes	-0.368	Yes	-0.309
WHL	Yes	-0.332	Yes	-0.289	Yes	-0.316

Table 6: Retail sector firms' exposure to GBP foreign exchange risk

	GBP					
	Full period		**Pre-2008 Currency Crisis**		**Post-2008 Currency Crisis**	
	Exposure	(βi)	Exposure	(βi)	Exposure	(βi)
MSM	Yes	-0.451	Yes	-0.499	Yes	-0.393
PIK	Yes	-0.235	Yes	-0.379	No	N/A
PWK	Yes	-0.170	Yes	-0.232	No	N/A
RBW	Yes	-0.249	Yes	-0.365	No	N/A
SHP	Yes	-0.277	Yes	-0.394	Yes	-0.242
SOV	Yes	-0.394	Yes	-0.754	No	N/A
TFG	Yes	-0.581	Yes	-0.520	Yes	-0.576
TRU	Yes	-0.486	Yes	-0.391	Yes	-0.457
WHL	Yes	-0.435	Yes	-0.345	Yes	-0.438

Table 7: Retail sector firms' exposure to Euro foreign exchange risk

	Euro					
	Full period		**Pre-2008 Currency Crisis**		**Post-2008 Currency Crisis**	
	Exposure	(βi)	Exposure	(βi)	Exposure	(βi)
MSM	Yes	-0.396	Yes	-0.471	Yes	-0.274
PIK	Yes	-0.232	Yes	-0.384	No	N/A
PWK	Yes	-0.175	Yes	-0.223	No	N/A
RBW	Yes	-0.321	Yes	-0.540	No	N/A
SHP	Yes	-3.880	Yes	-0.403	Yes	-0.216
SOV	Yes	-2.092	Yes	-0.506	No	N/A
TFG	Yes	-9.020	Yes	-0.603	Yes	-0.593
TRU	Yes	-6.993	Yes	-0.413	Yes	-0.401
WHL	Yes	-7.193	Yes	-0.325	Yes	-0.528

5.3 Conclusion

In summary: the results show that there is indeed an association between firm value of nonfinancial firms listed on the JSE and changes in the exchange rate.

The results are in line with the exposure levels reported in the literature on studies conducted in the small open economy context (Chen *et al.*, 2004; Hsiao & Han, 2012). The results also show that exposure to foreign exchange risk for the period after the 2008 currency crisis is more favourable to South African nonfinancial firms. Clothing retailers, however, were found to have been the firms most adversely affected by a depreciating currency.

6 CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The chapter begins with the conclusions of the study, followed by recommendations to stakeholders. It ends with suggestions for further research.

6.2 Conclusions of the study

Academic researchers, corporate treasury managers and the investor community have an interest in finding out if there is an association between changes in exchange rates and firm value (Chen *et al.,* 2004). They are also interested in establishing if the effect of changes in exchange rates is reflected in share prices. In the finance literature, this attempt to measure the sensitivity of firm value to movements in exchange rates, as reflected in share prices, is referred to as foreign exchange risk exposure.

This study sought to assess the levels of foreign exchange risk exposure of South African nonfinancial firms using the augmented market model of Jorion (1990). The study further sought to compare and contrast exposure levels of South African nonfinancial firms in the periods before and after the 2008 South African Rand currency crisis. The study identified the US$, the GBP, and the euro as the most important exchange rates in the South African context and sought to identify the most dominant of these three currencies from a foreign exchange risk perspective.

The study established that in the full period (7 July 2002 to 21 July 2013) , out of a sample of 90 nonfinancial firms listed on the JSE, 34.4% had significant exposure to ZAR/US$ foreign exchange risk, 33.3% had significant exposure to ZAR/GBP foreign exchange risk, whilst 37.8% had significant exposure to

ZAR/Euro foreign exchange risk. However exposure levels were found to be much lower in the period after the 2008 currency crisis when compared to the period before that crisis.

The study established that in the post-2008 currency crisis period, out of a sample of 90 nonfinancial firms listed on the JSE, 21.2% had significant exposure to ZAR/US$ foreign exchange risk, 23.3% had significant exposure to ZAR/GBP foreign exchange risk, whilst 22.2% had significant exposure to ZAR/Euro foreign exchange risk. These exposure levels are lower than the pre-2008 crisis period, when 32.2% had significant exposure to ZAR/US$ foreign exchange risk, 37.8% had significant exposure to ZAR/GBP foreign exchange risk, whilst 44.4% had significant exposure to ZAR/Euro foreign exchange risk.

This shows that the euro is the dominant source of foreign exchange risk for nonfinancial firms listed on the JSE. This finding is particularly important because some scholars have long argued that the ZAR/US$ is the most representative exchange rate in the measurement of foreign exchange risk due to the fact that the US Dollar is the principal payment currency for South Africa's international transactions (De Wet & Gebreselasie, 2004: p.25). By measuring economic exposure as opposed to transaction exposure, this study established that the competitive effect is more important in identifying foreign exchange risk than the conversion effect.

6.3 Recommendations

Recommendations to corporate treasury managers

Treasury managers in South African nonfinancial firms listed on the JSE must note that economic exposure is more important than transaction exposure in the assessment of foreign exchange risk exposure in the South African context. The study established that the euro is a more dominant source of foreign exchange risk than the US$. With the US$ being the principal payment currency for South Africa's international transactions, there may be a tendency to engage in

financial hedges that only address the conversion effect without much attention being paid to the competitive effect. By ignoring economic exposure, South African managers may find it hard to stay competitive in the market place.

It is further recommended that corporate treasury managers take note that the nature of foreign exchange risk has changed in the period following the 2008 currency crisis. This may call for treasury managers to revisit their hedging policies. For example, managers at Shoprite Holdings Limited must look at reassessing their hedging policies to ensure that they stay competitive in the market place. Their negative exposure to foreign exchange risk in the post-2008 currency crisis period, while their peers have shown no exposure, may signal the beginning of loss of market share if they do not attend to this under-performance.

Recommendations to risk managers in the investor community

Investment analysts and risk managers in the investor community must take note of the findings of the study and also appreciate the findings of exposure levels for the period after the 2008 currency crisis relative to the period before that crisis. The finding that a depreciation of the ZAR currency relative to major currencies is favourable to valuations of most nonfinancial firms listed on the JSE should help investors with the fundamental analysis of JSE listed firms. For instance, the study established that company valuations of food retailers benefit from a depreciation of the ZAR relative to the three major currencies whilst clothing retailers are adversely affected by the same effect.

6.4 Suggestions for further research

The following suggestions for further research have emerged from the study:

1. As assessment of hedging policies of nonfinancial firms listed on the JSE in the post-2008 crisis period.

2. A formal investigation of the reasons why food retailers have no exposure to foreign exchange risk in the post-2008 crisis period whilst clothing retailers are adversely affected.

3. A formal investigation into the reasons behind MTN and Naspers's negative exposure to foreign exchange risk on the one hand, while Sasol on the other hand is fully hedged against foreign exchange risk despite the fact that these firms are all large multinationals with a significant weighting on the ALSI.

REFERENCES

Adler, M., & Dumas, B. (1984). Exposure to currency risk: definition and measurement. *Financial Management*, 13, 41-50.

Allayannis, G., & Ihrig, J. (2001). Exposure and markups. *Review of Financial Studies*, 14(3), 805-835

Allayannis, G., & Ofek, E. (2001). Exposure rate exposure, hedging, and the use of foreign currency derivatives. *Journal of International Money and Finance*, 20(2), 273-296

Baltagi, C. H. (2001). *Econometric Analysis of Panel Data* (Second ed.). Chichester, West Sussex: John Wiley & Sons.

Barr, G. D. I., Kantor, B. S., & Holdsworth, C. G. (2007). The effect of the rand exchange rate on the JSE Top-40 stocks. *South African Journal of Business Management,* 38(1), 45-58.

Bartram, S. M., & Bodnar, G. M. (2007). The exchange rate exposure puzzle. *Managerial Finance*, 33(9), 642-666.

Bodnar, G. M., & Gentry, W. M. (1993). Exchange rate exposure and industry characteristics: evidence from Canada, Japan, and the USA. *Journal of International Money and Finance*, 12(1), 29-45.

Bodnar, G. M., & Wong, M. F. (2003). Estimating exchange rate exposures: issues in model structure. *Financial management*, 32(1), 35-67.

Brooks, C. (2008). *Introductory econometrics for finance* (*Second ed.*). Cambridge: Cambridge University Press.

Baum, C. F., Caglayan, M., & Barkoulas, J. T. (2001). Exchange rate uncertainty and firm profitability. Journal of Macroeconomics, 23(4), 565-576.

Chen, J., Naylor, M., & Lu, X. (2004). Some insights into the foreign exchange pricing puzzle: evidence from a small open economy. *Pacific-Basin Finance Journal*, 12(1), 41-64.

Chimanga, A., & Kotze, D. (2009). A multivariate analysis of factors affecting stock returns on the JSE. *The African Finance Journal*, 11(2), 80-96.

Copeland, L.S. (1989). Exchange rates and international finance. Workingham, England: Addison-Wesley Publishing Company.

Cuthbertson, K., & Nitzsche, D. (2004). *Quantitative Financial Economics* (*Second ed.*). Chichester, West Sussex: John Wiley & Sons.

Damodaran, A. (2007) Corporate finance theory and practice. New York: Wiley

De Wet, W. A., & Gebreselasie, T. G. (2004). The exchange rate exposure of major commercial banks in South Africa. *The African Finance Journal*, 6(2), 21-35.

Dominguez, K. M. E., & Tesar, L. L. (2006). Exchange rate exposure. *Journal of International Economics*, 68(1), 188-218.

Duncan, A., & Liu, D. (2009). Modelling South African currency crises as structural changes in the volatility of the rand. *South African Journal of Economics*, 77(3), 363-379.

Easterby-Smith, A., Thorpe, R., & Lowe, A. (2002). *Management Research* (Second ed.). London: Sage Publications.

Eun, C. S., & Resnick, B. G. (2009). *International Financial Management.* Boston: McGraw-Hill Irwin.

Franscher, M. (2009). What explains global exchange rate movements during the financial crisis? *Journal of International Money and Finance*, 28, 1390-1407.

Gidlow, R. (2004). Modifications in South African exchange rate policies: 1998-2001. *South African Journal of Economic History*, 19, 18-41.

Hossain, J. (2008, 15 January). *Class 2 Lecture Notes* Retrieved 11th August, 2013, from http://medsci.udel.edu/open/StatClass08/Class2.ppt

Hsiao, C. (2003). *Analysis of Panel Data* (Second ed.). Cambridge: Cambridge University Press.

Hsiao, F. D., & Han, L. (2012). Exchange rate effects on a small open economy: evidence from Taiwanese firms. *The International Journal of Business and Finance Research*, 6(3), 1-12.

Jorion, P. (1990). The exchange-rate exposure of US multinationals. *Journal of Business*, 63, 331-345.

Kodongo, C. O. (2011). *Foreign exchange risk and the flow of international portfolio capital: evidence from Africa's capital markets*. PhD thesis, University of the Witwatersrand, Johannesburg.

Khoo, A. (1994). Estimation of foreign exchange exposure: an application to mining companies in Australia. *Journal of International Money and Finance*, 13(3), 342-363.

Koop, G. (2006). *Analysis of financial data*. West Sussex: Wiley.

Lin, C. H. (2011). Exchange rate exposure in the Asian emerging markets. *Journal of Multinational Financial Management*, 21(4), 224-238.

Mangani, R. (2007). Distributional properties of JSE prices and returns. *Investment Analysts' Journal*, 66, 57-72.

Muller, A., & Verschoor, W. F. C. (2006). Foreign exchange risk exposure: survey and suggestions. *Journal of Multinational Financial Management*, 16(4), 385-410.

Newbold, N. (1995). *Statistics for business and economics* (Fourth ed.). New Jersey: Prentice Hall.

O'Connor, D. J., & Bueso, A. T. (1990). *International Dimensions of Financial Management.* New York: Macmillan.

Page, C., & Meyer. D. (2000). *Applied Research Design for Business and Management*. Roseville: Irwin/McGraw-Hill.

Pantzalis, C., Simkins, B. J., & Laux, P. A. (2001). Operational hedges and the foreign exchange exposure of U.S. multinational corporations. *Journal of International Business Studies*, 32(4), 793-812.

Ross, S. A. (1976). The arbitrage theory of capital asset pricing. *Journal of economic theory*, 13(3), 341-360.

Salifu, Z., Osei, K. A., & Adjasi, C. K. (2007). Foreign exchange risk exposure of listed companies in Ghana. *Journal of Risk Finance*, 8(4), 380-393.

Schumacher, E. J. (2012). *Quantitative Methods Lecture Notes.* Retrieved 11th August 2013 from http://www.trinity.edu/eschumac/HCAI5320/HCAI%205220%20Lecture%20Notes%20On%20Campus%20Sessions%20Fall%2012.docx.

Shin, H.H., & Soenen, L. (1999). Exposure to currency risk by US multinational corporations. *Journal of Multinational Financial Management*, 9(2), 195-207.

Soenen, L. A., & Madura, J. (1991). Foreign exchange management - A strategic approach. *Long Range Planning*, 24(5), 119-124.

Solnik, B. (1983). International arbitrage pricing theory. *The Journal of Finance*, 38(2), 449-457.

SARB (2008, 13 December). Quarterly Bulletin - No 250 - December 2008. Retrieved 18th March, 2014. https://www.resbank.co.za/Research/Rates/Pages/CurrentMarketRates.aspx

Takaendesa, P., Tsheole, T., & Aziakpono, M. (2006), Real exchange rate volatility and its effect on trade flow: new evidence from the South. *Journal of Studies in Economics and Econometrics*, 30(3), 79-97.

Verhoef, G. (2011). The globalisation of South African conglomerates, 1990–2009. *Economic History of Developing Regions*, 26(2), 83-106.

Ward, M., & Muller, C. (2012). Empirical testing of the CAPM on the JSE. *Investment Analysts' Journal*, 76, 1-12.

Williamson, R. (2001). Exchange rate exposure and competition: evidence from the automotive industry. *Journal of Financial Economics*, 59(3), 441-475.

Zellner, A. (1962). An efficient method of estimating seemingly unrelated regressions and tests for aggregation bias. *Journal of the American Statistical Association*, 57(298), 348-368.

APPENDIX A:

Table 7 : LIST OF 90 JSE LISTED COMPANIES INCLUDED IN THE SAMPLE

JSE Code	Company Name
ADH	Advtech Limited
ADR	Adcorp Holdings Limited
AEG	Aveng Limited
AFE	AECI Limited
AFR	Afgri Limited
AFX	African Oxygen Limited
AHL	Ah-Vest Limited
AME	African Media Entertainment Limited
AOO	African & Overseas Enterprises Limited
APK	Astrapak Limited
APN	Aspen Pharmacare Holdings Limited
ARL	Astral Foods Limited
ART	Argent Industrial Limited
ASR	Assore Limited
ATN	Allied Electronics Corporation Limited
BCF	Bowler Metcalf Limited
BDM	Buildmax Limited
BEL	Bell Equipment Limited
BSR	Basil Read Holdings Limited
BVT	The Bidvest Group Ltd
CAT	Caxton and CTP Publishers and Printers Limited
CCL	Compu Clearing Outsourcing Limited
CKS	Crookes Brothers Limited
CMH	Combined Motor Holdings Limited
COM	Comair Limited
CRG	Cargo Carriers Limited
CSB	Cashbuild Limited
CUL	Cullinan Holdings Limited
DAW	Distribution and Warehousing Network Limited
DCT	Datacentrix Holdings Limited
DON	The Don Group Ltd
DST	Distell Group Limited
DTC	Datatec Limited
EOH	EOH Holdings Limited
FBR	Famous Brands Limited
GRT	Growthpoint Properties Limited
ILA	Iliad Africa Limited
ILV	Illovo Sugar Limited

Table 1 (Continued)

JSE Code	Company Name
IPL	Imperial Holdings Limited
ITE	Italtile Limited
IVT	Invicta Holdings Limited
JDG	JD Group Limited
JSC	Jasco Electronics Holdings Limited electronics
KGM	Kagiso Media Limited
MAS	Masonite (Africa) Limited
MDC	Medi-Clinic Corporation Limited
MFL	Metrofile Holdings Limited
MPC	Mr Price Group Limited
MSM	Massmart Holdings Limited
MST	Mustek Limited
MTA	Metair Investments Limited
MTN	MTN Group Limited
MUR	Murray & Roberts Holdings Limited
NCS	Nictus Beperk
NPK	Nampak Limited
NPN	Naspers Limited
NTC	Network Healthcare Holdings Limited
OCE	Oceana Group Limited
OLG	Onelogix Group Limited
OMN	Omnia Holdings Limited
PIK	Pick ‘n Pay Stores Limited
PMM	Premium Properties Limited
PMV	Primeserv Group Limited
PNC	Pinnacle Technology Holdings Limited
PPC	Pretoria Portland Cement Company Limited
PWK	Pick ‘n Pay Holdings Limited
RBW	Rainbow Chicken Limited
RLO	Reunert Limited
RTN	Rex Trueform Clothing Company Limited
SAP	Sappi Limited
SBL	Sable Holdings Limited
SDH	SecureData
SER	Seardel Investment Corporation
SHF	Steinhoff International Holdings
SHP	Shoprite Holdings Limited
SOL	Sasol Limited
SOV	Sovereign Food Investments Limited
SPA	Spanjaard Limited

Table 1 (*Continued*)

JSE Code	Company Name
SPG	Super Group Limited
SUI	Sun International Limited
SUR	Spur Corporation Limited
SYC	Sycom Property Fund Managers Limited
TDH	Tradehold Limited
TFG	The Foschini Group Ltd
TPC	Transpaco Limited
TRE	Trencor Limited
TRU	Truworths International Limited
VLE	Value Group Limited
WBO	Wilson Bayly Holmes - Ovcon Limited
WHL	Woolworths Holdings Limited
WNH	Winhold Limited

APPENDIX B

Consistency matrix

Research Problem	Literature Review	Hypotheses	Source of data	Type of data	Analysis
Investigate the association between unanticipated changes in exchange rates and excess returns of firms listed on the JSE as a method of assessing foreign exchange risk exposure levels of nonfinancial firms in South Africa both for the pre- and post-2008 ZAR currency crisis.	Adler and Dumas (1984) Bodnar and Wong (2003) Baltagi (2001) Hsiao (2003) Bartram and Bodnar (2007) Khoo (1994) Jorion (1990) Zellner (1962)	Null Hypothesis (H_0): Unanticipated changes in foreign exchange rates have no effect on excess returns of firms listed on the JSE. Alternative Hypothesis (H_1): Unanticipated changes in foreign exchange rates have an effect on excess returns of firms listed on the JSE.	JSE data sourced from I-Net Bridge and McGregor BFA	Weekly data of a nominal nature	Seemingly Unrelated Regression methods

APPENDIX C

Summary of Regression Model Results

US$				£			€		
R^2 = 0.115 ; Adjusted R^2 = 0.111 F-Statistic = 25.171; P-value = 0.00				**R2 = 0.117 ; Adjusted R2 = 0.113 F-Statistic = 25.649; P-value = 0.00**			**R^2 = 0.118 ; Adjusted R^2 = 0.113 F-Statistic = 25.594; P-value = 0.00**		
	β_1	P-value	Decision	β_1	P-value	Decision	β_1	P-value	Decision
			H_0: β_1= 0			H_0: β_1 = 0			H_0: β_1 = 0
ADH	-0.217	0.008	Reject	-0.379	0.000	Reject	-0.310	0.001	Reject
ADR	-0.199	0.005	Reject	-0.236	0.002	Reject	-0.253	0.001	Reject
AEG	-0.216	0.003	Reject	-0.275	0.001	Reject	-0.251	0.002	Reject
AFE	0.000	0.997	Accept	-0.068	0.245	Accept	-0.086	0.142	Accept
AFR	-0.082	0.363	Accept	-0.158	0.104	Accept	-0.185	0.060	Accept
AFX	0.004	0.942	Accept	-0.031	0.619	Accept	-0.047	0.461	Accept
AHL	0.362	0.644	Accept	0.710	0.403	Accept	0.642	0.454	Accept
AME	-0.174	0.460	Accept	-0.273	0.286	Accept	-0.106	0.680	Accept
AOO	0.184	0.014	Reject	0.164	0.043	Reject	0.150	0.067	Accept
APK	-0.009	0.903	Accept	-0.073	0.368	Accept	-0.032	0.700	Accept
APN	-0.194	0.007	Reject	-0.313	0.000	Reject	-0.314	0.000	Reject
ARL	-0.057	0.373	Accept	-0.105	0.131	Accept	-0.147	0.035	Reject
ART	-0.019	0.807	Accept	0.030	0.720	Accept	-0.141	0.092	Accept
ASR	-0.073	0.356	Accept	0.036	0.674	Accept	-0.018	0.837	Accept
ATN	0.006	0.927	Accept	-0.005	0.945	Accept	-0.077	0.301	Accept
BCF	0.074	0.245	Accept	-0.033	0.630	Accept	-0.021	0.769	Accept
BDM	0.257	0.234	Accept	0.376	0.108	Accept	0.270	0.253	Accept
BEL	0.026	0.797	Accept	0.098	0.363	Accept	0.119	0.272	Accept
BSR	-0.408	0.381	Accept	-0.398	0.431	Accept	-0.385	0.449	Accept
BVT	-0.103	0.036	Reject	-0.177	0.001	Reject	-0.161	0.003	Reject
CAT	0.021	0.754	Accept	-0.040	0.584	Accept	-0.001	0.991	Accept
CCL	0.104	0.405	Accept	0.042	0.759	Accept	0.070	0.609	Accept
CKS	0.115	0.147	Accept	-0.035	0.686	Accept	-0.030	0.731	Accept
CMH	-0.084	0.307	Accept	-0.146	0.103	Accept	-0.167	0.065	Accept
COM	0.162	0.180	Accept	0.098	0.458	Accept	0.108	0.416	Accept
CRG	0.031	0.738	Accept	-0.006	0.955	Accept	0.020	0.848	Accept
CSB	-0.048	0.524	Accept	-0.043	0.598	Accept	-0.117	0.158	Accept
CUL	-0.578	0.010	Reject	-0.608	0.012	Reject	-0.661	0.007	Reject
DAW	0.160	0.076	Accept	0.103	0.294	Accept	0.043	0.660	Accept
DCT	-0.093	0.271	Accept	-0.104	0.258	Accept	-0.185	0.044	Reject

US$				£			€		
R^2 = 0.115 ; Adjusted R^2 = 0.111 F-Statistic = 25.171; P-value = 0.00				**R2 = 0.117 ; Adjusted R2 = 0.113 F-Statistic = 25.649; P-value = 0.00**			**R^2 = 0.118 ; Adjusted R^2 = 0.113 F-Statistic = 25.594; P-value = 0.00**		
	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**
			H_0: β_i= 0			**H_0: β_1 = 0**			**H_0: β_1 = 0**
DON	0.051	0.804	Accept	-0.031	0.889	Accept	0.019	0.933	Accept
DST	0.099	0.132	Accept	0.005	0.944	Accept	-0.044	0.540	Accept
DTC	0.093	0.250	Accept	0.063	0.473	Accept	0.101	0.255	Accept
EOH	0.055	0.417	Accept	-0.054	0.467	Accept	-0.034	0.648	Accept
FBR	-0.233	0.005	Reject	-0.191	0.033	Reject	-0.362	0.000	Reject
GRT	-0.164	0.002	Reject	-0.170	0.003	Reject	-0.267	0.000	Reject
ILA	0.084	0.352	Accept	0.113	0.247	Accept	0.071	0.472	Accept
ILV	0.159	0.012	Reject	0.032	0.647	Accept	0.099	0.157	Accept
IPL	-0.335	0.000	Reject	-0.504	0.000	Reject	-0.460	0.000	Reject
ITE	0.082	0.311	Accept	0.024	0.785	Accept	-0.005	0.957	Accept
IVT	0.032	0.673	Accept	0.011	0.895	Accept	-0.023	0.781	Accept
JDG	-0.322	0.000	Reject	-0.362	0.000	Reject	-0.374	0.000	Reject
JSC	-0.188	0.083	Accept	-0.212	0.072	Accept	-0.275	0.020	Reject
KGM	0.020	0.775	Accept	0.000	0.999	Accept	-0.043	0.577	Accept
MAS	0.035	0.781	Accept	0.035	0.799	Accept	0.099	0.474	Accept
MDC	0.070	0.216	Accept	-0.052	0.399	Accept	-0.005	0.933	Accept
MFL	0.004	0.987	Accept	-0.126	0.599	Accept	-0.097	0.690	Accept
MPC	-0.329	0.000	Reject	-0.456	0.000	Reject	-0.522	0.000	Reject
MSM	-0.332	0.000	Reject	-0.451	0.000	Reject	-0.396	0.000	Reject
MST	0.027	0.778	Accept	-0.121	0.247	Accept	-0.076	0.470	Accept
MTA	0.038	0.684	Accept	-0.067	0.508	Accept	-0.069	0.501	Accept
MTN	-0.491	0.000	Reject	-0.552	0.000	Reject	-0.544	0.000	Reject
MUR	-0.172	0.021	Reject	-0.145	0.076	Accept	-0.118	0.150	Accept
NCS	-0.209	0.599	Accept	-0.427	0.323	Accept	-0.413	0.342	Accept
NPK	-0.053	0.308	Accept	-0.126	0.025	Reject	-0.152	0.007	Reject
NPN	-0.126	0.046	Reject	-0.240	0.000	Reject	-0.242	0.000	Reject
NTC	-0.072	0.217	Accept	-0.128	0.043	Reject	-0.134	0.035	Reject
OCE	0.085	0.203	Accept	0.020	0.778	Accept	-0.011	0.876	Accept
OLG	0.160	0.503	Accept	0.040	0.878	Accept	0.249	0.340	Accept
OMN	-0.025	0.735	Accept	-0.054	0.507	Accept	-0.050	0.539	Accept
PIK	-0.160	0.003	Reject	-0.235	0.000	Reject	-0.232	0.000	Reject
PMM	-0.233	0.003	Reject	-0.187	0.031	Reject	-0.248	0.004	Reject
PMV	-0.120	0.561	Accept	-0.288	0.200	Accept	-0.315	0.163	Accept
PNC	-0.196	0.316	Accept	-0.408	0.055	Accept	-0.453	0.034	Reject
PPC	-0.242	0.000	Reject	-0.369	0.000	Reject	-0.304	0.000	Reject
PWK	-0.128	0.008	Reject	-0.170	0.001	Reject	-0.175	0.001	Reject

US$				£			€		
R^2 = 0.115 ; Adjusted R^2 = 0.111 F-Statistic = 25.171; P-value = 0.00				R2 = 0.117 ; Adjusted R2 = 0.113 F-Statistic = 25.649; P-value = 0.00			R^2 = 0.118 ; Adjusted R^2 = 0.113 F-Statistic = 25.594; P-value = 0.00		
	β_1	P-value	Decision	β_1	P-value	Decision	β_1	P-value	Decision
			H_0: β_1 = 0			H_0: β_1 = 0			H_0: β_1 = 0
RBW	-0.185	0.006	Reject	-0.249	0.001	Reject	-0.321	0.000	Reject
RLO	-0.154	0.007	Reject	-0.194	0.002	Reject	-0.191	0.002	Reject
RTN	-0.136	0.727	Accept	-0.083	0.844	Accept	0.016	0.969	Accept
SAP	0.225	0.009	Reject	0.120	0.199	Accept	0.134	0.153	Accept
SBL	-0.072	0.504	Accept	-0.140	0.229	Accept	-0.186	0.113	Accept
SDH	-0.031	0.815	Accept	-0.158	0.270	Accept	-0.211	0.144	Accept
SER	-0.024	0.854	Accept	-0.094	0.507	Accept	-0.082	0.567	Accept
SHF	-0.233	0.792	Accept	-0.019	0.728	Accept	-0.086	0.220	Accept
SHP	-0.138	0.023	Reject	-0.277	0.000	Reject	-3.880	0.000	Reject
SOL	0.065	0.260	Accept	0.082	0.192	Accept	1.958	0.050	Reject
SOV	-0.279	0.022	Reject	-0.394	0.003	Reject	-2.092	0.036	Reject
SPG	0.165	0.191	Accept	0.129	0.348	Accept	0.515	0.606	Accept
SUI	0.041	0.681	Accept	-0.168	0.123	Accept	-0.751	0.453	Accept
SUR	-0.035	0.550	Accept	-0.117	0.066	Accept	-1.631	0.103	Accept
SYC	-0.102	0.050	Reject	-0.162	0.004	Reject	-2.080	0.038	Reject
TDH	0.149	0.262	Accept	-0.030	0.837	Accept	0.489	0.625	Accept
TFG	-0.494	0.000	Reject	-0.581	0.000	Reject	-9.020	0.000	Reject
TPC	-0.168	0.169	Accept	-0.184	0.167	Accept	-1.124	0.261	Accept
TRE	0.293	0.000	Reject	0.254	0.000	Reject	2.901	0.004	Reject
TRU	-0.376	0.000	Reject	-0.486	0.000	Reject	-6.993	0.000	Reject
VLE	0.043	0.685	Accept	0.021	0.856	Accept	0.052	0.959	Accept
WBO	-0.048	0.405	Accept	-0.064	0.303	Accept	-0.880	0.379	Accept
WHL	-0.332	0.000	Reject	-0.435	0.000	Reject	-7.193	0.000	Reject
WNH	-0.147	0.169	Accept	-0.135	0.245	Accept	-0.207	0.836	Accept

Pre-2008 currency crisis: 7/07/2002 – 24/09/2008

US$				£			€		
R^2 = 0.109 ; Adjusted R^2 = 0.100 F-Statistic = 13.118; P-value = 0.00				**R2 = 0.109 ; Adjusted R2 = 0.101 F-Statistic = 13.246; P-value = 0.00**			**R^2 = 0.111 ; Adjusted R^2 = 0.103 F-Statistic = 13.435; P-value = 0.00**		
	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**
			H_0: β_1 = 0			**H_0: β_1 = 0**			**H_0: β_1 = 0**
ADH	-0.525	0.000	Reject	-0.744	0.000	Reject	-0.709	0.000	Reject
ADR	-0.391	0.000	Reject	-0.335	0.001	Reject	-0.439	0.000	Reject
AEG	-0.182	0.077	Accept	-0.278	0.013	Reject	-0.233	0.038	Reject
AFE	-0.125	0.116	Accept	-0.193	0.026	Reject	-0.197	0.023	Reject
AFR	0.101	0.385	Accept	0.018	0.888	Accept	-0.078	0.540	Accept
AFX	-0.110	0.183	Accept	-0.206	0.022	Reject	-0.282	0.002	Reject
AHL	0.419	0.771	Accept	1.131	0.473	Accept	0.745	0.637	Accept
AME	-0.230	0.596	Accept	-0.471	0.322	Accept	-0.137	0.773	Accept
AOO	-0.035	0.715	Accept	0.034	0.748	Accept	-0.060	0.567	Accept
APK	-0.214	0.049	Reject	-0.229	0.054	Reject	-0.221	0.064	Accept
APN	-0.351	0.001	Reject	-0.461	0.000	Reject	-0.490	0.000	Reject
ARL	-0.248	0.014	Reject	-0.258	0.020	Reject	-0.355	0.001	Reject
ART	-0.077	0.495	Accept	-0.096	0.441	Accept	-0.266	0.031	Reject
ASR	0.061	0.618	Accept	0.090	0.505	Accept	-0.027	0.839	Accept
ATN	-0.094	0.314	Accept	-0.245	0.016	Reject	-0.211	0.038	Reject
BCF	-0.093	0.282	Accept	-0.175	0.063	Accept	-0.180	0.056	Accept
BDM	0.261	0.470	Accept	0.445	0.260	Accept	0.419	0.290	Accept
BEL	-0.068	0.569	Accept	-0.031	0.813	Accept	-0.040	0.760	Accept
BSR	-1.328	0.103	Accept	-1.659	0.063	Accept	-1.578	0.078	Accept
BVT	-0.167	0.021	Reject	-0.186	0.019	Reject	-0.183	0.021	Reject
CAT	-0.108	0.296	Accept	-0.086	0.449	Accept	-0.115	0.310	Accept
CCL	-0.316	0.066	Accept	-0.338	0.072	Accept	-0.283	0.134	Accept
CKS	-0.070	0.468	Accept	-0.128	0.225	Accept	-0.180	0.088	Accept
CMH	-0.040	0.744	Accept	-0.175	0.194	Accept	-0.208	0.123	Accept
COM	-0.006	0.974	Accept	-0.076	0.705	Accept	-0.230	0.254	Accept
CRG	-0.237	0.116	Accept	-0.230	0.164	Accept	-0.169	0.307	Accept
CSB	-0.053	0.664	Accept	-0.115	0.385	Accept	-0.222	0.093	Accept
CUL	0.105	0.638	Accept	-0.020	0.935	Accept	-0.042	0.862	Accept
DAW	-0.187	0.139	Accept	-0.259	0.062	Accept	-0.348	0.012	Reject
DCT	-0.099	0.400	Accept	-0.175	0.174	Accept	-0.234	0.068	Accept
DON	0.220	0.471	Accept	-0.078	0.815	Accept	0.001	0.998	Accept
DST	-0.055	0.594	Accept	-0.195	0.082	Accept	-0.219	0.051	Reject
DTC	0.211	0.088	Accept	0.191	0.161	Accept	0.131	0.336	Accept
EOH	-0.070	0.470	Accept	-0.125	0.238	Accept	-0.188	0.075	Accept

US$				£			€		
R^2 = 0.109 ; Adjusted R^2 = 0.100 F-Statistic = 13.118; P-value = 0.00				**R2 = 0.109 ; Adjusted R2 = 0.101 F-Statistic = 13.246; P-value = 0.00**			**R^2 = 0.111 ; Adjusted R^2 = 0.103 F-Statistic = 13.435; P-value = 0.00**		
	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**
			H_0: β_1 = 0			**H_0: β_1 = 0**			**H_0: β_1 = 0**
FBR	-0.294	0.028	Reject	-0.230	0.118	Accept	-0.480	0.001	Reject
GRT	-0.242	0.004	Reject	-0.208	0.023	Reject	-0.365	0.000	Reject
ILA	0.004	0.975	Accept	-0.049	0.707	Accept	-0.029	0.823	Accept
ILV	0.140	0.126	Accept	0.079	0.433	Accept	0.087	0.386	Accept
IPL	-0.386	0.000	Reject	-0.466	0.000	Reject	-0.499	0.000	Reject
ITE	-0.172	0.105	Accept	-0.228	0.050	Reject	-0.300	0.010	Reject
IVT	-0.036	0.741	Accept	-0.100	0.398	Accept	-0.103	0.383	Accept
JDG	-0.423	0.000	Reject	-0.426	0.000	Reject	-0.498	0.000	Reject
JSC	-0.291	0.076	Accept	-0.250	0.164	Accept	-0.253	0.159	Accept
KGM	-0.145	0.111	Accept	-0.171	0.087	Accept	-0.191	0.056	Accept
MAS	-0.089	0.586	Accept	-0.187	0.296	Accept	-0.265	0.138	Accept
MDC	-0.094	0.253	Accept	-0.156	0.083	Accept	-0.175	0.052	Reject
MFL	-0.465	0.247	Accept	-0.596	0.175	Accept	-0.596	0.175	Accept
MPC	-0.328	0.001	Reject	-0.366	0.000	Reject	-0.459	0.000	Reject
MSM	-0.480	0.000	Reject	-0.499	0.000	Reject	-0.471	0.000	Reject
MST	0.030	0.771	Accept	-0.045	0.694	Accept	-0.149	0.189	Accept
MTA	-0.235	0.047	Reject	-0.467	0.000	Reject	-0.442	0.001	Reject
MTN	-0.510	0.000	Reject	-0.532	0.000	Reject	-0.546	0.000	Reject
MUR	-0.127	0.203	Accept	-0.119	0.279	Accept	-0.077	0.484	Accept
NCS	-0.865	0.227	Accept	-1.014	0.196	Accept	-0.832	0.290	Accept
NPK	-0.161	0.022	Reject	-0.221	0.004	Reject	-0.260	0.001	Reject
NPN	-0.305	0.001	Reject	-0.363	0.001	Reject	-0.399	0.000	Reject
NTC	-0.074	0.405	Accept	-0.143	0.140	Accept	-0.207	0.033	Reject
OCE	-0.043	0.624	Accept	-0.135	0.156	Accept	-0.127	0.182	Accept
OLG	-0.028	0.947	Accept	0.113	0.806	Accept	0.388	0.399	Accept
OMN	-0.125	0.249	Accept	-0.077	0.518	Accept	-0.151	0.206	Accept
PIK	-0.365	0.000	Reject	-0.379	0.000	Reject	-0.384	0.000	Reject
PMM	-0.348	0.009	Reject	-0.306	0.037	Reject	-0.311	0.034	Reject
PMV	-0.042	0.849	Accept	-0.028	0.906	Accept	0.024	0.921	Accept
PNC	-0.212	0.548	Accept	-0.597	0.120	Accept	-0.649	0.092	Accept
PPC	-0.355	0.000	Reject	-0.429	0.000	Reject	-0.414	0.000	Reject
PWK	-0.207	0.002	Reject	-0.232	0.001	Reject	-0.223	0.002	Reject
RBW	-0.356	0.001	Reject	-0.365	0.001	Reject	-0.540	0.000	Reject
RLO	-0.245	0.003	Reject	-0.256	0.004	Reject	-0.264	0.003	Reject
RTN	-0.141	0.326	Accept	-0.302	0.053	Reject	-0.304	0.052	Reject
SAP	0.364	0.000	Reject	0.258	0.016	Reject	0.219	0.041	Accept

US$				£			€		
R^2 = 0.109 ; Adjusted R^2 = 0.100 F-Statistic = 13.118; P-value = 0.00				**R2 = 0.109 ; Adjusted R2 = 0.101 F-Statistic = 13.246; P-value = 0.00**			**R^2 = 0.111 ; Adjusted R^2 = 0.103 F-Statistic = 13.435; P-value = 0.00**		
	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**
			H_0: β_1 = 0			**H_0: β_1 = 0**			**H_0: β_1 = 0**
SBL	-0.166	0.223	Accept	-0.184	0.217	Accept	-0.261	0.079	Accept
SDH	-0.128	0.378	Accept	-0.220	0.168	Accept	-0.240	0.132	Accept
SER	-0.291	0.084	Accept	-0.355	0.054	Reject	-0.350	0.058	Accept
SHF	0.015	0.874	Accept	0.006	0.954	Accept	-0.107	0.287	Accept
SHP	-0.296	0.001	Reject	-0.394	0.000	Reject	-0.403	0.000	Reject
SOL	0.103	0.259	Accept	0.009	0.931	Accept	0.131	0.189	Accept
SOV	-0.422	0.032	Reject	-0.754	0.000	Reject	-0.506	0.019	Reject
SPG	-0.008	0.964	Accept	-0.012	0.949	Accept	-0.121	0.519	Accept
SUI	-0.144	0.180	Accept	-0.215	0.067	Accept	-0.223	0.057	Accept
SUR	-0.066	0.453	Accept	-0.130	0.177	Accept	-0.193	0.044	Reject
SYC	-0.204	0.003	Reject	-0.241	0.001	Reject	-0.225	0.003	Reject
TDH	-0.028	0.861	Accept	-0.057	0.743	Accept	-0.064	0.711	Accept
TFG	-0.528	0.000	Reject	-0.520	0.000	Reject	-0.603	0.000	Reject
TPC	-0.491	0.016	Accept	-0.384	0.086	Accept	-0.458	0.040	Reject
TRE	0.147	0.102	Accept	0.015	0.880	Accept	-0.007	0.943	Accept
TRU	-0.368	0.000	Reject	-0.391	0.000	Reject	-0.413	0.000	Reject
VLE	-0.287	0.109	Accept	-0.214	0.277	Accept	-0.213	0.279	Accept
WBO	-0.081	0.325	Accept	-0.117	0.193	Accept	-0.123	0.171	Accept
WHL	-0.289	0.001	Reject	-0.345	0.000	Reject	-0.325	0.001	Reject
WNH	-0.222	0.147	Accept	-0.219	0.194	Accept	-0.073	0.664	Accept

Post-2008 currency crisis: 9/09/2002 – 21/07/2013

US$				£			€		
R^2 = 0.175 ; Adjusted R^2 = 0.164 F-Statistic = 16.938; P-value = 0.00				**R2 = 0.175 ; Adjusted R2 = 0.165 F-Statistic = 16.966; P-value = 0.00**			**R^2 = 0.176 ; Adjusted R^2 = 0.166 F-Statistic = 17.123; P-value = 0.00**		
	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**
			H_0: β_1 = 0			**H_0: β_1 = 0**			**H_0: β_1 = 0**
ADH	-0.067	0.503	Accept	-0.149	0.142	Accept	-0.037	0.718	Accept
ADR	-0.037	0.776	Accept	-0.173	0.194	Accept	-0.122	0.369	Accept
AEG	-0.137	0.218	Accept	-0.126	0.264	Accept	-0.055	0.631	Accept
AFE	0.188	0.019	Reject	0.097	0.234	Accept	0.083	0.318	Accept
AFR	-0.456	0.003	Reject	-0.480	0.002	Reject	-0.340	0.034	Reject
AFX	0.127	0.171	Accept	0.162	0.083	Accept	0.224	0.018	Reject
AHL	0.697	0.082	Accept	0.682	0.095	Accept	0.839	0.043	Reject
AME	-0.051	0.646	Accept	0.000	0.999	Accept	0.024	0.836	Accept

	US$			£			€		
	R^2 = 0.175 ; Adjusted R^2 = 0.164 F-Statistic = 16.938; P-value = 0.00			**R2 = 0.175 ; Adjusted R2 = 0.165 F-Statistic = 16.966; P-value = 0.00**			**R^2 = 0.176 ; Adjusted R^2 = 0.166 F-Statistic = 17.123; P-value = 0.00**		
	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**
			H_0: β_1 = 0			**H_0: β_1 = 0**			**H_0: β_1 = 0**
AOO	0.432	0.002	Reject	0.280	0.054	Reject	0.356	0.016	Accept
APK	0.004	0.970	Accept	-0.085	0.475	Accept	-0.029	0.812	Accept
APN	-0.061	0.604	Accept	-0.166	0.167	Accept	-0.163	0.182	Accept
ARL	0.117	0.168	Accept	-0.035	0.685	Accept	0.030	0.730	Accept
ART	0.118	0.304	Accept	0.155	0.185	Accept	-0.031	0.796	Accept
ASR	-0.024	0.821	Accept	0.095	0.375	Accept	0.213	0.050	Reject
ATN	0.154	0.181	Accept	0.332	0.004	Reject	0.071	0.556	Accept
BCF	0.111	0.310	Accept	-0.019	0.865	Accept	-0.005	0.966	Accept
BDM	0.601	0.018	Reject	0.596	0.021	Reject	0.363	0.172	Accept
BEL	0.160	0.407	Accept	0.150	0.442	Accept	0.224	0.261	Accept
BSR	0.022	0.876	Accept	0.108	0.449	Accept	-0.036	0.802	Accept
BVT	-0.147	0.049	Reject	-0.244	0.001	Reject	-0.236	0.002	Reject
CAT	0.075	0.427	Accept	-0.014	0.882	Accept	0.084	0.394	Accept
CCL	0.259	0.221	Accept	0.223	0.301	Accept	0.192	0.382	Accept
CKS	0.182	0.249	Accept	-0.081	0.614	Accept	-0.025	0.879	Accept
CMH	-0.028	0.814	Accept	-0.076	0.536	Accept	-0.093	0.458	Accept
COM	0.131	0.465	Accept	0.053	0.770	Accept	0.252	0.174	Accept
CRG	0.247	0.039	Reject	0.234	0.055	Accept	0.144	0.247	Accept
CSB	0.017	0.864	Accept	0.059	0.551	Accept	0.023	0.823	Accept
CUL	-0.599	0.170	Accept	0.010	0.981	Accept	-0.310	0.494	Accept
DAW	0.399	0.005	Reject	0.285	0.050	Reject	0.213	0.151	Accept
DCT	-0.336	0.018	Accept	-0.135	0.356	Accept	-0.291	0.049	Reject
DON	-0.177	0.578	Accept	0.171	0.598	Accept	0.236	0.474	Accept
DST	0.136	0.135	Accept	0.121	0.194	Accept	-0.006	0.953	Accept
DTC	0.014	0.900	Accept	-0.050	0.658	Accept	0.135	0.239	Accept
EOH	0.036	0.749	Accept	-0.140	0.220	Accept	-0.028	0.808	Accept
FBR	-0.022	0.835	Accept	0.057	0.588	Accept	-0.089	0.412	Accept
GRT	-0.114	0.131	Accept	-0.147	0.055	Accept	-0.201	0.009	Reject
ILA	0.089	0.582	Accept	0.214	0.193	Accept	0.025	0.883	Accept
ILV	0.199	0.044	Reject	-0.014	0.893	Accept	0.099	0.337	Accept
IPL	-0.343	0.001	Reject	-0.565	0.000	Reject	-0.434	0.000	Reject
ITE	0.146	0.319	Accept	0.174	0.244	Accept	0.145	0.341	Accept
IVT	0.158	0.213	Accept	0.187	0.145	Accept	0.079	0.548	Accept
JDG	-0.158	0.126	Accept	-0.176	0.094	Accept	-0.152	0.157	Accept
JSC	-0.063	0.682	Accept	-0.037	0.813	Accept	-0.194	0.225	Accept
KGM	-0.047	0.651	Accept	-0.021	0.842	Accept	-0.112	0.296	Accept

	US$			£			€		
	R^2 = 0.175 ; Adjusted R^2 = 0.164 F-Statistic = 16.938; P-value = 0.00			**R2 = 0.175 ; Adjusted R2 = 0.165 F-Statistic = 16.966; P-value = 0.00**			**R^2 = 0.176 ; Adjusted R^2 = 0.166 F-Statistic = 17.123; P-value = 0.00**		
	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**
			H_0: β_1 = 0			**H_0: β_1 = 0**			**H_0: β_1 = 0**
MAS	0.149	0.538	Accept	0.290	0.236	Accept	0.568	0.022	Reject
MDC	0.120	0.166	Accept	-0.040	0.648	Accept	0.081	0.369	Accept
MFL	0.195	0.111	Accept	0.133	0.287	Accept	0.109	0.393	Accept
MPC	-0.282	0.008	Reject	-0.411	0.000	Reject	-0.492	0.000	Reject
MSM	-0.167	0.068	Accept	-0.393	0.000	Reject	-0.274	0.004	Reject
MST	0.037	0.856	Accept	-0.129	0.534	Accept	0.116	0.582	Accept
MTA	0.028	0.848	Accept	0.054	0.718	Accept	-0.023	0.882	Accept
MTN	-0.184	0.031	Reject	-0.240	0.005	Reject	-0.198	0.025	Reject
MUR	-0.047	0.712	Accept	-0.027	0.834	Accept	0.071	0.587	Accept
NCS	0.639	0.030	Reject	0.195	0.517	Accept	0.026	0.933	Accept
NPK	0.027	0.748	Accept	-0.002	0.978	Accept	-0.060	0.496	Accept
NPN	0.006	0.949	Accept	-0.190	0.050	Reject	-0.165	0.097	Accept
NTC	-0.079	0.341	Accept	-0.204	0.015	Reject	-0.109	0.204	Accept
OCE	0.130	0.258	Accept	0.112	0.339	Accept	-0.006	0.960	Accept
OLG	0.003	0.987	Accept	-0.318	0.134	Accept	-0.199	0.359	Accept
OMN	0.131	0.248	Accept	0.061	0.596	Accept	0.157	0.182	Accept
PIK	-0.005	0.947	Accept	-0.089	0.279	Accept	-0.110	0.186	Accept
PMM	0.018	0.839	Accept	-0.033	0.715	Accept	-0.160	0.079	Accept
PMV	-0.992	0.007	Reject	-0.812	0.030	Reject	-1.071	0.005	Reject
PNC	-0.380	0.006	Reject	-0.376	0.007	Reject	-0.460	0.001	Reject
PPC	-0.135	0.190	Accept	-0.244	0.018	Reject	-0.122	0.252	Accept
PWK	-0.014	0.873	Accept	-0.064	0.457	Accept	-0.102	0.246	Accept
RBW	0.124	0.173	Accept	0.031	0.738	Accept	0.050	0.598	Accept
RLO	0.022	0.815	Accept	-0.029	0.755	Accept	-0.002	0.984	Accept
RTN	-0.731	0.478	Accept	-0.045	0.966	Accept	0.160	0.881	Accept
SAP	0.241	0.150	Accept	0.127	0.457	Accept	0.140	0.421	Accept
SBL	-0.213	0.310	Accept	-0.280	0.189	Accept	-0.336	0.122	Accept
SDH	0.061	0.827	Accept	-0.256	0.367	Accept	-0.455	0.115	Accept
SER	0.412	0.056	Accept	0.310	0.159	Accept	0.148	0.511	Accept
SHF	-0.022	0.826	Accept	0.020	0.845	Accept	-0.046	0.663	Accept
SHP	-0.103	0.259	Accept	-0.242	0.009	Reject	-0.216	0.021	Reject
SOL	0.192	0.006	Reject	0.275	0.000	Reject	0.245	0.001	Reject
SOV	-0.008	0.962	Accept	0.039	0.813	Accept	0.010	0.954	Accept
SPG	0.028	0.892	Accept	0.082	0.695	Accept	0.002	0.993	Accept
SUI	0.175	0.409	Accept	-0.357	0.096	Accept	-0.117	0.594	Accept
SUR	-0.048	0.604	Accept	-0.089	0.339	Accept	-0.017	0.857	Accept

US$				£			€		
R^2 = 0.175 ; Adjusted R^2 = 0.164 F-Statistic = 16.938; P-value = 0.00				**R2 = 0.175 ; Adjusted R2 = 0.165 F-Statistic = 16.966; P-value = 0.00**			**R^2 = 0.176 ; Adjusted R^2 = 0.166 F-Statistic = 17.123; P-value = 0.00**		
	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**	β_1	**P-value**	**Decision**
			H_0: β_1 = 0			**H_0: β_1 = 0**			**H_0: β_1 = 0**
SYC	-0.080	0.372	Accept	-0.149	0.100	Accept	-0.065	0.483	Accept
TDH	0.282	0.295	Accept	0.024	0.930	Accept	0.239	0.393	Accept
TFG	-0.460	0.000	Reject	-0.576	0.000	Reject	-0.593	0.000	Reject
TPC	-0.101	0.462	Accept	-0.180	0.196	Accept	-0.026	0.858	Accept
TRE	0.383	0.000	Reject	0.457	0.000	Reject	0.324	0.003	Reject
TRU	-0.309	0.001	Reject	-0.457	0.000	Reject	-0.401	0.000	Reject
VLE	0.154	0.135	Accept	0.087	0.407	Accept	0.014	0.897	Accept
WBO	-0.036	0.704	Accept	-0.058	0.545	Accept	0.006	0.952	Accept
WHL	-0.316	0.001	Reject	-0.438	0.000	Reject	-0.528	0.000	Reject
WNH	-0.200	0.235	Accept	-0.087	0.612	Accept	-0.053	0.763	Accept

Model Output for ZAR/US$ exchange rate

Dependent Variable: RETURNS?
Method: Pooled EGLS (Cross-section SUR)
Date: 10/15/13 Time: 20:49
Sample: 7/07/2002 7/21/2013
Included observations: 577
Cross-sections included: 90
Total pool (balanced) observations: 51930
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_ADH--C	-2.250667	0.453901	-4.958495	0.0000
_ADR--C	-3.145140	0.389153	-8.082018	0.0000
_AEG--C	-1.314134	0.403923	-3.253429	0.0011
_AFE--C	-2.097239	0.297595	-7.047280	0.0000
_AFR--C	-1.450223	0.498649	-2.908306	0.0036
_AFX--C	-3.214393	0.323006	-9.951485	0.0000
_AHL--C	-6.098309	4.346548	-1.403023	0.1606
_AME--C	-3.371984	1.306898	-2.580144	0.0099
_AOO--C	-3.823893	0.414123	-9.233713	0.0000
_APK--C	-3.525433	0.415506	-8.484668	0.0000
_APN--C	-2.108022	0.395537	-5.329517	0.0000
_ARL--C	-2.997672	0.356305	-8.413219	0.0000
_ART--C	-2.597406	0.425353	-6.106473	0.0000
_ASR--C	-1.438088	0.436049	-3.297994	0.0010
_ATN--C	-2.336352	0.377492	-6.189148	0.0000
_BCF--C	-3.707662	0.354838	-10.44887	0.0000
_BDM--C	-2.044624	1.198485	-1.706006	0.0880

_BEL--C	-1.919696	0.551365	-3.481713	0.0005
_BSR--C	10.23196	2.584771	3.958556	0.0001
_BVT--C	-1.603411	0.272175	-5.891107	0.0000
_CAT--C	-2.913438	0.374444	-7.780695	0.0000
_CCL--C	-2.168533	0.691886	-3.134232	0.0017
_CKS--C	-3.798782	0.438267	-8.667744	0.0000
_CMH--C	-2.534818	0.458719	-5.525858	0.0000
_COM--C	-2.954948	0.671277	-4.401978	0.0000
_CRG--C	-3.813558	0.518882	-7.349570	0.0000
_CSB--C	-3.264626	0.419958	-7.773694	0.0000
_CUL--C	-0.057632	1.239681	-0.046490	0.9629
_DAW--C	-3.056479	0.499544	-6.118537	0.0000
_DCT--C	-1.554460	0.469229	-3.312797	0.0009
_DON--C	-1.382197	1.129605	-1.223610	0.2211
_DST--C	-2.929524	0.366581	-7.991484	0.0000
_DTC--C	-0.183209	0.449081	-0.407964	0.6833
_EOH--C	-2.651042	0.378499	-7.004095	0.0000
_FBR--C	-2.551442	0.456515	-5.588955	0.0000
_GRT--C	-2.746912	0.294583	-9.324748	0.0000
_ILA--C	-3.053994	0.500420	-6.102859	0.0000
_ILV--C	-2.657960	0.352679	-7.536490	0.0000
_IPL--C	-1.142228	0.351686	-3.247862	0.0012
_ITE--C	-3.409327	0.451830	-7.545596	0.0000
_IVT--C	-2.756277	0.420498	-6.554795	0.0000
_JDG--C	-2.283078	0.383505	-5.953186	0.0000
_JSC--C	0.175902	0.602368	0.292017	0.7703
_KGM--C	-3.516285	0.388384	-9.053627	0.0000
_MAS--C	-4.073096	0.703656	-5.788474	0.0000
_MDC--C	-2.725680	0.315866	-8.629223	0.0000
_MFL--C	-0.440333	1.228150	-0.358534	0.7199
_MPC--C	-1.563179	0.368774	-4.238856	0.0000
_MSM--C	-2.279755	0.350622	-6.502022	0.0000
_MST--C	-1.690764	0.536775	-3.149856	0.0016
_MTA--C	-3.149406	0.518195	-6.077646	0.0000
_MTN--C	-0.502936	0.384210	-1.309013	0.1905
_MUR--C	-1.303359	0.415838	-3.134291	0.0017
_NCS--C	0.961755	2.209668	0.435249	0.6634
_NPK--C	-1.974487	0.288406	-6.846203	0.0000
_NPN--C	-1.095674	0.350513	-3.125919	0.0018
_NTC--C	-1.408947	0.324270	-4.344983	0.0000
_OCE--C	-3.189200	0.370157	-8.615814	0.0000
_OLG--C	2.124516	1.325457	1.602856	0.1090
_OMN--C	-2.664303	0.413061	-6.450140	0.0000
_PIK--C	-2.796161	0.296343	-9.435557	0.0000
_PMM--C	-3.695781	0.442516	-8.351754	0.0000
_PMV--C	6.708915	1.148549	5.841209	0.0000
_PNC--C	-0.433016	1.086579	-0.398513	0.6903
_PPC--C	-2.348224	0.355421	-6.606890	0.0000
_PWK--C	-2.526113	0.266335	-9.484729	0.0000
_RBW--C	-3.165919	0.370633	-8.541925	0.0000
_RLO--C	-1.805582	0.316269	-5.709009	0.0000
_RTN--C	-3.648770	2.162485	-1.687305	0.0916
_SAP--C	-0.325152	0.474948	-0.684605	0.4936
_SBL--C	-3.607968	0.595508	-6.058642	0.0000
_SDH--C	-1.515151	0.734733	-2.062181	0.0392
_SER--C	-2.413775	0.727100	-3.319729	0.0009
_SHF--C	-0.713008	0.357054	-1.996922	0.0458
_SHP--C	-2.123685	0.335868	-6.322985	0.0000

_SOL--C	0.999958	0.321340	3.111836	0.0019
_SOV--C	-2.974301	0.677369	-4.390963	0.0000
_SPA--C	-2.081575	0.701496	-2.967339	0.0030
_SPG--C	-1.496554	0.558593	-2.679147	0.0074
_SUI--C	-2.580888	0.327871	-7.871653	0.0000
_SYC--C	-3.771581	0.289348	-13.03477	0.0000
_TDH--C	-3.338003	0.737932	-4.523456	0.0000
_TFG--C	-2.160980	0.357422	-6.046020	0.0000
_TPC--C	-3.726425	0.679974	-5.480249	0.0000
_TRE--C	-2.370826	0.361251	-6.562818	0.0000
_TRU--C	-1.807488	0.349967	-5.164744	0.0000
_VLE--C	-1.847560	0.582488	-3.171841	0.0015
_WBO--C	-1.997079	0.319536	-6.249935	0.0000
_WHL--C	-1.788165	0.329862	-5.420942	0.0000
_WNH--C	-1.094008	0.593073	-1.844642	0.0651
_ADH--XRUSD_ADH	-0.216627	0.081772	-2.649158	0.0081
_ADR--XRUSD_ADR	-0.199373	0.070107	-2.843824	0.0045
_AEG--XRUSD_AEG	-0.216214	0.072768	-2.971276	0.0030
_AFE--XRUSD_AFE	-0.000225	0.053613	-0.004189	0.9967
_AFR--XRUSD_AFR	-0.081766	0.089833	-0.910196	0.3627
_AFX--XRUSD_AFX	0.004230	0.058191	0.072695	0.9420
_AHL--XRUSD_AHL	0.361838	0.783046	0.462090	0.6440
_AME--XRUSD_AME	-0.173823	0.235442	-0.738283	0.4603
_AOO--XRUSD_AOO	0.183758	0.074606	2.463050	0.0138
_APK--XRUSD_APK	-0.009141	0.074855	-0.122120	0.9028
_APN--XRUSD_APN	-0.193678	0.071257	-2.718008	0.0066
_ARL--XRUSD_ARL	-0.057215	0.064190	-0.891344	0.3727
_ART--XRUSD_ART	-0.018736	0.076629	-0.244501	0.8068
_ASR--XRUSD_ASR	-0.072537	0.078556	-0.923384	0.3558
_ATN--XRUSD_ATN	0.006218	0.068006	0.091432	0.9271
_BCF--XRUSD_BCF	0.074372	0.063925	1.163425	0.2447
_BDM--XRUSD_BDM	0.256915	0.215911	1.189910	0.2341
_BEL--XRUSD_BEL	0.025572	0.099330	0.257447	0.7968
_BSR--XRUSD_BSR	-0.408227	0.465656	-0.876672	0.3807
_BVT--XRUSD_BVT	-0.102909	0.049033	-2.098764	0.0358
_CAT--XRUSD_CAT	0.021132	0.067458	0.313264	0.7541
_CCL--XRUSD_CCL	0.103741	0.124646	0.832289	0.4052
_CKS--XRUSD_CKS	0.114626	0.078955	1.451779	0.1466
_CMH--XRUSD_CMH	-0.084466	0.082640	-1.022101	0.3067
_COM--XRUSD_COM	0.162133	0.120933	1.340685	0.1800
_CRG--XRUSD_CRG	0.031226	0.093478	0.334041	0.7384
_CSB--XRUSD_CSB	-0.048271	0.075657	-0.638028	0.5235
_CUL--XRUSD_CUL	-0.577798	0.223333	-2.587160	0.0097
_DAW--XRUSD_DAW	0.159911	0.089995	1.776893	0.0756
_DCT--XRUSD_DCT	-0.092976	0.084533	-1.099877	0.2714
_DON--XRUSD_DON	0.050546	0.203502	0.248379	0.8038
_DST--XRUSD_DST	0.099382	0.066041	1.504863	0.1324
_DTC--XRUSD_DTC	0.093111	0.080904	1.150882	0.2498
_EOH--XRUSD_EOH	0.055399	0.068188	0.812450	0.4165
_FBR--XRUSD_FBR	-0.232752	0.082243	-2.830060	0.0047
_GRT--XRUSD_GRT	-0.164320	0.053070	-3.096284	0.0020
_ILA--XRUSD_ILA	0.083941	0.090153	0.931099	0.3518
_ILV--XRUSD_ILV	0.158879	0.063536	2.500607	0.0124
_IPL--XRUSD_IPL	-0.335228	0.063358	-5.291057	0.0000
_ITE--XRUSD_ITE	0.082399	0.081399	1.012287	0.3114
_IVT--XRUSD_IVT	0.031995	0.075754	0.422358	0.6728
_JDG--XRUSD_JDG	-0.322203	0.069090	-4.663532	0.0000
_JSC--XRUSD_JSC	-0.188345	0.108519	-1.735604	0.0826

_KGM--XRUSD_KGM	0.019961	0.069969	0.285290	0.7754
_MAS--XRUSD_MAS	0.035220	0.126766	0.277837	0.7811
_MDC--XRUSD_MDC	0.070459	0.056904	1.238197	0.2156
_MFL--XRUSD_MFL	0.003580	0.221256	0.016179	0.9871
_MPC--XRUSD_MPC	-0.329259	0.066436	-4.956033	0.0000
_MSM--XRUSD_MSM	-0.331989	0.063166	-5.255831	0.0000
_MST--XRUSD_MST	0.027307	0.096702	0.282384	0.7777
_MTA--XRUSD_MTA	0.037993	0.093355	0.406980	0.6840
_MTN--XRUSD_MTN	-0.491395	0.069217	-7.099363	0.0000
_MUR--XRUSD_MUR	-0.172388	0.074915	-2.301121	0.0214
_NCS--XRUSD_NCS	-0.209257	0.398080	-0.525665	0.5991
_NPK--XRUSD_NPK	-0.052935	0.051957	-1.018807	0.3083
_NPN--XRUSD_NPN	-0.126141	0.063146	-1.997611	0.0458
_NTC--XRUSD_NTC	-0.072064	0.058418	-1.233587	0.2174
_OCE--XRUSD_OCE	0.084876	0.066685	1.272786	0.2031
_OLG--XRUSD_OLG	0.159878	0.238786	0.669545	0.5032
_OMN--XRUSD_OMN	-0.025172	0.074414	-0.338273	0.7352
_PIK--XRUSD_PIK	-0.160465	0.053387	-3.005686	0.0027
_PMM--XRUSD_PMM	-0.233272	0.079721	-2.926107	0.0034
_PMV--XRUSD_PMV	-0.120419	0.206915	-0.581972	0.5606
_PNC--XRUSD_PNC	-0.196342	0.195751	-1.003021	0.3159
_PPC--XRUSD_PPC	-0.241629	0.064030	-3.773672	0.0002
_PWK--XRUSD_PWK	-0.127784	0.047981	-2.663204	0.0077
_RBW--XRUSD_RBW	-0.184839	0.066771	-2.768257	0.0056
_RLO--XRUSD_RLO	-0.154434	0.056977	-2.710455	0.0067
_RTN--XRUSD_RTN	-0.136032	0.389579	-0.349176	0.7270
_SAP--XRUSD_SAP	0.224641	0.085564	2.625432	0.0087
_SBL--XRUSD_SBL	-0.071733	0.107283	-0.668631	0.5037
_SDH--XRUSD_SDH	-0.030949	0.132365	-0.233818	0.8151
_SER--XRUSD_SER	-0.024193	0.130990	-0.184693	0.8535
_SHF--XRUSD_SHF	0.016975	0.064324	0.263899	0.7919
_SHP--XRUSD_SHP	-0.138016	0.060508	-2.280957	0.0226
_SOL--XRUSD_SOL	0.065219	0.057891	1.126592	0.2599
_SOV--XRUSD_SOV	-0.279164	0.122030	-2.287661	0.0222
_SPA--XRUSD_SPA	0.165101	0.126377	1.306415	0.1914
_SPG--XRUSD_SPG	0.041432	0.100633	0.411720	0.6805
_SUI--XRUSD_SUI	-0.035321	0.059067	-0.597984	0.5499
_SYC--XRUSD_SYC	-0.102093	0.052127	-1.958547	0.0502
_TDH--XRUSD_TDH	0.149005	0.132941	1.120837	0.2624
_TFG--XRUSD_TFG	-0.494384	0.064391	-7.677860	0.0000
_TPC--XRUSD_TPC	-0.168466	0.122500	-1.375239	0.1691
_TRE--XRUSD_TRE	0.292958	0.065081	4.501461	0.0000
_TRU--XRUSD_TRU	-0.375961	0.063048	-5.963111	0.0000
_VLE--XRUSD_VLE	0.042506	0.104937	0.405061	0.6854
_WBO--XRUSD_WBO	-0.047924	0.057566	-0.832506	0.4051
_WHL--XRUSD_WHL	-0.331521	0.059426	-5.578735	0.0000
_WNH--XRUSD_WNH	-0.146968	0.106844	-1.375530	0.1690
_ADH--J203_ADH	0.571921	0.053002	10.79057	0.0000
_ADR--J203_ADR	0.561254	0.045441	12.35120	0.0000
_AEG--J203_AEG	0.808471	0.047166	17.14099	0.0000
_AFE--J203_AFE	0.714795	0.034750	20.56955	0.0000
_AFR--J203_AFR	0.706450	0.058227	12.13268	0.0000
_AFX--J203_AFX	0.587951	0.037717	15.58834	0.0000
_AHL--J203_AHL	-0.099055	0.507545	-0.195165	0.8453
_AME--J203_AME	0.415813	0.152606	2.724747	0.0064
_AOO--J203_AOO	0.426826	0.048357	8.826557	0.0000
_APK--J203_APK	0.514833	0.048519	10.61105	0.0000
_APN--J203_APN	0.672868	0.046187	14.56843	0.0000

_ARL--J203_ARL	0.584248	0.041606	14.04253	0.0000
_ART--J203_ART	0.602593	0.049668	12.13235	0.0000
_ASR--J203_ASR	0.762502	0.050917	14.97529	0.0000
_ATN--J203_ATN	0.680918	0.044080	15.44745	0.0000
_BCF--J203_BCF	0.438081	0.041434	10.57288	0.0000
_BDM--J203_BDM	0.692067	0.139947	4.945212	0.0000
_BEL--J203_BEL	0.738786	0.064383	11.47489	0.0000
_BSR--J203_BSR	1.365356	0.301823	4.523699	0.0000
_BVT--J203_BVT	0.783917	0.031782	24.66560	0.0000
_CAT--J203_CAT	0.590624	0.043724	13.50808	0.0000
_CCL--J203_CCL	0.382002	0.080791	4.728251	0.0000
_CKS--J203_CKS	0.479049	0.051176	9.360770	0.0000
_CMH--J203_CMH	0.577060	0.053565	10.77317	0.0000
_COM--J203_COM	0.403414	0.078385	5.146582	0.0000
_CRG--J203_CRG	0.417054	0.060590	6.883256	0.0000
_CSB--J203_CSB	0.515337	0.049038	10.50885	0.0000
_CUL--J203_CUL	0.443403	0.144757	3.063080	0.0022
_DAW--J203_DAW	0.538226	0.058332	9.227009	0.0000
_DCT--J203_DCT	0.621382	0.054792	11.34079	0.0000
_DON--J203_DON	0.743517	0.131904	5.636816	0.0000
_DST--J203_DST	0.585102	0.042806	13.66884	0.0000
_DTC--J203_DTC	0.963411	0.052439	18.37200	0.0000
_EOH--J203_EOH	0.524625	0.044197	11.87009	0.0000
_FBR--J203_FBR	0.490334	0.053307	9.198285	0.0000
_GRT--J203_GRT	0.526995	0.034398	15.32036	0.0000
_ILA--J203_ILA	0.511715	0.058434	8.757150	0.0000
_ILV--J203_ILV	0.611203	0.041182	14.84143	0.0000
_IPL--J203_IPL	0.846420	0.041066	20.61107	0.0000
_ITE--J203_ITE	0.441010	0.052760	8.358785	0.0000
_IVT--J203_IVT	0.557825	0.049101	11.36067	0.0000
_JDG--J203_JDG	0.707153	0.044782	15.79108	0.0000
_JSC--J203_JSC	0.695880	0.070338	9.893336	0.0000
_KGM--J203_KGM	0.447840	0.045352	9.874877	0.0000
_MAS--J203_MAS	0.440845	0.082166	5.365319	0.0000
_MDC--J203_MDC	0.611889	0.036884	16.58972	0.0000
_MFL--J203_MFL	0.876924	0.143411	6.114767	0.0000
_MPC--J203_MPC	0.721601	0.043062	16.75741	0.0000
_MSM--J203_MSM	0.668752	0.040942	16.33410	0.0000
_MST--J203_MST	0.649984	0.062679	10.37003	0.0000
_MTA--J203_MTA	0.511379	0.060509	8.451215	0.0000
_MTN--J203_MTN	0.897598	0.044864	20.00705	0.0000
_MUR--J203_MUR	0.819821	0.048557	16.88357	0.0000
_NCS--J203_NCS	0.278777	0.258022	1.080437	0.2800
_NPK--J203_NPK	0.720724	0.033677	21.40100	0.0000
_NPN--J203_NPN	0.803408	0.040929	19.62917	0.0000
_NTC--J203_NTC	0.747069	0.037865	19.72984	0.0000
_OCE--J203_OCE	0.545462	0.043223	12.61969	0.0000
_OLG--J203_OLG	0.999427	0.154773	6.457362	0.0000
_OMN--J203_OMN	0.607854	0.048233	12.60244	0.0000
_PIK--J203_PIK	0.629247	0.034604	18.18428	0.0000
_PMM--J203_PMM	0.263849	0.051672	5.106188	0.0000
_PMV--J203_PMV	0.945761	0.134116	7.051827	0.0000
_PNC--J203_PNC	0.667891	0.126879	5.263983	0.0000
_PPC--J203_PPC	0.666659	0.041502	16.06316	0.0000
_PWK--J203_PWK	0.632052	0.031100	20.32331	0.0000
_RBW--J203_RBW	0.503901	0.043279	11.64315	0.0000
_RLO--J203_RLO	0.752906	0.036931	20.38703	0.0000
_RTN--J203_RTN	0.357871	0.252513	1.417239	0.1564

_SAP--J203_SAP	1.013629	0.055459	18.27693	0.0000
_SBL--J203_SBL	0.492609	0.069537	7.084107	0.0000
_SDH--J203_SDH	0.570255	0.085795	6.646750	0.0000
_SER--J203_SER	0.609368	0.084903	7.177205	0.0000
_SHF--J203_SHF	0.888202	0.041693	21.30335	0.0000
_SHP--J203_SHP	0.666321	0.039219	16.98967	0.0000
_SOL--J203_SOL	1.123712	0.037523	29.94744	0.0000
_SOV--J203_SOV	0.516716	0.079096	6.532751	0.0000
_SPA--J203_SPA	0.518965	0.081913	6.335531	0.0000
_SPG--J203_SPG	0.845013	0.065227	12.95499	0.0000
_SUI--J203_SUI	0.670549	0.038285	17.51447	0.0000
_SYC--J203_SYC	0.447758	0.033787	13.25234	0.0000
_TDH--J203_TDH	0.593748	0.086168	6.890574	0.0000
_TFG--J203_TFG	0.680321	0.041736	16.30055	0.0000
_TPC--J203_TPC	0.381011	0.079400	4.798606	0.0000
_TRE--J203_TRE	0.667161	0.042183	15.81579	0.0000
_TRU--J203_TRU	0.712097	0.040866	17.42538	0.0000
_VLE--J203_VLE	0.569881	0.068017	8.378506	0.0000
_WBO--J203_WBO	0.696174	0.037312	18.65813	0.0000
_WHL--J203_WHL	0.694794	0.038518	18.03818	0.0000
_WNH--J203_WNH	0.211025	0.069253	3.047165	0.0023

Weighted Statistics

R-squared	0.115882	Mean dependent var	-0.427454
Adjusted R-squared	0.111279	S.D. dependent var	1.234900
S.E. of regression	1.002610	Sum squared resid	51930.00
F-statistic	25.17150	Durbin-Watson stat	2.169540
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.098746	Mean dependent var	-6.781828
Sum squared resid	4052500.	Durbin-Watson stat	1.962383

Pre-2008 currency crisis: 7/07/2002 – 24/09/2008

Dependent Variable: RETURNS?
Method: Pooled EGLS (Cross-section SUR)
Date: 10/15/13 Time: 21:36
Sample: 7/07/2002 9/21/2008
Included observations: 325
Cross-sections included: 90
Total pool (balanced) observations: 29250
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_ADH--C	-1.031447	0.815272	-1.265157	0.2058
_ADR--C	-3.364103	0.551700	-6.097704	0.0000
_AEG--C	-1.513808	0.637368	-2.375095	0.0176
_AFE--C	-2.703660	0.493542	-5.478079	0.0000
_AFR--C	-2.218721	0.723551	-3.066432	0.0022
_AFX--C	-3.781658	0.512030	-7.385623	0.0000
_AHL--C	-7.033925	8.941851	-0.786630	0.4315
_AME--C	-3.843909	2.700174	-1.423578	0.1546
_AOO--C	-4.479770	0.599269	-7.475388	0.0000
_APK--C	-3.487338	0.675544	-5.162263	0.0000
_APN--C	-2.568634	0.625005	-4.109784	0.0000
_ARL--C	-2.624230	0.627883	-4.179489	0.0000
_ART--C	-2.185145	0.704641	-3.101077	0.0019
_ASR--C	-3.639852	0.764782	-4.759336	0.0000
_ATN--C	-2.618562	0.579821	-4.516157	0.0000
_BCF--C	-4.681698	0.534797	-8.754160	0.0000
_BDM--C	-0.385965	2.246489	-0.171808	0.8636
_BEL--C	-2.937086	0.739597	-3.971196	0.0001
_BSR--C	34.23910	5.073394	6.748757	0.0000
_BVT--C	-2.011751	0.451269	-4.457990	0.0000
_CAT--C	-2.959064	0.640831	-4.617543	0.0000
_CCL--C	-2.463193	1.067965	-2.306436	0.0211
_CKS--C	-3.984743	0.599751	-6.643993	0.0000
_CMH--C	-3.774544	0.767517	-4.917866	0.0000
_COM--C	-1.869047	1.146344	-1.630441	0.1030
_CRG--C	-3.657071	0.937054	-3.902731	0.0001
_CSB--C	-4.359677	0.754202	-5.780518	0.0000
_CUL--C	-0.023680	1.389328	-0.017044	0.9864
_DAW--C	-1.317548	0.787992	-1.672032	0.0945
_DCT--C	-2.019151	0.730713	-2.763263	0.0057
_DON--C	-0.375626	1.900526	-0.197643	0.8433
_DST--C	-2.991095	0.639752	-4.675399	0.0000
_DTC--C	-0.607589	0.771733	-0.787305	0.4311
_EOH--C	-3.100544	0.600963	-5.159291	0.0000
_FBR--C	-2.807725	0.829862	-3.383365	0.0007
_GRT--C	-3.041523	0.517733	-5.874691	0.0000
_ILA--C	-3.322957	0.738245	-4.501157	0.0000
_ILV--C	-2.461517	0.568863	-4.327082	0.0000
_IPL--C	-1.414715	0.550648	-2.569183	0.0102
_ITE--C	-3.764494	0.661697	-5.689151	0.0000
_IVT--C	-3.720299	0.671445	-5.540739	0.0000

_JDG--C	-2.514341	0.638805	-3.936009	0.0001
_JSC--C	0.312997	1.017451	0.307628	0.7584
_KGM--C	-3.546911	0.566819	-6.257567	0.0000
_MAS--C	-4.484109	1.015297	-4.416549	0.0000
_MDC--C	-2.999697	0.512958	-5.847836	0.0000
_MFL--C	2.133815	2.493989	0.855583	0.3922
_MPC--C	-1.894009	0.584271	-3.241662	0.0012
_MSM--C	-2.313266	0.588441	-3.931180	0.0001
_MST--C	-3.113386	0.644774	-4.828646	0.0000
_MTA--C	-3.442378	0.734896	-4.684172	0.0000
_MTN--C	-0.177761	0.653113	-0.272176	0.7855
_MUR--C	-1.809452	0.622784	-2.905426	0.0037
_NCS--C	0.477352	4.455040	0.107149	0.9147
_NPK--C	-2.295132	0.439112	-5.226752	0.0000
_NPN--C	-1.275587	0.589828	-2.162641	0.0306
_NTC--C	-1.700727	0.553004	-3.075435	0.0021
_OCE--C	-3.878726	0.539874	-7.184505	0.0000
_OLG--C	0.910432	2.610059	0.348817	0.7272
_OMN--C	-3.773860	0.674827	-5.592338	0.0000
_PIK--C	-2.518487	0.481000	-5.235936	0.0000
_PMM--C	-3.353526	0.830259	-4.039134	0.0001
_PMV--C	-2.385570	1.365420	-1.747133	0.0806
_PNC--C	0.740316	2.189121	0.338180	0.7352
_PPC--C	-2.025101	0.575497	-3.518875	0.0004
_PWK--C	-2.923577	0.408197	-7.162163	0.0000
_RBW--C	-2.971152	0.639093	-4.649015	0.0000
_RLO--C	-2.456247	0.504283	-4.870774	0.0000
_RTN--C	-3.514528	0.890966	-3.944629	0.0001
_SAP--C	-1.332131	0.598387	-2.226203	0.0260
_SBL--C	-3.815011	0.846008	-4.509428	0.0000
_SDH--C	-2.914890	0.906222	-3.216530	0.0013
_SER--C	-3.527468	1.046550	-3.370570	0.0008
_SHF--C	-0.740047	0.572307	-1.293095	0.1960
_SHP--C	-1.604317	0.539127	-2.975770	0.0029
_SOL--C	1.004469	0.567371	1.770391	0.0767
_SOV--C	-2.442722	1.223656	-1.996249	0.0459
_SPA--C	-3.486142	1.063030	-3.279439	0.0010
_SPG--C	-2.632593	0.667544	-3.943700	0.0001
_SUI--C	-2.628955	0.546658	-4.809140	0.0000
_SYC--C	-4.387093	0.429456	-10.21545	0.0000
_TDH--C	-4.204441	0.981117	-4.285361	0.0000
_TFG--C	-2.097834	0.590579	-3.552167	0.0004
_TPC--C	-3.972442	1.262573	-3.146307	0.0017
_TRE--C	-2.982140	0.558825	-5.336450	0.0000
_TRU--C	-2.193962	0.595010	-3.687271	0.0002
_VLE--C	-0.727780	1.113883	-0.653372	0.5135
_WBO--C	-2.215321	0.509712	-4.346223	0.0000
_WHL--C	-3.030907	0.546531	-5.545719	0.0000
_WNH--C	-3.199052	0.954238	-3.352468	0.0008
_ADH--XRUSD_ADH	-0.524620	0.131076	-4.002419	0.0001
_ADR--XRUSD_ADR	-0.391248	0.088700	-4.410915	0.0000
_AEG--XRUSD_AEG	-0.181542	0.102473	-1.771606	0.0765
_AFE--XRUSD_AFE	-0.124870	0.079349	-1.573674	0.1156
_AFR--XRUSD_AFR	0.100970	0.116329	0.867965	0.3854
_AFX--XRUSD_AFX	-0.109623	0.082322	-1.331636	0.1830
_AHL--XRUSD_AHL	0.418843	1.437631	0.291342	0.7708
_AME--XRUSD_AME	-0.229952	0.434122	-0.529695	0.5963
_AOO--XRUSD_AOO	-0.035134	0.096348	-0.364654	0.7154

_APK--XRUSD_APK	-0.213515	0.108611	-1.965868	0.0493
_APN--XRUSD_APN	-0.350860	0.100485	-3.491648	0.0005
_ARL--XRUSD_ARL	-0.248435	0.100948	-2.461015	0.0139
_ART--XRUSD_ART	-0.077332	0.113289	-0.682604	0.4949
_ASR--XRUSD_ASR	0.061280	0.122958	0.498378	0.6182
_ATN--XRUSD_ATN	-0.093800	0.093221	-1.006209	0.3143
_BCF--XRUSD_BCF	-0.092527	0.085982	-1.076120	0.2819
_BDM--XRUSD_BDM	0.261123	0.361180	0.722970	0.4697
_BEL--XRUSD_BEL	-0.067683	0.118909	-0.569202	0.5692
_BSR--XRUSD_BSR	-1.328347	0.815677	-1.628520	0.1034
_BVT--XRUSD_BVT	-0.167301	0.072553	-2.305911	0.0211
_CAT--XRUSD_CAT	-0.107771	0.103030	-1.046016	0.2956
_CCL--XRUSD_CCL	-0.315916	0.171703	-1.839905	0.0658
_CKS--XRUSD_CKS	-0.070042	0.096425	-0.726384	0.4676
_CMH--XRUSD_CMH	-0.040291	0.123398	-0.326513	0.7440
_COM--XRUSD_COM	-0.006026	0.184304	-0.032697	0.9739
_CRG--XRUSD_CRG	-0.236736	0.150655	-1.571374	0.1161
_CSB--XRUSD_CSB	-0.052644	0.121257	-0.434150	0.6642
_CUL--XRUSD_CUL	0.105106	0.223370	0.470549	0.6380
_DAW--XRUSD_DAW	-0.187247	0.126690	-1.477992	0.1394
_DCT--XRUSD_DCT	-0.098827	0.117481	-0.841219	0.4002
_DON--XRUSD_DON	0.220425	0.305558	0.721387	0.4707
_DST--XRUSD_DST	-0.054898	0.102856	-0.533739	0.5935
_DTC--XRUSD_DTC	0.211490	0.124076	1.704523	0.0883
_EOH--XRUSD_EOH	-0.069774	0.096620	-0.722142	0.4702
_FBR--XRUSD_FBR	-0.293821	0.133421	-2.202204	0.0277
_GRT--XRUSD_GRT	-0.242104	0.083239	-2.908541	0.0036
_ILA--XRUSD_ILA	0.003664	0.118692	0.030869	0.9754
_ILV--XRUSD_ILV	0.140021	0.091459	1.530962	0.1258
_IPL--XRUSD_IPL	-0.386262	0.088531	-4.363032	0.0000
_ITE--XRUSD_ITE	-0.172431	0.106385	-1.620828	0.1051
_IVT--XRUSD_IVT	-0.035727	0.107952	-0.330950	0.7407
_JDG--XRUSD_JDG	-0.423245	0.102704	-4.121016	0.0000
_JSC--XRUSD_JSC	-0.290645	0.163581	-1.776761	0.0756
_KGM--XRUSD_KGM	-0.145289	0.091131	-1.594289	0.1109
_MAS--XRUSD_MAS	-0.088876	0.163235	-0.544465	0.5861
_MDC--XRUSD_MDC	-0.094199	0.082471	-1.142201	0.2534
_MFL--XRUSD_MFL	-0.464691	0.400972	-1.158910	0.2465
_MPC--XRUSD_MPC	-0.328291	0.093936	-3.494818	0.0005
_MSM--XRUSD_MSM	-0.480388	0.094607	-5.077726	0.0000
_MST--XRUSD_MST	0.030194	0.103664	0.291272	0.7708
_MTA--XRUSD_MTA	-0.234566	0.118153	-1.985273	0.0471
_MTN--XRUSD_MTN	-0.510353	0.105005	-4.860296	0.0000
_MUR--XRUSD_MUR	-0.127479	0.100128	-1.273157	0.2030
_NCS--XRUSD_NCS	-0.865319	0.716261	-1.208106	0.2270
_NPK--XRUSD_NPK	-0.161299	0.070599	-2.284740	0.0223
_NPN--XRUSD_NPN	-0.305065	0.094830	-3.216970	0.0013
_NTC--XRUSD_NTC	-0.073982	0.088909	-0.832105	0.4054
_OCE--XRUSD_OCE	-0.042519	0.086798	-0.489856	0.6242
_OLG--XRUSD_OLG	-0.027891	0.419634	-0.066464	0.9470
_OMN--XRUSD_OMN	-0.125214	0.108496	-1.154095	0.2485
_PIK--XRUSD_PIK	-0.364731	0.077333	-4.716372	0.0000
_PMM--XRUSD_PMM	-0.348288	0.133485	-2.609190	0.0091
_PMV--XRUSD_PMV	-0.041854	0.219526	-0.190654	0.8488
_PNC--XRUSD_PNC	-0.211618	0.351957	-0.601260	0.5477
_PPC--XRUSD_PPC	-0.354635	0.092526	-3.832824	0.0001
_PWK--XRUSD_PWK	-0.206608	0.065628	-3.148165	0.0016
_RBW--XRUSD_RBW	-0.355898	0.102750	-3.463713	0.0005

_RLO--XRUSD_RLO	-0.244858	0.081076	-3.020091	0.0025
_RTN--XRUSD_RTN	-0.140643	0.143245	-0.981835	0.3262
_SAP--XRUSD_SAP	0.364015	0.096206	3.783709	0.0002
_SBL--XRUSD_SBL	-0.165709	0.136017	-1.218290	0.2231
_SDH--XRUSD_SDH	-0.128414	0.145698	-0.881369	0.3781
_SER--XRUSD_SER	-0.290759	0.168260	-1.728040	0.0840
_SHF--XRUSD_SHF	0.014586	0.092013	0.158524	0.8740
_SHP--XRUSD_SHP	-0.296438	0.086678	-3.419974	0.0006
_SOL--XRUSD_SOL	0.102938	0.091219	1.128462	0.2591
_SOV--XRUSD_SOV	-0.421925	0.196734	-2.144649	0.0320
_SPA--XRUSD_SPA	-0.007653	0.170909	-0.044779	0.9643
_SPG--XRUSD_SPG	-0.143860	0.107325	-1.340421	0.1801
_SUI--XRUSD_SUI	-0.066035	0.087889	-0.751339	0.4525
_SYC--XRUSD_SYC	-0.204153	0.069046	-2.956762	0.0031
_TDH--XRUSD_TDH	-0.027723	0.157740	-0.175754	0.8605
_TFG--XRUSD_TFG	-0.527893	0.094951	-5.559663	0.0000
_TPC--XRUSD_TPC	-0.491093	0.202991	-2.419288	0.0156
_TRE--XRUSD_TRE	0.146809	0.089845	1.634018	0.1023
_TRU--XRUSD_TRU	-0.368135	0.095663	-3.848251	0.0001
_VLE--XRUSD_VLE	-0.287384	0.179085	-1.604733	0.1086
_WBO--XRUSD_WBO	-0.080652	0.081949	-0.984170	0.3250
_WHL--XRUSD_WHL	-0.288608	0.087869	-3.284531	0.0010
_WNH--XRUSD_WNH	-0.222434	0.153418	-1.449854	0.1471
_ADH--J203_ADH	0.746306	0.085498	8.728958	0.0000
_ADR--J203_ADR	0.587149	0.057857	10.14830	0.0000
_AEG--J203_AEG	0.766934	0.066841	11.47404	0.0000
_AFE--J203_AFE	0.681772	0.051758	13.17236	0.0000
_AFR--J203_AFR	0.667393	0.075879	8.795498	0.0000
_AFX--J203_AFX	0.564636	0.053697	10.51530	0.0000
_AHL--J203_AHL	-0.251693	0.937733	-0.268406	0.7884
_AME--J203_AME	0.360845	0.283167	1.274317	0.2026
_AOO--J203_AOO	0.398080	0.062845	6.334273	0.0000
_APK--J203_APK	0.570512	0.070844	8.053032	0.0000
_APN--J203_APN	0.674018	0.065544	10.28340	0.0000
_ARL--J203_ARL	0.650128	0.065846	9.873445	0.0000
_ART--J203_ART	0.645152	0.073896	8.730567	0.0000
_ASR--J203_ASR	0.531534	0.080203	6.627384	0.0000
_ATN--J203_ATN	0.661480	0.060806	10.87855	0.0000
_BCF--J203_BCF	0.404014	0.056084	7.203709	0.0000
_BDM--J203_BDM	0.810281	0.235590	3.439376	0.0006
_BEL--J203_BEL	0.640426	0.077562	8.256990	0.0000
_BSR--J203_BSR	3.343377	0.532047	6.283985	0.0000
_BVT--J203_BVT	0.772217	0.047325	16.31746	0.0000
_CAT--J203_CAT	0.630402	0.067204	9.380422	0.0000
_CCL--J203_CCL	0.460655	0.111998	4.113075	0.0000
_CKS--J203_CKS	0.510088	0.062896	8.110031	0.0000
_CMH--J203_CMH	0.473791	0.080490	5.886363	0.0000
_COM--J203_COM	0.507181	0.120217	4.218867	0.0000
_CRG--J203_CRG	0.483184	0.098269	4.916956	0.0000
_CSB--J203_CSB	0.429502	0.079093	5.430327	0.0000
_CUL--J203_CUL	0.429751	0.145699	2.949583	0.0032
_DAW--J203_DAW	0.731396	0.082637	8.850735	0.0000
_DCT--J203_DCT	0.654809	0.076630	8.545079	0.0000
_DON--J203_DON	0.831878	0.199308	4.173824	0.0000
_DST--J203_DST	0.626850	0.067091	9.343307	0.0000
_DTC--J203_DTC	0.933510	0.080932	11.53453	0.0000
_EOH--J203_EOH	0.520988	0.063023	8.266623	0.0000
_FBR--J203_FBR	0.467964	0.087028	5.377189	0.0000

_GRT--J203_GRT	0.518130	0.054295	9.542917	0.0000
_ILA--J203_ILA	0.511390	0.077420	6.605417	0.0000
_ILV--J203_ILV	0.657707	0.059657	11.02486	0.0000
_IPL--J203_IPL	0.865082	0.057746	14.98069	0.0000
_ITE--J203_ITE	0.484271	0.069392	6.978752	0.0000
_IVT--J203_IVT	0.491530	0.070414	6.980529	0.0000
_JDG--J203_JDG	0.720102	0.066992	10.74914	0.0000
_JSC--J203_JSC	0.767034	0.106700	7.188681	0.0000
_KGM--J203_KGM	0.491220	0.059442	8.263798	0.0000
_MAS--J203_MAS	0.449735	0.106474	4.223880	0.0000
_MDC--J203_MDC	0.643293	0.053794	11.95845	0.0000
_MFL--J203_MFL	1.207673	0.261545	4.617462	0.0000
_MPC--J203_MPC	0.724308	0.061273	11.82108	0.0000
_MSM--J203_MSM	0.702146	0.061710	11.37818	0.0000
_MST--J203_MST	0.572184	0.067618	8.462062	0.0000
_MTA--J203_MTA	0.569787	0.077069	7.393241	0.0000
_MTN--J203_MTN	0.929080	0.068492	13.56480	0.0000
_MUR--J203_MUR	0.726345	0.065311	11.12127	0.0000
_NCS--J203_NCS	0.280324	0.467200	0.600008	0.5485
_NPK--J203_NPK	0.737472	0.046050	16.01469	0.0000
_NPN--J203_NPN	0.809337	0.061855	13.08436	0.0000
_NTC--J203_NTC	0.742730	0.057994	12.80712	0.0000
_OCE--J203_OCE	0.549002	0.056617	9.696838	0.0000
_OLG--J203_OLG	0.953691	0.273717	3.484221	0.0005
_OMN--J203_OMN	0.518543	0.070769	7.327247	0.0000
_PIK--J203_PIK	0.700775	0.050443	13.89254	0.0000
_PMM--J203_PMM	0.275449	0.087069	3.163564	0.0016
_PMV--J203_PMV	0.447572	0.143192	3.125687	0.0018
_PNC--J203_PNC	0.786072	0.229573	3.424058	0.0006
_PPC--J203_PPC	0.728852	0.060352	12.07661	0.0000
_PWK--J203_PWK	0.622311	0.042808	14.53736	0.0000
_RBW--J203_RBW	0.542800	0.067022	8.098862	0.0000
_RLO--J203_RLO	0.702397	0.052884	13.28180	0.0000
_RTN--J203_RTN	0.509621	0.093436	5.454245	0.0000
_SAP--J203_SAP	0.893248	0.062753	14.23438	0.0000
_SBL--J203_SBL	0.523102	0.088721	5.896042	0.0000
_SDH--J203_SDH	0.433316	0.095036	4.559513	0.0000
_SER--J203_SER	0.502673	0.109752	4.580094	0.0000
_SHF--J203_SHF	0.899777	0.060018	14.99181	0.0000
_SHP--J203_SHP	0.764025	0.056538	13.51341	0.0000
_SOL--J203_SOL	1.097510	0.059500	18.44547	0.0000
_SOV--J203_SOV	0.565863	0.128325	4.409614	0.0000
_SPA--J203_SPA	0.523937	0.111480	4.699824	0.0000
_SPG--J203_SPG	0.754033	0.070005	10.77107	0.0000
_SUI--J203_SUI	0.698260	0.057328	12.18007	0.0000
_SYC--J203_SYC	0.433688	0.045037	9.629555	0.0000
_TDH--J203_TDH	0.564938	0.102890	5.490704	0.0000
_TFG--J203_TFG	0.727721	0.061934	11.74993	0.0000
_TPC--J203_TPC	0.422274	0.132406	3.189237	0.0014
_TRE--J203_TRE	0.657775	0.058604	11.22407	0.0000
_TRU--J203_TRU	0.697795	0.062399	11.18284	0.0000
_VLE--J203_VLE	0.727969	0.116813	6.231914	0.0000
_WBO--J203_WBO	0.666720	0.053454	12.47290	0.0000
_WHL--J203_WHL	0.606083	0.057315	10.57463	0.0000
_WNH--J203_WNH	0.081495	0.100071	0.814375	0.4154

Weighted Statistics

R-squared	0.108549	Mean dependent var	-0.510449
Adjusted R-squared	0.100274	S.D. dependent var	1.283336
S.E. of regression	1.004648	Sum squared resid	29250.00
F-statistic	13.11820	Durbin-Watson stat	2.145251
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.090783	Mean dependent var	-7.786783
Sum squared resid	2968678.	Durbin-Watson stat	1.949161

Post-2008 currency crisis: 07/12/2008 – 21/07/2013

Dependent Variable: RETURNS?
Method: Pooled EGLS (Cross-section SUR)
Date: 10/15/13 Time: 21:47
Sample: 12/07/2008 7/21/2013
Included observations: 242
Cross-sections included: 90
Total pool (balanced) observations: 21780
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_ADH--C	-4.211392	0.521273	-8.079055	0.0000
_ADR--C	-3.328265	0.686583	-4.847582	0.0000
_AEG--C	-1.829670	0.578820	-3.161036	0.0016
_AFE--C	-2.247169	0.416692	-5.392883	0.0000
_AFR--C	-4.322517	0.799720	-5.405038	0.0000
_AFX--C	-2.926889	0.482453	-6.066688	0.0000
_AHL--C	-3.425582	2.092112	-1.637380	0.1016
_AME--C	-3.013324	0.579177	-5.202773	0.0000
_AOO--C	-3.215688	0.736676	-4.365134	0.0000
_APK--C	-3.504657	0.609235	-5.752558	0.0000
_APN--C	-1.696581	0.618175	-2.744501	0.0061
_ARL--C	-4.001086	0.442111	-9.049953	0.0000
_ART--C	-4.045969	0.600747	-6.734898	0.0000
_ASR--C	-0.012848	0.551396	-0.023301	0.9814
_ATN--C	-2.335604	0.601871	-3.880570	0.0001
_BCF--C	-3.466831	0.572692	-6.053568	0.0000
_BDM--C	-4.183131	1.327806	-3.150407	0.0016
_BEL--C	-0.014947	1.004626	-0.014879	0.9881
_BSR--C	-1.861025	0.732700	-2.539954	0.0111
_BVT--C	-1.205946	0.389521	-3.095972	0.0020
_CAT--C	-3.158487	0.495199	-6.378223	0.0000
_CCL--C	-2.747069	1.105979	-2.483835	0.0130
_CKS--C	-4.034654	0.821101	-4.913711	0.0000
_CMH--C	-3.034101	0.629275	-4.821586	0.0000
_COM--C	-2.704786	0.935492	-2.891297	0.0038
_CRG--C	-3.888968	0.624728	-6.225061	0.0000
_CSB--C	-3.124427	0.509610	-6.131020	0.0000
_CUL--C	0.308187	2.276098	0.135401	0.8923

_DAW--C	-4.542435	0.739726	-6.140696	0.0000
_DCT--C	-2.752647	0.740404	-3.717761	0.0002
_DON--C	-3.804193	1.663060	-2.287465	0.0222
_DST--C	-3.301438	0.476053	-6.935015	0.0000
_DTC--C	-0.748932	0.581510	-1.287910	0.1978
_EOH--C	-2.271616	0.586288	-3.874571	0.0001
_FBR--C	-1.942067	0.544803	-3.564715	0.0004
_GRT--C	-2.375966	0.392348	-6.055759	0.0000
_ILA--C	-3.123437	0.846106	-3.691544	0.0002
_ILV--C	-3.047510	0.515207	-5.915123	0.0000
_IPL--C	-1.973671	0.561355	-3.515907	0.0004
_ITE--C	-3.682137	0.766074	-4.806503	0.0000
_IVT--C	-2.496972	0.660583	-3.779954	0.0002
_JDG--C	-1.482549	0.539710	-2.746939	0.0060
_JSC--C	-2.015530	0.806834	-2.498074	0.0125
_KGM--C	-3.204812	0.538558	-5.950730	0.0000
_MAS--C	-5.251103	1.261104	-4.163894	0.0000
_MDC--C	-3.045341	0.450537	-6.759354	0.0000
_MFL--C	-2.561634	0.637419	-4.018759	0.0001
_MPC--C	-1.430115	0.553028	-2.585971	0.0097
_MSM--C	-1.927690	0.477722	-4.035170	0.0001
_MST--C	-1.253617	1.063474	-1.178794	0.2385
_MTA--C	-2.476124	0.764055	-3.240768	0.0012
_MTN--C	-0.684777	0.445164	-1.538259	0.1240
_MUR--C	-1.241116	0.662178	-1.874295	0.0609
_NCS--C	1.509354	1.531714	0.985402	0.3244
_NPK--C	-2.102498	0.444859	-4.726206	0.0000
_NPN--C	-0.416663	0.501949	-0.830092	0.4065
_NTC--C	-1.640388	0.434456	-3.775726	0.0002
_OCE--C	-3.856768	0.598913	-6.439609	0.0000
_OLG--C	2.025220	1.092919	1.853037	0.0639
_OMN--C	-2.109955	0.591524	-3.566982	0.0004
_PIK--C	-2.918595	0.421970	-6.916587	0.0000
_PMM--C	-3.608074	0.460694	-7.831818	0.0000
_PMV--C	5.110998	1.911822	2.673365	0.0075
_PNC--C	-1.997943	0.717757	-2.783592	0.0054
_PPC--C	-2.801223	0.535940	-5.226751	0.0000
_PWK--C	-2.274784	0.442536	-5.140333	0.0000
_RBW--C	-3.663867	0.474623	-7.719527	0.0000
_RLO--C	-1.942897	0.481302	-4.036750	0.0001
_RTN--C	-7.999075	5.377839	-1.487414	0.1369
_SAP--C	0.721718	0.873910	0.825849	0.4089
_SBL--C	-3.901314	1.097117	-3.555970	0.0004
_SDH--C	0.322538	1.460501	0.220841	0.8252
_SER--C	-1.946002	1.123989	-1.731334	0.0834
_SHF--C	-1.027945	0.529652	-1.940793	0.0523
_SHP--C	-2.362320	0.476500	-4.957649	0.0000
_SOL--C	1.005831	0.361091	2.785531	0.0053
_SOV--C	-3.522723	0.844616	-4.170797	0.0000
_SPA--C	-2.753045	1.079448	-2.550420	0.0108
_SPG--C	1.377081	1.104613	1.246664	0.2125
_SUI--C	-2.907146	0.480736	-6.047278	0.0000
_SYC--C	-3.851398	0.467235	-8.242951	0.0000
_TDH--C	-3.558190	1.405280	-2.532015	0.0113
_TFG--C	-2.492387	0.501649	-4.968392	0.0000
_TPC--C	-3.665330	0.716610	-5.114817	0.0000
_TRE--C	-2.322530	0.549299	-4.228167	0.0000
_TRU--C	-1.486658	0.466590	-3.186222	0.0014

_VLE--C	-2.972967	0.537924	-5.526743	0.0000
_WBO--C	-1.835358	0.493116	-3.721957	0.0002
_WHL--C	-1.510599	0.485613	-3.110706	0.0019
_WNH--C	-0.553086	0.880548	-0.628116	0.5299
_ADH--XRUSD_ADH	-0.066942	0.099893	-0.670130	0.5028
_ADR--XRUSD_ADR	-0.037498	0.131572	-0.284998	0.7756
_AEG--XRUSD_AEG	-0.136667	0.110921	-1.232104	0.2179
_AFE--XRUSD_AFE	0.188080	0.079852	2.355359	0.0185
_AFR--XRUSD_AFR	-0.455928	0.153253	-2.975000	0.0029
_AFX--XRUSD_AFX	0.126620	0.092454	1.369548	0.1708
_AHL--XRUSD_AHL	0.697346	0.400919	1.739371	0.0820
_AME--XRUSD_AME	-0.051006	0.110990	-0.459559	0.6458
_AOO--XRUSD_AOO	0.432087	0.141172	3.060719	0.0022
_APK--XRUSD_APK	0.004455	0.116750	0.038160	0.9696
_APN--XRUSD_APN	-0.061449	0.118463	-0.518723	0.6040
_ARL--XRUSD_ARL	0.116919	0.084723	1.380015	0.1676
_ART--XRUSD_ART	0.118470	0.115123	1.029074	0.3035
_ASR--XRUSD_ASR	-0.023915	0.105666	-0.226329	0.8209
_ATN--XRUSD_ATN	0.154415	0.115339	1.338792	0.1807
_BCF--XRUSD_BCF	0.111448	0.109747	1.015501	0.3099
_BDM--XRUSD_BDM	0.600799	0.254452	2.361149	0.0182
_BEL--XRUSD_BEL	0.159565	0.192520	0.828824	0.4072
_BSR--XRUSD_BSR	0.021937	0.140410	0.156237	0.8758
_BVT--XRUSD_BVT	-0.147158	0.074645	-1.971429	0.0487
_CAT--XRUSD_CAT	0.075318	0.094897	0.793689	0.4274
_CCL--XRUSD_CCL	0.259341	0.211943	1.223637	0.2211
_CKS--XRUSD_CKS	0.181519	0.157350	1.153595	0.2487
_CMH--XRUSD_CMH	-0.028450	0.120590	-0.235919	0.8135
_COM--XRUSD_COM	0.130930	0.179272	0.730347	0.4652
_CRG--XRUSD_CRG	0.247485	0.119719	2.067217	0.0387
_CSB--XRUSD_CSB	0.016673	0.097658	0.170725	0.8644
_CUL--XRUSD_CUL	-0.598587	0.436177	-1.372350	0.1700
_DAW--XRUSD_DAW	0.399100	0.141756	2.815394	0.0049
_DCT--XRUSD_DCT	-0.335642	0.141886	-2.365572	0.0180
_DON--XRUSD_DON	-0.177444	0.318698	-0.556777	0.5777
_DST--XRUSD_DST	0.136265	0.091228	1.493678	0.1353
_DTC--XRUSD_DTC	0.014019	0.111437	0.125803	0.8999
_EOH--XRUSD_EOH	0.036009	0.112352	0.320499	0.7486
_FBR--XRUSD_FBR	-0.021806	0.104402	-0.208865	0.8346
_GRT--XRUSD_GRT	-0.113517	0.075187	-1.509799	0.1311
_ILA--XRUSD_ILA	0.089181	0.162142	0.550015	0.5823
_ILV--XRUSD_ILV	0.198586	0.098731	2.011389	0.0443
_IPL--XRUSD_IPL	-0.343201	0.107574	-3.190356	0.0014
_ITE--XRUSD_ITE	0.146349	0.146805	0.996888	0.3188
_IVT--XRUSD_IVT	0.157520	0.126590	1.244332	0.2134
_JDG--XRUSD_JDG	-0.158473	0.103426	-1.532233	0.1255
_JSC--XRUSD_JSC	-0.063287	0.154616	-0.409317	0.6823
_KGM--XRUSD_KGM	-0.046690	0.103206	-0.452400	0.6510
_MAS--XRUSD_MAS	0.149024	0.241670	0.616641	0.5375
_MDC--XRUSD_MDC	0.119519	0.086338	1.384318	0.1663
_MFL--XRUSD_MFL	0.194751	0.122151	1.594344	0.1109
_MPC--XRUSD_MPC	-0.281863	0.105979	-2.659617	0.0078
_MSM--XRUSD_MSM	-0.166913	0.091548	-1.823243	0.0683
_MST--XRUSD_MST	0.036950	0.203797	0.181310	0.8561
_MTA--XRUSD_MTA	0.028062	0.146418	0.191655	0.8480
_MTN--XRUSD_MTN	-0.183790	0.085308	-2.154427	0.0312
_MUR--XRUSD_MUR	-0.046913	0.126895	-0.369696	0.7116
_NCS--XRUSD_NCS	0.638688	0.293528	2.175903	0.0296

_NPK--XRUSD_NPK	0.027447	0.085250	0.321965	0.7475
_NPN--XRUSD_NPN	0.006168	0.096190	0.064124	0.9489
_NTC--XRUSD_NTC	-0.079238	0.083256	-0.951740	0.3412
_OCE--XRUSD_OCE	0.129757	0.114772	1.130567	0.2583
_OLG--XRUSD_OLG	0.003326	0.209440	0.015882	0.9873
_OMN--XRUSD_OMN	0.131003	0.113356	1.155678	0.2478
_PIK--XRUSD_PIK	-0.005423	0.080864	-0.067058	0.9465
_PMM--XRUSD_PMM	0.017958	0.088284	0.203410	0.8388
_PMV--XRUSD_PMV	-0.992104	0.366369	-2.707934	0.0068
_PNC--XRUSD_PNC	-0.380490	0.137546	-2.766270	0.0057
_PPC--XRUSD_PPC	-0.134715	0.102704	-1.311680	0.1896
_PWK--XRUSD_PWK	-0.013597	0.084805	-0.160330	0.8726
_RBW--XRUSD_RBW	0.124067	0.090954	1.364066	0.1726
_RLO--XRUSD_RLO	0.021536	0.092234	0.233494	0.8154
_RTN--XRUSD_RTN	-0.730592	1.030574	-0.708918	0.4784
_SAP--XRUSD_SAP	0.241387	0.167470	1.441368	0.1495
_SBL--XRUSD_SBL	-0.213460	0.210244	-1.015293	0.3100
_SDH--XRUSD_SDH	0.061134	0.279881	0.218428	0.8271
_SER--XRUSD_SER	0.412363	0.215394	1.914458	0.0556
_SHF--XRUSD_SHF	-0.022271	0.101499	-0.219419	0.8263
_SHP--XRUSD_SHP	-0.102978	0.091313	-1.127742	0.2594
_SOL--XRUSD_SOL	0.191654	0.069197	2.769681	0.0056
_SOV--XRUSD_SOV	-0.007728	0.161857	-0.047747	0.9619
_SPA--XRUSD_SPA	0.028113	0.206858	0.135905	0.8919
_SPG--XRUSD_SPG	0.174833	0.211681	0.825929	0.4089
_SUI--XRUSD_SUI	-0.047779	0.092125	-0.518629	0.6040
_SYC--XRUSD_SYC	-0.079916	0.089538	-0.892540	0.3721
_TDH--XRUSD_TDH	0.281776	0.269299	1.046332	0.2954
_TFG--XRUSD_TFG	-0.459822	0.096133	-4.783198	0.0000
_TPC--XRUSD_TPC	-0.101073	0.137327	-0.736003	0.4617
_TRE--XRUSD_TRE	0.383485	0.105264	3.643070	0.0003
_TRU--XRUSD_TRU	-0.309134	0.089414	-3.457322	0.0005
_VLE--XRUSD_VLE	0.154268	0.103084	1.496521	0.1345
_WBO--XRUSD_WBO	-0.035928	0.094498	-0.380202	0.7038
_WHL--XRUSD_WHL	-0.315724	0.093060	-3.392701	0.0007
_WNH--XRUSD_WNH	-0.200496	0.168743	-1.188176	0.2348
_ADH--J203_ADH	0.157150	0.080796	1.945029	0.0518
_ADR--J203_ADR	0.418759	0.106418	3.935030	0.0001
_AEG--J203_AEG	0.714624	0.089715	7.965454	0.0000
_AFE--J203_AFE	0.598546	0.064586	9.267433	0.0000
_AFR--J203_AFR	0.125325	0.123954	1.011059	0.3120
_AFX--J203_AFX	0.533255	0.074779	7.131104	0.0000
_AHL--J203_AHL	0.433051	0.324271	1.335458	0.1817
_AME--J203_AME	0.459444	0.089771	5.117973	0.0000
_AOO--J203_AOO	0.425293	0.114183	3.724674	0.0002
_APK--J203_APK	0.415592	0.094430	4.401077	0.0000
_APN--J203_APN	0.631117	0.095815	6.586809	0.0000
_ARL--J203_ARL	0.359495	0.068526	5.246118	0.0000
_ART--J203_ART	0.354897	0.093114	3.811420	0.0001
_ASR--J203_ASR	0.938369	0.085465	10.97960	0.0000
_ATN--J203_ATN	0.634132	0.093288	6.797551	0.0000
_BCF--J203_BCF	0.314038	0.088766	3.537836	0.0004
_BDM--J203_BDM	0.446018	0.205806	2.167174	0.0302
_BEL--J203_BEL	0.998403	0.155714	6.411770	0.0000
_BSR--J203_BSR	0.747066	0.113566	6.578235	0.0000
_BVT--J203_BVT	0.776575	0.060375	12.86260	0.0000
_CAT--J203_CAT	0.447133	0.076754	5.825510	0.0000
_CCL--J203_CCL	0.070386	0.171424	0.410594	0.6814

_CKS--J203_CKS	0.324022	0.127268	2.545979	0.0109
_CMH--J203_CMH	0.368923	0.097536	3.782438	0.0002
_COM--J203_COM	0.459471	0.144999	3.168800	0.0015
_CRG--J203_CRG	0.304370	0.096831	3.143308	0.0017
_CSB--J203_CSB	0.447730	0.078988	5.668328	0.0000
_CUL--J203_CUL	0.662409	0.352789	1.877639	0.0604
_DAW--J203_DAW	0.252246	0.114655	2.200035	0.0278
_DCT--J203_DCT	0.242822	0.114761	2.115905	0.0344
_DON--J203_DON	0.378629	0.257770	1.468866	0.1419
_DST--J203_DST	0.414383	0.073787	5.615941	0.0000
_DTC--J203_DTC	0.795714	0.090132	8.828287	0.0000
_EOH--J203_EOH	0.477786	0.090873	5.257731	0.0000
_FBR--J203_FBR	0.563112	0.084443	6.668554	0.0000
_GRT--J203_GRT	0.540372	0.060813	8.885825	0.0000
_ILA--J203_ILA	0.410848	0.131144	3.132804	0.0017
_ILV--J203_ILV	0.484965	0.079856	6.073036	0.0000
_IPL--J203_IPL	0.604405	0.087008	6.946514	0.0000
_ITE--J203_ITE	0.220543	0.118739	1.857369	0.0633
_IVT--J203_IVT	0.493936	0.102388	4.824135	0.0000
_JDG--J203_JDG	0.778211	0.083653	9.302797	0.0000
_JSC--J203_JSC	0.191407	0.125057	1.530560	0.1259
_KGM--J203_KGM	0.413597	0.083475	4.954748	0.0000
_MAS--J203_MAS	0.095210	0.195467	0.487087	0.6262
_MDC--J203_MDC	0.425898	0.069832	6.098892	0.0000
_MFL--J203_MFL	0.430003	0.098798	4.352337	0.0000
_MPC--J203_MPC	0.671752	0.085718	7.836792	0.0000
_MSM--J203_MSM	0.663333	0.074046	8.958443	0.0000
_MST--J203_MST	0.547419	0.164835	3.321005	0.0009
_MTA--J203_MTA	0.454305	0.118426	3.836188	0.0001
_MTN--J203_MTN	0.890078	0.068999	12.89986	0.0000
_MUR--J203_MUR	0.867201	0.102636	8.449313	0.0000
_NCS--J203_NCS	0.252721	0.237411	1.064486	0.2871
_NPK--J203_NPK	0.586976	0.068952	8.512825	0.0000
_NPN--J203_NPN	0.862299	0.077801	11.08345	0.0000
_NTC--J203_NTC	0.651779	0.067339	9.679008	0.0000
_OCE--J203_OCE	0.267039	0.092830	2.876648	0.0040
_OLG--J203_OLG	0.782811	0.169399	4.621101	0.0000
_OMN--J203_OMN	0.598078	0.091684	6.523223	0.0000
_PIK--J203_PIK	0.532687	0.065404	8.144542	0.0000
_PMM--J203_PMM	0.309741	0.071406	4.337730	0.0000
_PMV--J203_PMV	-0.406190	0.296327	-1.370751	0.1705
_PNC--J203_PNC	0.382573	0.111250	3.438850	0.0006
_PPC--J203_PPC	0.544453	0.083069	6.554224	0.0000
_PWK--J203_PWK	0.610602	0.068592	8.901962	0.0000
_RBW--J203_RBW	0.370894	0.073565	5.041710	0.0000
_RLO--J203_RLO	0.675093	0.074600	9.049443	0.0000
_RTN--J203_RTN	-0.678266	0.833549	-0.813709	0.4158
_SAP--J203_SAP	1.167744	0.135454	8.620994	0.0000
_SBL--J203_SBL	0.324605	0.170050	1.908879	0.0563
_SDH--J203_SDH	0.801510	0.226373	3.540656	0.0004
_SER--J203_SER	0.566126	0.174215	3.249581	0.0012
_SHF--J203_SHF	0.779781	0.082095	9.498568	0.0000
_SHP--J203_SHP	0.550536	0.073856	7.454170	0.0000
_SOL--J203_SOL	1.187216	0.055968	21.21236	0.0000
_SOV--J203_SOV	0.430698	0.130913	3.289956	0.0010
_SPA--J203_SPA	0.098886	0.167311	0.591033	0.5545
_SPG--J203_SPG	1.257290	0.171212	7.343477	0.0000
_SUI--J203_SUI	0.543016	0.074513	7.287566	0.0000

_SYC--J203_SYC	0.304529	0.072420	4.205030	0.0000
_TDH--J203_TDH	0.384430	0.217814	1.764943	0.0776
_TFG--J203_TFG	0.556827	0.077754	7.161382	0.0000
_TPC--J203_TPC	0.230948	0.111072	2.079259	0.0376
_TRE--J203_TRE	0.538219	0.085140	6.321589	0.0000
_TRU--J203_TRU	0.715027	0.072320	9.886989	0.0000
_VLE--J203_VLE	0.301080	0.083377	3.611083	0.0003
_WBO--J203_WBO	0.704638	0.076432	9.219198	0.0000
_WHL--J203_WHL	0.643417	0.075269	8.548277	0.0000
_WNH--J203_WNH	0.077334	0.136482	0.566626	0.5710

Weighted Statistics

R-squared	0.174797	Mean dependent var	-0.473424
Adjusted R-squared	0.164477	S.D. dependent var	1.370936
S.E. of regression	1.006257	Sum squared resid	21780.00
F-statistic	16.93797	Durbin-Watson stat	2.150607
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.122476	Mean dependent var	-5.207752
Sum squared resid	889091.3	Durbin-Watson stat	2.208549

Model Output for ZAR/GBP exchange rate

Dependent Variable: RETURNS?
Method: Pooled EGLS (Cross-section SUR)
Date: 10/15/13 Time: 20:57
Sample: 7/07/2002 7/21/2013
Included observations: 577
Cross-sections included: 90
Total pool (balanced) observations: 51930
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_ADH--C	-2.070793	0.445804	-4.645073	0.0000
_ADR--C	-2.987212	0.385468	-7.749576	0.0000
_AEG--C	-1.141544	0.399471	-2.857639	0.0043
_AFE--C	-2.092521	0.294816	-7.097720	0.0000
_AFR--C	-1.381302	0.493796	-2.797313	0.0052
_AFX--C	-3.215288	0.320297	-10.03847	0.0000
_AHL--C	-6.404025	4.309172	-1.486138	0.1372
_AME--C	-3.229751	1.295538	-2.492981	0.0127
_AOO--C	-3.965899	0.411425	-9.639424	0.0000
_APK--C	-3.513989	0.411823	-8.532765	0.0000
_APN--C	-1.948895	0.389217	-5.007224	0.0000
_ARL--C	-2.949815	0.352935	-8.357957	0.0000
_ART--C	-2.586068	0.421848	-6.130335	0.0000
_ASR--C	-1.388834	0.432735	-3.209436	0.0013

_ATN--C	-2.340436	0.374404	-6.251092	0.0000
_BCF--C	-3.758383	0.352277	-10.66883	0.0000
_BDM--C	-2.253024	1.187485	-1.897307	0.0578
_BEL--C	-1.944523	0.546494	-3.558175	0.0004
_BSR--C	10.54966	2.563951	4.114609	0.0000
_BVT--C	-1.518138	0.268379	-5.656697	0.0000
_CAT--C	-2.925789	0.371316	-7.879511	0.0000
_CCL--C	-2.245241	0.686581	-3.270175	0.0011
_CKS--C	-3.878096	0.435412	-8.906725	0.0000
_CMH--C	-2.464774	0.454329	-5.425084	0.0000
_COM--C	-3.077035	0.666503	-4.616687	0.0000
_CRG--C	-3.835412	0.514685	-7.451963	0.0000
_CSB--C	-3.227319	0.416569	-7.747383	0.0000
_CUL--C	0.394993	1.229973	0.321139	0.7481
_DAW--C	-3.177325	0.496337	-6.401541	0.0000
_DCT--C	-1.481216	0.465361	-3.182940	0.0015
_DON--C	-1.416115	1.120404	-1.263933	0.2063
_DST--C	-3.000661	0.364293	-8.236952	0.0000
_DTC--C	-0.253799	0.445719	-0.569416	0.5691
_EOH--C	-2.686876	0.375445	-7.156513	0.0000
_FBR--C	-2.372759	0.454129	-5.224862	0.0000
_GRT--C	-2.618404	0.292404	-8.954753	0.0000
_ILA--C	-3.121427	0.496124	-6.291629	0.0000
_ILV--C	-2.773285	0.351620	-7.887175	0.0000
_IPL--C	-0.869421	0.340963	-2.549898	0.0108
_ITE--C	-3.469656	0.448502	-7.736097	0.0000
_IVT--C	-2.779805	0.417116	-6.664353	0.0000
_JDG--C	-2.029091	0.379839	-5.341977	0.0000
_JSC--C	0.324374	0.597324	0.543046	0.5871
_KGM--C	-3.530512	0.385234	-9.164602	0.0000
_MAS--C	-4.100550	0.697907	-5.875499	0.0000
_MDC--C	-2.772354	0.313504	-8.843110	0.0000
_MFL--C	-0.434361	1.217810	-0.356674	0.7213
_MPC--C	-1.297848	0.360835	-3.596792	0.0003
_MSM--C	-2.012842	0.343029	-5.867842	0.0000
_MST--C	-1.702033	0.531804	-3.200490	0.0014
_MTA--C	-3.171942	0.513834	-6.173093	0.0000
_MTN--C	-0.115594	0.379855	-0.304312	0.7609
_MUR--C	-1.170799	0.413199	-2.833500	0.0046
_NCS--C	1.139642	2.190259	0.520323	0.6028
_NPK--C	-1.928274	0.285065	-6.764339	0.0000
_NPN--C	-0.989632	0.345151	-2.867241	0.0041
_NTC--C	-1.348976	0.320905	-4.203655	0.0000
_OCE--C	-3.251045	0.367618	-8.843547	0.0000
_OLG--C	2.007937	1.315096	1.526837	0.1268
_OMN--C	-2.642753	0.409566	-6.452570	0.0000
_PIK--C	-2.665991	0.292026	-9.129301	0.0000
_PMM--C	-3.516973	0.440370	-7.986403	0.0000
_PMV--C	6.814104	1.137867	5.988487	0.0000
_PNC--C	-0.265636	1.075188	-0.247060	0.8049
_PPC--C	-2.151157	0.348202	-6.177892	0.0000
_PWK--C	-2.423579	0.263326	-9.203727	0.0000
_RBW--C	-3.017460	0.366289	-8.237932	0.0000
_RLO--C	-1.682470	0.313001	-5.375287	0.0000
_RTN--C	-3.546233	2.144946	-1.653297	0.0983
_SAP--C	-0.493275	0.473190	-1.042446	0.2972
_SBL--C	-3.547423	0.590125	-6.011310	0.0000
_SDH--C	-1.482425	0.727989	-2.036328	0.0417

_SER--C	-2.390169	0.720897	-3.315549	0.0009
_SHF--C	-0.723798	0.354130	-2.043875	0.0410
_SHP--C	-2.006660	0.329459	-6.090763	0.0000
_SOL--C	0.947967	0.318592	2.975491	0.0029
_SOV--C	-2.748833	0.669716	-4.104474	0.0000
_SPA--C	-2.207882	0.696253	-3.171091	0.0015
_SPG--C	-1.514729	0.552967	-2.739275	0.0062
_SUI--C	-2.547797	0.324342	-7.855281	0.0000
_SYC--C	-3.687932	0.285899	-12.89944	0.0000
_TDH--C	-3.442147	0.732664	-4.698126	0.0000
_TFG--C	-1.769547	0.351327	-5.036752	0.0000
_TPC--C	-3.594006	0.674398	-5.329203	0.0000
_TRE--C	-2.596688	0.360555	-7.201923	0.0000
_TRU--C	-1.506827	0.342567	-4.398640	0.0000
_VLE--C	-1.879238	0.577788	-3.252470	0.0011
_WBO--C	-1.958592	0.316820	-6.182033	0.0000
_WHL--C	-1.522607	0.323039	-4.713382	0.0000
_WNH--C	-0.980213	0.588496	-1.665622	0.0958
_ADH--XRGBP_ADH	-0.378627	0.087889	-4.308035	0.0000
_ADR--XRGBP_ADR	-0.235572	0.075993	-3.099897	0.0019
_AEG--XRGBP_AEG	-0.275047	0.078754	-3.492480	0.0005
_AFE--XRGBP_AFE	-0.067537	0.058122	-1.161985	0.2452
_AFR--XRGBP_AFR	-0.158131	0.097350	-1.624357	0.1043
_AFX--XRGBP_AFX	-0.031391	0.063145	-0.497123	0.6191
_AHL--XRGBP_AHL	0.710482	0.849536	0.836317	0.4030
_AME--XRGBP_AME	-0.272697	0.255410	-1.067684	0.2857
_AOO--XRGBP_AOO	0.164478	0.081111	2.027817	0.0426
_APK--XRGBP_APK	-0.073083	0.081189	-0.900150	0.3680
_APN--XRGBP_APN	-0.313440	0.076733	-4.084843	0.0000
_ARL--XRGBP_ARL	-0.105174	0.069580	-1.511555	0.1307
_ART--XRGBP_ART	0.029769	0.083166	0.357954	0.7204
_ASR--XRGBP_ASR	0.035868	0.085312	0.420436	0.6742
_ATN--XRGBP_ATN	-0.005128	0.073812	-0.069477	0.9446
_BCF--XRGBP_BCF	-0.033491	0.069450	-0.482236	0.6296
_BDM--XRGBP_BDM	0.376040	0.234108	1.606269	0.1082
_BEL--XRGBP_BEL	0.097938	0.107739	0.909027	0.3633
_BSR--XRGBP_BSR	-0.398275	0.505473	-0.787926	0.4307
_BVT--XRGBP_BVT	-0.177255	0.052910	-3.350137	0.0008
_CAT--XRGBP_CAT	-0.040048	0.073203	-0.547076	0.5843
_CCL--XRGBP_CCL	0.041559	0.135357	0.307036	0.7588
_CKS--XRGBP_CKS	-0.034719	0.085840	-0.404468	0.6859
_CMH--XRGBP_CMH	-0.146267	0.089569	-1.633004	0.1025
_COM--XRGBP_COM	0.097589	0.131398	0.742694	0.4577
_CRG--XRGBP_CRG	-0.005793	0.101468	-0.057094	0.9545
_CSB--XRGBP_CSB	-0.043256	0.082125	-0.526711	0.5984
_CUL--XRGBP_CUL	-0.607682	0.242484	-2.506068	0.0122
_DAW--XRGBP_DAW	0.102658	0.097851	1.049124	0.2941
_DCT--XRGBP_DCT	-0.103860	0.091744	-1.132063	0.2576
_DON--XRGBP_DON	-0.030959	0.220883	-0.140161	0.8885
_DST--XRGBP_DST	0.005024	0.071819	0.069949	0.9442
_DTC--XRGBP_DTC	0.063125	0.087872	0.718383	0.4725
_EOH--XRGBP_EOH	-0.053813	0.074017	-0.727026	0.4672
_FBR--XRGBP_FBR	-0.190763	0.089530	-2.130720	0.0331
_GRT--XRGBP_GRT	-0.169645	0.057646	-2.942861	0.0033
_ILA--XRGBP_ILA	0.113129	0.097809	1.156629	0.2474
_ILV--XRGBP_ILV	0.031744	0.069320	0.457936	0.6470
_IPL--XRGBP_IPL	-0.503733	0.067220	-7.493851	0.0000
_ITE--XRGBP_ITE	0.024137	0.088420	0.272984	0.7849

_IVT--XRGBP_IVT	0.010891	0.082233	0.132443	0.8946
_JDG--XRGBP_JDG	-0.362362	0.074884	-4.838988	0.0000
_JSC--XRGBP_JSC	-0.211865	0.117760	-1.799122	0.0720
_KGM--XRGBP_KGM	0.000109	0.075947	0.001433	0.9989
_MAS--XRGBP_MAS	0.035018	0.137590	0.254510	0.7991
_MDC--XRGBP_MDC	-0.052145	0.061806	-0.843681	0.3989
_MFL--XRGBP_MFL	-0.126273	0.240086	-0.525948	0.5989
_MPC--XRGBP_MPC	-0.455970	0.071137	-6.409737	0.0000
_MSM--XRGBP_MSM	-0.450583	0.067627	-6.662786	0.0000
_MST--XRGBP_MST	-0.121266	0.104843	-1.156646	0.2474
_MTA--XRGBP_MTA	-0.067118	0.101300	-0.662561	0.5076
_MTN--XRGBP_MTN	-0.552387	0.074887	-7.376286	0.0000
_MUR--XRGBP_MUR	-0.144528	0.081461	-1.774214	0.0760
_NCS--XRGBP_NCS	-0.426976	0.431801	-0.988826	0.3228
_NPK--XRGBP_NPK	-0.126001	0.056199	-2.242031	0.0250
_NPN--XRGBP_NPN	-0.239764	0.068045	-3.523602	0.0004
_NTC--XRGBP_NTC	-0.127942	0.063265	-2.022319	0.0431
_OCE--XRGBP_OCE	0.020448	0.072474	0.282136	0.7778
_OLG--XRGBP_OLG	0.039781	0.259266	0.153439	0.8781
_OMN--XRGBP_OMN	-0.053606	0.080744	-0.663895	0.5068
_PIK--XRGBP_PIK	-0.234949	0.057572	-4.080982	0.0000
_PMM--XRGBP_PMM	-0.187121	0.086817	-2.155342	0.0311
_PMV--XRGBP_PMV	-0.287528	0.224326	-1.281743	0.1999
_PNC--XRGBP_PNC	-0.407616	0.211969	-1.922996	0.0545
_PPC--XRGBP_PPC	-0.369473	0.068647	-5.382239	0.0000
_PWK--XRGBP_PWK	-0.170447	0.051914	-3.283275	0.0010
_RBW--XRGBP_RBW	-0.248680	0.072212	-3.443732	0.0006
_RLO--XRGBP_RLO	-0.194057	0.061707	-3.144815	0.0017
_RTN--XRGBP_RTN	-0.083421	0.422868	-0.197274	0.8436
_SAP--XRGBP_SAP	0.119909	0.093288	1.285366	0.1987
_SBL--XRGBP_SBL	-0.139928	0.116341	-1.202743	0.2291
_SDH--XRGBP_SDH	-0.158228	0.143520	-1.102480	0.2703
_SER--XRGBP_SER	-0.094405	0.142122	-0.664252	0.5065
_SHF--XRGBP_SHF	-0.019314	0.069815	-0.276650	0.7820
_SHP--XRGBP_SHP	-0.277172	0.064952	-4.267355	0.0000
_SOL--XRGBP_SOL	0.081935	0.062809	1.304504	0.1921
_SOV--XRGBP_SOV	-0.394082	0.132032	-2.984749	0.0028
_SPA--XRGBP_SPA	0.128795	0.137264	0.938302	0.3481
_SPG--XRGBP_SPG	-0.168041	0.109015	-1.541448	0.1232
_SUI--XRGBP_SUI	-0.117481	0.063943	-1.837290	0.0662
_SYC--XRGBP_SYC	-0.161794	0.056364	-2.870530	0.0041
_TDH--XRGBP_TDH	-0.029707	0.144442	-0.205666	0.8371
_TFG--XRGBP_TFG	-0.581477	0.069263	-8.395245	0.0000
_TPC--XRGBP_TPC	-0.183819	0.132955	-1.382565	0.1668
_TRE--XRGBP_TRE	0.254324	0.071082	3.577892	0.0003
_TRU--XRGBP_TRU	-0.486493	0.067536	-7.203497	0.0000
_VLE--XRGBP_VLE	0.020708	0.113909	0.181794	0.8557
_WBO--XRGBP_WBO	-0.064404	0.062460	-1.031120	0.3025
_WHL--XRGBP_WHL	-0.435443	0.063686	-6.837352	0.0000
_WNH--XRGBP_WNH	-0.134807	0.116020	-1.161935	0.2453
_ADH--J203_ADH	0.595443	0.051965	11.45852	0.0000
_ADR--J203_ADR	0.581811	0.044932	12.94871	0.0000
_AEG--J203_AEG	0.830954	0.046564	17.84530	0.0000
_AFE--J203_AFE	0.715469	0.034365	20.81958	0.0000
_AFR--J203_AFR	0.715476	0.057559	12.43025	0.0000
_AFX--J203_AFX	0.587867	0.037335	15.74560	0.0000
_AHL--J203_AHL	-0.139100	0.502298	-0.276927	0.7818
_AME--J203_AME	0.434387	0.151014	2.876461	0.0040

_AOO--J203_AOO	0.408388	0.047958	8.515594	0.0000
_APK--J203_APK	0.516377	0.048004	10.75695	0.0000
_APN--J203_APN	0.693656	0.045369	15.28922	0.0000
_ARL--J203_ARL	0.590511	0.041140	14.35376	0.0000
_ART--J203_ART	0.604023	0.049173	12.28373	0.0000
_ASR--J203_ASR	0.768805	0.050442	15.24147	0.0000
_ATN--J203_ATN	0.680397	0.043642	15.59028	0.0000
_BCF--J203_BCF	0.431586	0.041063	10.51031	0.0000
_BDM--J203_BDM	0.664876	0.138419	4.803353	0.0000
_BEL--J203_BEL	0.735494	0.063702	11.54584	0.0000
_BSR--J203_BSR	1.406635	0.298867	4.706565	0.0000
_BVT--J203_BVT	0.795066	0.031284	25.41483	0.0000
_CAT--J203_CAT	0.589074	0.043282	13.61001	0.0000
_CCL--J203_CCL	0.372089	0.080031	4.649295	0.0000
_CKS--J203_CKS	0.468876	0.050754	9.238249	0.0000
_CMH--J203_CMH	0.586218	0.052959	11.06932	0.0000
_COM--J203_COM	0.387606	0.077691	4.989081	0.0000
_CRG--J203_CRG	0.414248	0.059994	6.904797	0.0000
_CSB--J203_CSB	0.520181	0.048557	10.71272	0.0000
_CUL--J203_CUL	0.502253	0.143372	3.503155	0.0005
_DAW--J203_DAW	0.522573	0.057856	9.032376	0.0000
_DCT--J203_DCT	0.630910	0.054245	11.63081	0.0000
_DON--J203_DON	0.739182	0.130600	5.659906	0.0000
_DST--J203_DST	0.575942	0.042464	13.56315	0.0000
_DTC--J203_DTC	0.954264	0.051955	18.36708	0.0000
_EOH--J203_EOH	0.520066	0.043764	11.88351	0.0000
_FBR--J203_FBR	0.513518	0.052935	9.700841	0.0000
_GRT--J203_GRT	0.543701	0.034084	15.95180	0.0000
_ILA--J203_ILA	0.502925	0.057831	8.696516	0.0000
_ILV--J203_ILV	0.596330	0.040986	14.54942	0.0000
_IPL--J203_IPL	0.882026	0.039744	22.19250	0.0000
_ITE--J203_ITE	0.433222	0.052280	8.286641	0.0000
_IVT--J203_IVT	0.554786	0.048621	11.41042	0.0000
_JDG--J203_JDG	0.740198	0.044276	16.71785	0.0000
_JSC--J203_JSC	0.715197	0.069627	10.27184	0.0000
_KGM--J203_KGM	0.446009	0.044905	9.932353	0.0000
_MAS--J203_MAS	0.437278	0.081351	5.375172	0.0000
_MDC--J203_MDC	0.605933	0.036544	16.58110	0.0000
_MFL--J203_MFL	0.877816	0.141954	6.183814	0.0000
_MPC--J203_MPC	0.756198	0.042061	17.97874	0.0000
_MSM--J203_MSM	0.703547	0.039985	17.59520	0.0000
_MST--J203_MST	0.648653	0.061990	10.46389	0.0000
_MTA--J203_MTA	0.508544	0.059895	8.490608	0.0000
_MTN--J203_MTN	0.947992	0.044278	21.41013	0.0000
_MUR--J203_MUR	0.837024	0.048164	17.37845	0.0000
_NCS--J203_NCS	0.302091	0.255307	1.183245	0.2367
_NPK--J203_NPK	0.726796	0.033229	21.87264	0.0000
_NPN--J203_NPN	0.817291	0.040233	20.31420	0.0000
_NTC--J203_NTC	0.754913	0.037406	20.18144	0.0000
_OCE--J203_OCE	0.537482	0.042851	12.54296	0.0000
_OLG--J203_OLG	0.984384	0.153294	6.421544	0.0000
_OMN--J203_OMN	0.610680	0.047741	12.79153	0.0000
_PIK--J203_PIK	0.646231	0.034040	18.98448	0.0000
_PMM--J203_PMM	0.287045	0.051332	5.591973	0.0000
_PMV--J203_PMV	0.959582	0.132635	7.234737	0.0000
_PNC--J203_PNC	0.689834	0.125329	5.504183	0.0000
_PPC--J203_PPC	0.692385	0.040588	17.05880	0.0000
_PWK--J203_PWK	0.645415	0.030695	21.02704	0.0000

_RBW--J203_RBW	0.523252	0.042696	12.25519	0.0000
_RLO--J203_RLO	0.768942	0.036485	21.07561	0.0000
_RTN--J203_RTN	0.371149	0.250025	1.484446	0.1377
_SAP--J203_SAP	0.991874	0.055157	17.98264	0.0000
_SBL--J203_SBL	0.500539	0.068788	7.276567	0.0000
_SDH--J203_SDH	0.574622	0.084858	6.771578	0.0000
_SER--J203_SER	0.612499	0.084031	7.288947	0.0000
_SHF--J203_SHF	0.886832	0.041279	21.48379	0.0000
_SHP--J203_SHP	0.681655	0.038403	17.74985	0.0000
_SOL--J203_SOL	1.116940	0.037137	30.07651	0.0000
_SOV--J203_SOV	0.546121	0.078065	6.995686	0.0000
_SPA--J203_SPA	0.502583	0.081159	6.192595	0.0000
_SPG--J203_SPG	0.842839	0.064457	13.07608	0.0000
_SUI--J203_SUI	0.674923	0.037807	17.85187	0.0000
_SYC--J203_SYC	0.458682	0.033326	13.76361	0.0000
_TDH--J203_TDH	0.580374	0.085403	6.795720	0.0000
_TFG--J203_TFG	0.731270	0.040952	17.85659	0.0000
_TPC--J203_TPC	0.398234	0.078611	5.065869	0.0000
_TRE--J203_TRE	0.637842	0.042028	15.17659	0.0000
_TRU--J203_TRU	0.751271	0.039931	18.81411	0.0000
_VLE--J203_VLE	0.565783	0.067350	8.400672	0.0000
_WBO--J203_WBO	0.701191	0.036930	18.98698	0.0000
_WHL--J203_WHL	0.729399	0.037655	19.37056	0.0000
_WNH--J203_WNH	0.225803	0.068598	3.291688	0.0010

Weighted Statistics

R-squared	0.117822	Mean dependent var	-0.434978
Adjusted R-squared	0.113228	S.D. dependent var	1.236740
S.E. of regression	1.002610	Sum squared resid	51930.00
F-statistic	25.64902	Durbin-Watson stat	2.168884
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.099713	Mean dependent var	-6.781828
Sum squared resid	4048153.	Durbin-Watson stat	1.961996

Pre-2008 currency crisis: 7/07/2002 – 24/09/2008

Dependent Variable: RETURNS?
Method: Pooled EGLS (Cross-section SUR)
Date: 10/15/13 Time: 21:40
Sample: 7/07/2002 9/21/2008
Included observations: 325
Cross-sections included: 90
Total pool (balanced) observations: 29250
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_ADH--C	-0.563825	0.811592	-0.694715	0.4872
_ADR--C	-3.246009	0.565043	-5.744709	0.0000
_AEG--C	-1.329979	0.642295	-2.070667	0.0384

_AFE--C	-2.575224	0.497772	-5.173505	0.0000
_AFR--C	-2.177388	0.733364	-2.969041	0.0030
_AFX--C	-3.630530	0.515625	-7.041022	0.0000
_AHL--C	-7.970934	9.046912	-0.881067	0.3783
_AME--C	-3.486604	2.730763	-1.276787	0.2017
_AOO--C	-4.536309	0.606740	-7.476531	0.0000
_APK--C	-3.373837	0.684091	-4.931852	0.0000
_APN--C	-2.294539	0.627591	-3.656106	0.0003
_ARL--C	-2.501390	0.636278	-3.931283	0.0001
_ART--C	-2.130852	0.713252	-2.987516	0.0028
_ASR--C	-3.697498	0.774048	-4.776836	0.0000
_ATN--C	-2.417052	0.582712	-4.147934	0.0000
_BCF--C	-4.553712	0.539542	-8.439952	0.0000
_BDM--C	-0.697614	2.271788	-0.307077	0.7588
_BEL--C	-2.945056	0.749092	-3.931502	0.0001
_BSR--C	35.18769	5.130157	6.858988	0.0000
_BVT--C	-1.916227	0.456762	-4.195242	0.0000
_CAT--C	-2.933562	0.649309	-4.517973	0.0000
_CCL--C	-2.296313	1.081478	-2.123309	0.0337
_CKS--C	-3.891999	0.606318	-6.419072	0.0000
_CMH--C	-3.614821	0.775170	-4.663266	0.0000
_COM--C	-1.792392	1.160328	-1.544729	0.1224
_CRG--C	-3.556964	0.949467	-3.746273	0.0002
_CSB--C	-4.270020	0.762905	-5.597055	0.0000
_CUL--C	0.059892	1.407048	0.042565	0.9660
_DAW--C	-1.157395	0.796188	-1.453671	0.1460
_DCT--C	-1.894521	0.738492	-2.565392	0.0103
_DON--C	-0.162092	1.925509	-0.084181	0.9329
_DST--C	-2.819089	0.644990	-4.370751	0.0000
_DTC--C	-0.681746	0.782443	-0.871304	0.3836
_EOH--C	-3.011299	0.607617	-4.955919	0.0000
_FBR--C	-2.741884	0.843244	-3.251591	0.0011
_GRT--C	-2.967161	0.526772	-5.632727	0.0000
_ILA--C	-3.269523	0.747253	-4.375390	0.0000
_ILV--C	-2.460711	0.577456	-4.261296	0.0000
_IPL--C	-1.156059	0.554026	-2.086652	0.0369
_ITE--C	-3.628112	0.668683	-5.425758	0.0000
_IVT--C	-3.636708	0.679151	-5.354783	0.0000
_JDG--C	-2.319160	0.649352	-3.571501	0.0004
_JSC--C	0.402174	1.032006	0.389701	0.6968
_KGM--C	-3.454177	0.573518	-6.022786	0.0000
_MAS--C	-4.341212	1.026653	-4.228510	0.0000
_MDC--C	-2.891811	0.517980	-5.582867	0.0000
_MFL--C	2.481829	2.523044	0.983665	0.3253
_MPC--C	-1.705421	0.591128	-2.885028	0.0039
_MSM--C	-2.075699	0.598125	-3.470346	0.0005
_MST--C	-3.048531	0.652712	-4.670560	0.0000
_MTA--C	-3.092602	0.733597	-4.215666	0.0000
_MTN--C	0.076249	0.663514	0.114917	0.9085
_MUR--C	-1.760559	0.630950	-2.790330	0.0053
_NCS--C	1.025479	4.508923	0.227433	0.8201
_NPK--C	-2.159898	0.442577	-4.880279	0.0000
_NPN--C	-1.076879	0.595472	-1.808444	0.0705
_NTC--C	-1.594295	0.558600	-2.854093	0.0043
_OCE--C	-3.762839	0.545095	-6.903090	0.0000
_OLG--C	0.775034	2.642247	0.293324	0.7693
_OMN--C	-3.767692	0.684167	-5.506978	0.0000
_PIK--C	-2.337928	0.488636	-4.784601	0.0000

_PMM--C	-3.239903	0.843707	-3.840081	0.0001
_PMV--C	-2.380633	1.382426	-1.722069	0.0851
_PNC--C	1.241045	2.209350	0.561724	0.5743
_PPC--C	-1.786192	0.579752	-3.080957	0.0021
_PWK--C	-2.803227	0.412950	-6.788288	0.0000
_RBW--C	-2.799874	0.648492	-4.317518	0.0000
_RLO--C	-2.333427	0.511183	-4.564756	0.0000
_RTN--C	-3.281401	0.898222	-3.653217	0.0003
_SAP--C	-1.385662	0.613543	-2.258458	0.0239
_SBL--C	-3.720757	0.856464	-4.344322	0.0000
_SDH--C	-2.760886	0.915900	-3.014398	0.0026
_SER--C	-3.328676	1.058387	-3.145047	0.0017
_SHF--C	-0.737449	0.579434	-1.272704	0.2031
_SHP--C	-1.367655	0.541184	-2.527154	0.0115
_SOL--C	1.056641	0.575536	1.835926	0.0664
_SOV--C	-1.903131	1.224228	-1.554556	0.1201
_SPA--C	-3.478192	1.076229	-3.231832	0.0012
_SPG--C	-2.492874	0.674231	-3.697359	0.0002
_SUI--C	-2.531994	0.552378	-4.583807	0.0000
_SYC--C	-4.255910	0.433853	-9.809561	0.0000
_TDH--C	-4.161603	0.993186	-4.190155	0.0000
_TFG--C	-1.867003	0.603368	-3.094301	0.0020
_TPC--C	-3.862082	1.283890	-3.008110	0.0026
_TRE--C	-2.910347	0.568065	-5.123267	0.0000
_TRU--C	-2.002910	0.603222	-3.320354	0.0009
_VLE--C	-0.674637	1.130123	-0.596959	0.5505
_WBO--C	-2.140878	0.515469	-4.153263	0.0000
_WHL--C	-2.840661	0.551558	-5.150246	0.0000
_WNH--C	-3.102186	0.966700	-3.209048	0.0013
_ADH--XRGBP_ADH	-0.743666	0.141248	-5.264981	0.0000
_ADR--XRGBP_ADR	-0.334750	0.098339	-3.404051	0.0007
_AEG--XRGBP_AEG	-0.278323	0.111784	-2.489835	0.0128
_AFE--XRGBP_AFE	-0.193338	0.086631	-2.231737	0.0256
_AFR--XRGBP_AFR	0.017939	0.127633	0.140553	0.8882
_AFX--XRGBP_AFX	-0.206311	0.089738	-2.299029	0.0215
_AHL--XRGBP_AHL	1.131026	1.574503	0.718339	0.4726
_AME--XRGBP_AME	-0.471175	0.475256	-0.991413	0.3215
_AOO--XRGBP_AOO	0.033942	0.105596	0.321435	0.7479
_APK--XRGBP_APK	-0.229440	0.119058	-1.927137	0.0540
_APN--XRGBP_APN	-0.460518	0.109224	-4.216252	0.0000
_ARL--XRGBP_ARL	-0.258173	0.110736	-2.331422	0.0197
_ART--XRGBP_ART	-0.095668	0.124133	-0.770691	0.4409
_ASR--XRGBP_ASR	0.089748	0.134713	0.666217	0.5053
_ATN--XRGBP_ATN	-0.245350	0.101414	-2.419296	0.0156
_BCF--XRGBP_BCF	-0.174543	0.093901	-1.858804	0.0631
_BDM--XRGBP_BDM	0.445355	0.395377	1.126407	0.2600
_BEL--XRGBP_BEL	-0.030839	0.130370	-0.236547	0.8130
_BSR--XRGBP_BSR	-1.658545	0.892840	-1.857605	0.0632
_BVT--XRGBP_BVT	-0.186061	0.079494	-2.340572	0.0193
_CAT--XRGBP_CAT	-0.085509	0.113004	-0.756692	0.4492
_CCL--XRGBP_CCL	-0.338475	0.188218	-1.798313	0.0721
_CKS--XRGBP_CKS	-0.128180	0.105522	-1.214725	0.2245
_CMH--XRGBP_CMH	-0.175131	0.134909	-1.298144	0.1942
_COM--XRGBP_COM	-0.076491	0.201941	-0.378780	0.7049
_CRG--XRGBP_CRG	-0.229860	0.165243	-1.391044	0.1642
_CSB--XRGBP_CSB	-0.115358	0.132774	-0.868828	0.3849
_CUL--XRGBP_CUL	-0.019974	0.244879	-0.081568	0.9350
_DAW--XRGBP_DAW	-0.258993	0.138567	-1.869090	0.0616

_DCT--XRGBP_DCT	-0.174922	0.128525	-1.360991	0.1735
_DON--XRGBP_DON	-0.078371	0.335111	-0.233865	0.8151
_DST--XRGBP_DST	-0.195135	0.112252	-1.738355	0.0822
_DTC--XRGBP_DTC	0.190788	0.136175	1.401052	0.1612
_EOH--XRGBP_EOH	-0.124693	0.105748	-1.179147	0.2383
_FBR--XRGBP_FBR	-0.229615	0.146756	-1.564599	0.1177
_GRT--XRGBP_GRT	-0.208368	0.091678	-2.272824	0.0230
_ILA--XRGBP_ILA	-0.048854	0.130050	-0.375652	0.7072
_ILV--XRGBP_ILV	0.078746	0.100499	0.783551	0.4333
_IPL--XRGBP_IPL	-0.465905	0.096421	-4.831969	0.0000
_ITE--XRGBP_ITE	-0.227921	0.116376	-1.958492	0.0502
_IVT--XRGBP_IVT	-0.099969	0.118198	-0.845775	0.3977
_JDG--XRGBP_JDG	-0.426401	0.113012	-3.773077	0.0002
_JSC--XRGBP_JSC	-0.250055	0.179608	-1.392229	0.1639
_KGM--XRGBP_KGM	-0.170902	0.099814	-1.712210	0.0869
_MAS--XRGBP_MAS	-0.186682	0.178676	-1.044808	0.2961
_MDC--XRGBP_MDC	-0.156332	0.090148	-1.734171	0.0829
_MFL--XRGBP_MFL	-0.595620	0.439105	-1.356443	0.1750
_MPC--XRGBP_MPC	-0.366195	0.102878	-3.559489	0.0004
_MSM--XRGBP_MSM	-0.499254	0.104096	-4.796082	0.0000
_MST--XRGBP_MST	-0.044675	0.113596	-0.393275	0.6941
_MTA--XRGBP_MTA	-0.466618	0.127674	-3.654771	0.0003
_MTN--XRGBP_MTN	-0.531945	0.115476	-4.606519	0.0000
_MUR--XRGBP_MUR	-0.118998	0.109809	-1.083682	0.2785
_NCS--XRGBP_NCS	-1.013880	0.784722	-1.292024	0.1964
_NPK--XRGBP_NPK	-0.220505	0.077025	-2.862778	0.0042
_NPN--XRGBP_NPN	-0.362651	0.103635	-3.499327	0.0005
_NTC--XRGBP_NTC	-0.143466	0.097217	-1.475720	0.1400
_OCE--XRGBP_OCE	-0.134611	0.094867	-1.418943	0.1559
_OLG--XRGBP_OLG	0.113226	0.459850	0.246224	0.8055
_OMN--XRGBP_OMN	-0.076986	0.119071	-0.646552	0.5179
_PIK--XRGBP_PIK	-0.379234	0.085041	-4.459425	0.0000
_PMM--XRGBP_PMM	-0.306093	0.146837	-2.084578	0.0371
_PMV--XRGBP_PMV	-0.028474	0.240594	-0.118348	0.9058
_PNC--XRGBP_PNC	-0.597477	0.384510	-1.553866	0.1202
_PPC--XRGBP_PPC	-0.429121	0.100899	-4.252992	0.0000
_PWK--XRGBP_PWK	-0.232048	0.071869	-3.228766	0.0012
_RBW--XRGBP_RBW	-0.365372	0.112862	-3.237333	0.0012
_RLO--XRGBP_RLO	-0.256123	0.088965	-2.878917	0.0040
_RTN--XRGBP_RTN	-0.302089	0.156324	-1.932449	0.0533
_SAP--XRGBP_SAP	0.257742	0.106780	2.413776	0.0158
_SBL--XRGBP_SBL	-0.183946	0.149057	-1.234067	0.2172
_SDH--XRGBP_SDH	-0.219723	0.159401	-1.378429	0.1681
_SER--XRGBP_SER	-0.354608	0.184199	-1.925134	0.0542
_SHF--XRGBP_SHF	0.005806	0.100843	0.057574	0.9541
_SHP--XRGBP_SHP	-0.393931	0.094186	-4.182459	0.0000
_SOL--XRGBP_SOL	0.008725	0.100165	0.087105	0.9306
_SOV--XRGBP_SOV	-0.753949	0.213062	-3.538643	0.0004
_SPA--XRGBP_SPA	-0.011924	0.187304	-0.063659	0.9492
_SPG--XRGBP_SPG	-0.214878	0.117342	-1.831217	0.0671
_SUI--XRGBP_SUI	-0.129925	0.096135	-1.351488	0.1765
_SYC--XRGBP_SYC	-0.240979	0.075507	-3.191485	0.0014
_TDH--XRGBP_TDH	-0.056577	0.172852	-0.327315	0.7434
_TFG--XRGBP_TFG	-0.519811	0.105009	-4.950172	0.0000
_TPC--XRGBP_TPC	-0.384077	0.223445	-1.718886	0.0856
_TRE--XRGBP_TRE	0.014934	0.098865	0.151059	0.8799
_TRU--XRGBP_TRU	-0.391169	0.104983	-3.726010	0.0002
_VLE--XRGBP_VLE	-0.213855	0.196684	-1.087306	0.2769

_WBO--XRGBP_WBO	-0.116760	0.089711	-1.301514	0.1931
_WHL--XRGBP_WHL	-0.345240	0.095992	-3.596549	0.0003
_WNH--XRGBP_WNH	-0.218649	0.168242	-1.299606	0.1937
_ADH--J203_ADH	0.796375	0.085226	9.344309	0.0000
_ADR--J203_ADR	0.597868	0.059335	10.07606	0.0000
_AEG--J203_AEG	0.786801	0.067448	11.66534	0.0000
_AFE--J203_AFE	0.695667	0.052271	13.30877	0.0000
_AFR--J203_AFR	0.672915	0.077011	8.737909	0.0000
_AFX--J203_AFX	0.581264	0.054146	10.73510	0.0000
_AHL--J203_AHL	-0.356728	0.950021	-0.375495	0.7073
_AME--J203_AME	0.400375	0.286759	1.396207	0.1627
_AOO--J203_AOO	0.391293	0.063714	6.141386	0.0000
_APK--J203_APK	0.582024	0.071837	8.102026	0.0000
_APN--J203_APN	0.703044	0.065904	10.66775	0.0000
_ARL--J203_ARL	0.662458	0.066816	9.914669	0.0000
_ART--J203_ART	0.650843	0.074899	8.689608	0.0000
_ASR--J203_ASR	0.525337	0.081283	6.463044	0.0000
_ATN--J203_ATN	0.684041	0.061191	11.17879	0.0000
_BCF--J203_BCF	0.418098	0.056658	7.379379	0.0000
_BDM--J203_BDM	0.776253	0.238562	3.253887	0.0011
_BEL--J203_BEL	0.639002	0.078663	8.123334	0.0000
_BSR--J203_BSR	3.442980	0.538721	6.391030	0.0000
_BVT--J203_BVT	0.781997	0.047965	16.30356	0.0000
_CAT--J203_CAT	0.632543	0.068184	9.276958	0.0000
_CCL--J203_CCL	0.477565	0.113567	4.205154	0.0000
_CKS--J203_CKS	0.520272	0.063670	8.171408	0.0000
_CMH--J203_CMH	0.491926	0.081401	6.043250	0.0000
_COM--J203_COM	0.515983	0.121847	4.234695	0.0000
_CRG--J203_CRG	0.492977	0.099704	4.944402	0.0000
_CSB--J203_CSB	0.439459	0.080113	5.485481	0.0000
_CUL--J203_CUL	0.440179	0.147755	2.979118	0.0029
_DAW--J203_DAW	0.748488	0.083608	8.952339	0.0000
_DCT--J203_DCT	0.668458	0.077549	8.619774	0.0000
_DON--J203_DON	0.858165	0.202199	4.244167	0.0000
_DST--J203_DST	0.646295	0.067731	9.542126	0.0000
_DTC--J203_DTC	0.926524	0.082165	11.27641	0.0000
_EOH--J203_EOH	0.530770	0.063806	8.318468	0.0000
_FBR--J203_FBR	0.473377	0.088550	5.345902	0.0000
_GRT--J203_GRT	0.524911	0.055317	9.489225	0.0000
_ILA--J203_ILA	0.517585	0.078469	6.596008	0.0000
_ILV--J203_ILV	0.658842	0.060639	10.86499	0.0000
_IPL--J203_IPL	0.892062	0.058179	15.33318	0.0000
_ITE--J203_ITE	0.498729	0.070219	7.102510	0.0000
_IVT--J203_IVT	0.500913	0.071318	7.023642	0.0000
_JDG--J203_JDG	0.739480	0.068189	10.84460	0.0000
_JSC--J203_JSC	0.775164	0.108371	7.152838	0.0000
_KGM--J203_KGM	0.500842	0.060225	8.316127	0.0000
_MAS--J203_MAS	0.465567	0.107809	4.318425	0.0000
_MDC--J203_MDC	0.655044	0.054393	12.04273	0.0000
_MFL--J203_MFL	1.244384	0.264946	4.696740	0.0000
_MPC--J203_MPC	0.743632	0.062075	11.97964	0.0000
_MSM--J203_MSM	0.725991	0.062809	11.55864	0.0000
_MST--J203_MST	0.579894	0.068542	8.460463	0.0000
_MTA--J203_MTA	0.608413	0.077035	7.897829	0.0000
_MTN--J203_MTN	0.954600	0.069676	13.70056	0.0000
_MUR--J203_MUR	0.731040	0.066256	11.03350	0.0000
_NCS--J203_NCS	0.337151	0.473484	0.712063	0.4764
_NPK--J203_NPK	0.751881	0.046475	16.17811	0.0000

_NPN--J203_NPN	0.830003	0.062531	13.27348	0.0000
_NTC--J203_NTC	0.754464	0.058659	12.86190	0.0000
_OCE--J203_OCE	0.562062	0.057241	9.819264	0.0000
_OLG--J203_OLG	0.937855	0.277464	3.380099	0.0007
_OMN--J203_OMN	0.518323	0.071845	7.214490	0.0000
_PIK--J203_PIK	0.718901	0.051312	14.01041	0.0000
_PMM--J203_PMM	0.285972	0.088598	3.227744	0.0012
_PMV--J203_PMV	0.447831	0.145169	3.084887	0.0020
_PNC--J203_PNC	0.842293	0.232005	3.630493	0.0003
_PPC--J203_PPC	0.753789	0.060880	12.38153	0.0000
_PWK--J203_PWK	0.634664	0.043364	14.63569	0.0000
_RBW--J203_RBW	0.559921	0.068098	8.222220	0.0000
_RLO--J203_RLO	0.714751	0.053680	13.31513	0.0000
_RTN--J203_RTN	0.535482	0.094323	5.677124	0.0000
_SAP--J203_SAP	0.889779	0.064429	13.81032	0.0000
_SBL--J203_SBL	0.532748	0.089938	5.923517	0.0000
_SDH--J203_SDH	0.450136	0.096179	4.680183	0.0000
_SER--J203_SER	0.523455	0.111142	4.709793	0.0000
_SHF--J203_SHF	0.900185	0.060847	14.79431	0.0000
_SHP--J203_SHP	0.789135	0.056830	13.88589	0.0000
_SOL--J203_SOL	1.104298	0.060437	18.27180	0.0000
_SOV--J203_SOV	0.625004	0.128557	4.861696	0.0000
_SPA--J203_SPA	0.524797	0.113015	4.643589	0.0000
_SPG--J203_SPG	0.769089	0.070801	10.86263	0.0000
_SUI--J203_SUI	0.708960	0.058006	12.22229	0.0000
_SYC--J203_SYC	0.447310	0.045559	9.818213	0.0000
_TDH--J203_TDH	0.569676	0.104295	5.462158	0.0000
_TFG--J203_TFG	0.750435	0.063360	11.84399	0.0000
_TPC--J203_TPC	0.431358	0.134822	3.199462	0.0014
_TRE--J203_TRE	0.667154	0.059653	11.18396	0.0000
_TRU--J203_TRU	0.717106	0.063345	11.32071	0.0000
_VLE--J203_VLE	0.731964	0.118675	6.167812	0.0000
_WBO--J203_WBO	0.674713	0.054130	12.46474	0.0000
_WHL--J203_WHL	0.625893	0.057919	10.80627	0.0000
_WNH--J203_WNH	0.091020	0.101514	0.896632	0.3699

Weighted Statistics

R-squared	0.109494	Mean dependent var	-0.517000
Adjusted R-squared	0.101228	S.D. dependent var	1.291598
S.E. of regression	1.004648	Sum squared resid	29250.00
F-statistic	13.24641	Durbin-Watson stat	2.144456
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.092155	Mean dependent var	-7.786783
Sum squared resid	2964198.	Durbin-Watson stat	1.949138

Post-2008 currency crisis: 07/12/2008 – 21/07/2013

Dependent Variable: RETURNS?
Method: Pooled EGLS (Cross-section SUR)
Date: 10/15/13 Time: 21:50
Sample: 12/07/2008 7/21/2013
Included observations: 242
Cross-sections included: 90
Total pool (balanced) observations: 21780
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_ADH--C	-4.154450	0.498320	-8.336917	0.0000
_ADR--C	-3.322879	0.656476	-5.061693	0.0000
_AEG--C	-1.661296	0.555583	-2.990187	0.0028
_AFE--C	-2.501257	0.403120	-6.204743	0.0000
_AFR--C	-3.778228	0.766199	-4.931135	0.0000
_AFX--C	-3.069471	0.461766	-6.647237	0.0000
_AHL--C	-4.273274	2.007946	-2.128182	0.0333
_AME--C	-2.936587	0.555858	-5.282977	0.0000
_AOO--C	-3.782870	0.714785	-5.292318	0.0000
_APK--C	-3.536270	0.583838	-6.056937	0.0000
_APN--C	-1.653010	0.591030	-2.796830	0.0052
_ARL--C	-4.187183	0.425647	-9.837223	0.0000
_ART--C	-4.178426	0.575478	-7.260794	0.0000
_ASR--C	0.051106	0.528163	0.096761	0.9229
_ATN--C	-2.470100	0.569924	-4.334087	0.0000
_BCF--C	-3.639962	0.550532	-6.611719	0.0000
_BDM--C	-4.911035	1.274508	-3.853278	0.0001
_BEL--C	-0.210573	0.963951	-0.218448	0.8271
_BSR--C	-1.862272	0.702100	-2.652429	0.0080
_BVT--C	-1.056455	0.368675	-2.865546	0.0042
_CAT--C	-3.275936	0.475650	-6.887278	0.0000
_CCL--C	-3.071247	1.061917	-2.892173	0.0038
_CKS--C	-4.331313	0.789447	-5.486512	0.0000
_CMH--C	-3.013657	0.603267	-4.995557	0.0000
_COM--C	-2.885936	0.898267	-3.212781	0.0013
_CRG--C	-4.192057	0.600015	-6.986592	0.0000
_CSB--C	-3.132069	0.488549	-6.410961	0.0000
_CUL--C	1.211120	2.191985	0.552522	0.5806
_DAW--C	-5.058540	0.715498	-7.069958	0.0000
_DCT--C	-2.287680	0.717186	-3.189799	0.0014
_DON--C	-3.487107	1.595511	-2.185574	0.0289
_DST--C	-3.470784	0.457196	-7.591459	0.0000
_DTC--C	-0.784755	0.557647	-1.407261	0.1594
_EOH--C	-2.366879	0.560815	-4.220429	0.0000
_FBR--C	-1.892392	0.522372	-3.622694	0.0003
_GRT--C	-2.248434	0.375300	-5.991023	0.0000
_ILA--C	-3.194535	0.809364	-3.946970	0.0001
_ILV--C	-3.350033	0.498344	-6.722332	0.0000
_IPL--C	-1.624033	0.519804	-3.124319	0.0018
_ITE--C	-3.851020	0.734362	-5.244038	0.0000
_IVT--C	-2.678636	0.632962	-4.231908	0.0000
_JDG--C	-1.296096	0.517269	-2.505651	0.0122
_JSC--C	-1.931340	0.774190	-2.494657	0.0126
_KGM--C	-3.140763	0.516826	-6.077023	0.0000
_MAS--C	-5.389679	1.207258	-4.464397	0.0000

_MDC--C	-3.236857	0.433730	-7.462831	0.0000
_MFL--C	-2.815409	0.613259	-4.590893	0.0000
_MPC--C	-1.127400	0.522249	-2.158741	0.0309
_MSM--C	-1.792233	0.444392	-4.032996	0.0001
_MST--C	-1.347053	1.019468	-1.321330	0.1864
_MTA--C	-2.502495	0.732832	-3.414829	0.0006
_MTN--C	-0.479098	0.424386	-1.128923	0.2589
_MUR--C	-1.178545	0.635362	-1.854917	0.0636
_NCS--C	0.606618	1.482423	0.409207	0.6824
_NPK--C	-2.144455	0.426854	-5.023866	0.0000
_NPN--C	-0.481832	0.477764	-1.008514	0.3132
_NTC--C	-1.581140	0.412565	-3.832462	0.0001
_OCE--C	-4.018943	0.574978	-6.989737	0.0000
_OLG--C	1.926795	1.043632	1.846240	0.0649
_OMN--C	-2.288866	0.568694	-4.024775	0.0001
_PIK--C	-2.936564	0.403832	-7.271742	0.0000
_PMM--C	-3.644715	0.441869	-8.248397	0.0000
_PMV--C	6.363658	1.843825	3.451335	0.0006
_PNC--C	-1.536437	0.689187	-2.229347	0.0258
_PPC--C	-2.670547	0.510141	-5.234918	0.0000
_PWK--C	-2.273199	0.424072	-5.360410	0.0000
_RBW--C	-3.841225	0.456957	-8.406101	0.0000
_RLO--C	-1.983878	0.461682	-4.297063	0.0000
_RTN--C	-6.913951	5.164406	-1.338770	0.1807
_SAP--C	0.396207	0.840991	0.471119	0.6376
_SBL--C	-3.662889	1.050988	-3.485187	0.0005
_SDH--C	0.155284	1.398880	0.111006	0.9116
_SER--C	-2.474744	1.081966	-2.287267	0.0222
_SHF--C	-0.988539	0.508117	-1.945496	0.0517
_SHP--C	-2.278624	0.451886	-5.042472	0.0000
_SOL--C	0.798494	0.340950	2.341967	0.0192
_SOV--C	-3.499670	0.810168	-4.319683	0.0000
_SPA--C	-2.771071	1.035247	-2.676723	0.0074
_SPG--C	1.009210	1.055136	0.956474	0.3388
_SUI--C	-2.861626	0.460568	-6.213255	0.0000
_SYC--C	-3.775166	0.446474	-8.455509	0.0000
_TDH--C	-3.974642	1.351138	-2.941699	0.0033
_TFG--C	-1.970609	0.469309	-4.198960	0.0000
_TPC--C	-3.566434	0.685858	-5.199961	0.0000
_TRE--C	-2.764716	0.521569	-5.300765	0.0000
_TRU--C	-1.156334	0.435139	-2.657388	0.0079
_VLE--C	-3.179249	0.517690	-6.141219	0.0000
_WBO--C	-1.798434	0.472841	-3.803467	0.0001
_WHL--C	-1.164696	0.456257	-2.552720	0.0107
_WNH--C	-0.277329	0.846739	-0.327526	0.7433
_ADH--XRGBP_ADH	-0.148529	0.101226	-1.467307	0.1423
_ADR--XRGBP_ADR	-0.173325	0.133353	-1.299747	0.1937
_AEG--XRGBP_AEG	-0.126040	0.112858	-1.116802	0.2641
_AFE--XRGBP_AFE	0.097402	0.081888	1.189455	0.2343
_AFR--XRGBP_AFR	-0.479687	0.155641	-3.082005	0.0021
_AFX--XRGBP_AFX	0.162380	0.093801	1.731122	0.0834
_AHL--XRGBP_AHL	0.682021	0.407883	1.672100	0.0945
_AME--XRGBP_AME	0.000206	0.112914	0.001822	0.9985
_AOO--XRGBP_AOO	0.280020	0.145197	1.928548	0.0538
_APK--XRGBP_APK	-0.084703	0.118598	-0.714206	0.4751
_APN--XRGBP_APN	-0.165917	0.120058	-1.381964	0.1670
_ARL--XRGBP_ARL	-0.035130	0.086464	-0.406304	0.6845
_ART--XRGBP_ART	0.155148	0.116899	1.327195	0.1845

_ASR--XRGBP_ASR	0.095196	0.107288	0.887290	0.3749
_ATN--XRGBP_ATN	0.331911	0.115771	2.866959	0.0041
_BCF--XRGBP_BCF	-0.019011	0.111832	-0.169994	0.8650
_BDM--XRGBP_BDM	0.595842	0.258896	2.301468	0.0214
_BEL--XRGBP_BEL	0.150421	0.195812	0.768191	0.4424
_BSR--XRGBP_BSR	0.107873	0.142621	0.756360	0.4494
_BVT--XRGBP_BVT	-0.243849	0.074891	-3.256067	0.0011
_CAT--XRGBP_CAT	-0.014360	0.096621	-0.148625	0.8819
_CCL--XRGBP_CCL	0.223303	0.215712	1.035191	0.3006
_CKS--XRGBP_CKS	-0.080859	0.160364	-0.504223	0.6141
_CMH--XRGBP_CMH	-0.075893	0.122544	-0.619312	0.5357
_COM--XRGBP_COM	0.053292	0.182469	0.292061	0.7702
_CRG--XRGBP_CRG	0.234404	0.121884	1.923182	0.0545
_CSB--XRGBP_CSB	0.059227	0.099241	0.596799	0.5506
_CUL--XRGBP_CUL	0.010493	0.445268	0.023566	0.9812
_DAW--XRGBP_DAW	0.285076	0.145342	1.961411	0.0498
_DCT--XRGBP_DCT	-0.134621	0.145685	-0.924052	0.3555
_DON--XRGBP_DON	0.171126	0.324103	0.527997	0.5975
_DST--XRGBP_DST	0.120681	0.092872	1.299429	0.1938
_DTC--XRGBP_DTC	-0.050136	0.113277	-0.442598	0.6581
_EOH--XRGBP_EOH	-0.139831	0.113921	-1.227445	0.2197
_FBR--XRGBP_FBR	0.057433	0.106112	0.541252	0.5883
_GRT--XRGBP_GRT	-0.146579	0.076236	-1.922690	0.0545
_ILA--XRGBP_ILA	0.214058	0.164410	1.301980	0.1929
_ILV--XRGBP_ILV	-0.013570	0.101231	-0.134052	0.8934
_IPL--XRGBP_IPL	-0.565319	0.105590	-5.353908	0.0000
_ITE--XRGBP_ITE	0.173789	0.149174	1.165007	0.2440
_IVT--XRGBP_IVT	0.187430	0.128576	1.457735	0.1449
_JDG--XRGBP_JDG	-0.176023	0.105075	-1.675214	0.0939
_JSC--XRGBP_JSC	-0.037218	0.157265	-0.236658	0.8129
_KGM--XRGBP_KGM	-0.020870	0.104985	-0.198791	0.8424
_MAS--XRGBP_MAS	0.290491	0.245236	1.184540	0.2362
_MDC--XRGBP_MDC	-0.040266	0.088106	-0.457020	0.6477
_MFL--XRGBP_MFL	0.132552	0.124574	1.064042	0.2873
_MPC--XRGBP_MPC	-0.411369	0.106087	-3.877669	0.0001
_MSM--XRGBP_MSM	-0.392519	0.090271	-4.348217	0.0000
_MST--XRGBP_MST	-0.128806	0.207089	-0.621983	0.5340
_MTA--XRGBP_MTA	0.053762	0.148863	0.361151	0.7180
_MTN--XRGBP_MTN	-0.240048	0.086207	-2.784544	0.0054
_MUR--XRGBP_MUR	-0.027032	0.129064	-0.209447	0.8341
_NCS--XRGBP_NCS	0.195116	0.301131	0.647945	0.5170
_NPK--XRGBP_NPK	-0.002366	0.086709	-0.027291	0.9782
_NPN--XRGBP_NPN	-0.190024	0.097050	-1.957996	0.0502
_NTC--XRGBP_NTC	-0.203531	0.083806	-2.428592	0.0152
_OCE--XRGBP_OCE	0.111804	0.116798	0.957249	0.3385
_OLG--XRGBP_OLG	-0.317605	0.211998	-1.498152	0.1341
_OMN--XRGBP_OMN	0.061271	0.115521	0.530390	0.5958
_PIK--XRGBP_PIK	-0.088797	0.082032	-1.082461	0.2791
_PMM--XRGBP_PMM	-0.032790	0.089759	-0.365307	0.7149
_PMV--XRGBP_PMV	-0.811667	0.374544	-2.167078	0.0302
_PNC--XRGBP_PNC	-0.375586	0.139998	-2.682807	0.0073
_PPC--XRGBP_PPC	-0.244223	0.103627	-2.356750	0.0184
_PWK--XRGBP_PWK	-0.064098	0.086144	-0.744080	0.4568
_RBW--XRGBP_RBW	0.031104	0.092824	0.335082	0.7376
_RLO--XRGBP_RLO	-0.029258	0.093784	-0.311972	0.7551
_RTN--XRGBP_RTN	-0.044755	1.049068	-0.042661	0.9660
_SAP--XRGBP_SAP	0.127014	0.170834	0.743495	0.4572
_SBL--XRGBP_SBL	-0.280351	0.213492	-1.313168	0.1891

_SDH--XRGBP_SDH	-0.256167	0.284161	-0.901486	0.3673
_SER--XRGBP_SER	0.309894	0.219784	1.409990	0.1586
_SHF--XRGBP_SHF	0.020148	0.103216	0.195204	0.8452
_SHP--XRGBP_SHP	-0.241742	0.091794	-2.633533	0.0085
_SOL--XRGBP_SOL	0.274599	0.069259	3.964824	0.0001
_SOV--XRGBP_SOV	0.038877	0.164573	0.236230	0.8133
_SPA--XRGBP_SPA	0.082391	0.210294	0.391788	0.6952
_SPG--XRGBP_SPG	-0.357117	0.214334	-1.666166	0.0957
_SUI--XRGBP_SUI	-0.089425	0.093557	-0.955838	0.3392
_SYC--XRGBP_SYC	-0.149258	0.090694	-1.645726	0.0998
_TDH--XRGBP_TDH	0.024264	0.274463	0.088407	0.9296
_TFG--XRGBP_TFG	-0.576114	0.095333	-6.043190	0.0000
_TPC--XRGBP_TPC	-0.180332	0.139321	-1.294361	0.1956
_TRE--XRGBP_TRE	0.456569	0.105949	4.309346	0.0000
_TRU--XRGBP_TRU	-0.456879	0.088392	-5.168794	0.0000
_VLE--XRGBP_VLE	0.087120	0.105161	0.828448	0.4074
_WBO--XRGBP_WBO	-0.058087	0.096050	-0.604755	0.5453
_WHL--XRGBP_WHL	-0.437595	0.092681	-4.721494	0.0000
_WNH--XRGBP_WNH	-0.087182	0.172002	-0.506867	0.6123
_ADH--J203_ADH	0.166977	0.076589	2.180178	0.0293
_ADR--J203_ADR	0.419900	0.100897	4.161682	0.0000
_AEG--J203_AEG	0.743268	0.085390	8.704401	0.0000
_AFE--J203_AFE	0.555443	0.061957	8.964938	0.0000
_AFR--J203_AFR	0.218017	0.117760	1.851359	0.0641
_AFX--J203_AFX	0.508925	0.070971	7.170897	0.0000
_AHL--J203_AHL	0.288776	0.308610	0.935730	0.3494
_AME--J203_AME	0.472422	0.085432	5.529789	0.0000
_AOO--J203_AOO	0.328994	0.109858	2.994707	0.0028
_APK--J203_APK	0.410357	0.089733	4.573113	0.0000
_APN--J203_APN	0.638706	0.090838	7.031271	0.0000
_ARL--J203_ARL	0.328067	0.065419	5.014818	0.0000
_ART--J203_ART	0.332288	0.088448	3.756893	0.0002
_ASR--J203_ASR	0.949059	0.081176	11.69143	0.0000
_ATN--J203_ATN	0.610945	0.087594	6.974730	0.0000
_BCF--J203_BCF	0.284781	0.084614	3.365670	0.0008
_BDM--J203_BDM	0.322117	0.195885	1.644421	0.1001
_BEL--J203_BEL	0.965117	0.148154	6.514297	0.0000
_BSR--J203_BSR	0.746713	0.107909	6.919847	0.0000
_BVT--J203_BVT	0.802181	0.056663	14.15700	0.0000
_CAT--J203_CAT	0.427288	0.073105	5.844870	0.0000
_CCL--J203_CCL	0.015261	0.163211	0.093505	0.9255
_CKS--J203_CKS	0.273955	0.121334	2.257865	0.0240
_CMH--J203_CMH	0.372481	0.092719	4.017320	0.0001
_COM--J203_COM	0.428763	0.138059	3.105658	0.0019
_CRG--J203_CRG	0.252797	0.092219	2.741275	0.0061
_CSB--J203_CSB	0.446359	0.075087	5.944542	0.0000
_CUL--J203_CUL	0.815111	0.336896	2.419475	0.0156
_DAW--J203_DAW	0.164579	0.109968	1.496605	0.1345
_DCT--J203_DCT	0.321641	0.110227	2.917979	0.0035
_DON--J203_DON	0.432032	0.245221	1.761806	0.0781
_DST--J203_DST	0.385581	0.070268	5.487262	0.0000
_DTC--J203_DTC	0.789722	0.085707	9.214187	0.0000
_EOH--J203_EOH	0.461859	0.086194	5.358361	0.0000
_FBR--J203_FBR	0.571437	0.080286	7.117562	0.0000
_GRT--J203_GRT	0.562136	0.057682	9.745506	0.0000
_ILA--J203_ILA	0.398540	0.124395	3.203834	0.0014
_ILV--J203_ILV	0.433817	0.076593	5.663953	0.0000
_IPL--J203_IPL	0.664288	0.079891	8.314941	0.0000

_ITE--J203_ITE	0.191749	0.112867	1.698890	0.0894
_IVT--J203_IVT	0.462962	0.097283	4.758941	0.0000
_JDG--J203_JDG	0.809979	0.079501	10.18824	0.0000
_JSC--J203_JSC	0.205696	0.118989	1.728700	0.0839
_KGM--J203_KGM	0.424458	0.079433	5.343580	0.0000
_MAS--J203_MAS	0.071387	0.185549	0.384736	0.7004
_MDC--J203_MDC	0.393559	0.066662	5.903815	0.0000
_MFL--J203_MFL	0.386906	0.094254	4.104904	0.0000
_MPC--J203_MPC	0.723496	0.080267	9.013647	0.0000
_MSM--J203_MSM	0.686763	0.068301	10.05501	0.0000
_MST--J203_MST	0.531787	0.156686	3.393957	0.0007
_MTA--J203_MTA	0.449774	0.112632	3.993305	0.0001
_MTN--J203_MTN	0.925183	0.065226	14.18434	0.0000
_MUR--J203_MUR	0.877819	0.097652	8.989297	0.0000
_NCS--J203_NCS	0.099781	0.227840	0.437943	0.6614
_NPK--J203_NPK	0.579882	0.065605	8.839002	0.0000
_NPN--J203_NPN	0.851528	0.073430	11.59652	0.0000
_NTC--J203_NTC	0.662070	0.063409	10.44128	0.0000
_OCE--J203_OCE	0.239462	0.088371	2.709739	0.0067
_OLG--J203_OLG	0.766585	0.160400	4.779200	0.0000
_OMN--J203_OMN	0.567737	0.087405	6.495475	0.0000
_PIK--J203_PIK	0.529766	0.062067	8.535425	0.0000
_PMM--J203_PMM	0.303587	0.067913	4.470251	0.0000
_PMV--J203_PMV	-0.193251	0.283385	-0.681936	0.4953
_PNC--J203_PNC	0.461125	0.105924	4.353356	0.0000
_PPC--J203_PPC	0.566878	0.078406	7.230053	0.0000
_PWK--J203_PWK	0.610955	0.065177	9.373719	0.0000
_RBW--J203_RBW	0.340856	0.070232	4.853313	0.0000
_RLO--J203_RLO	0.668200	0.070958	9.416847	0.0000
_RTN--J203_RTN	-0.494678	0.793740	-0.623224	0.5331
_SAP--J203_SAP	1.112522	0.129256	8.607150	0.0000
_SBL--J203_SBL	0.365301	0.161531	2.261494	0.0237
_SDH--J203_SDH	0.773561	0.215000	3.597963	0.0003
_SER--J203_SER	0.476288	0.166292	2.864170	0.0042
_SHF--J203_SHF	0.786419	0.078095	10.07007	0.0000
_SHP--J203_SHP	0.565012	0.069452	8.135245	0.0000
_SOL--J203_SOL	1.151785	0.052402	21.97974	0.0000
_SOV--J203_SOV	0.434546	0.124518	3.489817	0.0005
_SPA--J203_SPA	0.095729	0.159112	0.601644	0.5474
_SPG--J203_SPG	1.195544	0.162168	7.372240	0.0000
_SUI--J203_SUI	0.550834	0.070787	7.781604	0.0000
_SYC--J203_SYC	0.317620	0.068621	4.628639	0.0000
_TDH--J203_TDH	0.313962	0.207662	1.511889	0.1306
_TFG--J203_TFG	0.645839	0.072130	8.953801	0.0000
_TPC--J203_TPC	0.247914	0.105412	2.351845	0.0187
_TRE--J203_TRE	0.462827	0.080162	5.773628	0.0000
_TRU--J203_TRU	0.771501	0.066878	11.53586	0.0000
_VLE--J203_VLE	0.266076	0.079566	3.344088	0.0008
_WBO--J203_WBO	0.710960	0.072673	9.783009	0.0000
_WHL--J203_WHL	0.702499	0.070124	10.01795	0.0000
_WNH--J203_WNH	0.124089	0.130139	0.953513	0.3403

Weighted Statistics

R-squared	0.175039	Mean dependent var	-0.469271
Adjusted R-squared	0.164722	S.D. dependent var	1.364005
S.E. of regression	1.006257	Sum squared resid	21780.00
F-statistic	16.96635	Durbin-Watson stat	2.146870

Prob(F-statistic)	0.000000		
	Unweighted Statistics		
R-squared	0.121670	Mean dependent var	-5.207752
Sum squared resid	889907.0	Durbin-Watson stat	2.202281

Model Output for ZAR/EUR exchange rate

Dependent Variable: RETURNS?
Method: Pooled EGLS (Cross-section SUR)
Date: 10/15/13 Time: 21:09
Sample: 7/07/2002 7/21/2013
Included observations: 577
Cross-sections included: 90
Total pool (balanced) observations: 51930
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_ADH--C	-2.138488	0.448357	-4.769610	0.0000
_ADR--C	-3.037503	0.385137	-7.886802	0.0000
_AEG--C	-1.194256	0.400334	-2.983150	0.0029
_AFE--C	-2.108755	0.294693	-7.155782	0.0000
_AFR--C	-1.417064	0.493546	-2.871189	0.0041
_AFX--C	-3.223783	0.320303	-10.06480	0.0000
_AHL--C	-6.268838	4.310875	-1.454192	0.1459
_AME--C	-3.262581	1.296984	-2.515513	0.0119
_AOO--C	-3.934414	0.411804	-9.554086	0.0000
_APK--C	-3.523207	0.412173	-8.547888	0.0000
_APN--C	-2.012723	0.389392	-5.168883	0.0000
_ARL--C	-2.976954	0.352378	-8.448181	0.0000
_ART--C	-2.603193	0.420978	-6.183676	0.0000
_ASR--C	-1.388817	0.432905	-3.208136	0.0013
_ATN--C	-2.351229	0.374163	-6.283977	0.0000
_BCF--C	-3.763440	0.352419	-10.67889	0.0000
_BDM--C	-2.190956	1.189121	-1.842501	0.0654
_BEL--C	-1.921721	0.546466	-3.516631	0.0004
_BSR--C	10.47040	2.564767	4.082399	0.0000
_BVT--C	-1.552002	0.268939	-5.770832	0.0000
_CAT--C	-2.928608	0.371515	-7.882882	0.0000
_CCL--C	-2.232940	0.686671	-3.251835	0.0011
_CKS--C	-3.884476	0.435550	-8.918562	0.0000
_CMH--C	-2.497286	0.454164	-5.498646	0.0000
_COM--C	-3.055801	0.666623	-4.584003	0.0000
_CRG--C	-3.833142	0.514812	-7.445713	0.0000
_CSB--C	-3.246111	0.416065	-7.801938	0.0000

_CUL--C	0.264114	1.229204	0.214866	0.8299
_DAW--C	-3.164496	0.496864	-6.368932	0.0000
_DCT--C	-1.513427	0.464383	-3.259009	0.0011
_DON--C	-1.415663	1.120726	-1.263166	0.2065
_DST--C	-3.006344	0.364276	-8.252921	0.0000
_DTC--C	-0.235844	0.445541	-0.529344	0.5966
_EOH--C	-2.695137	0.375653	-7.174544	0.0000
_FBR--C	-2.434806	0.449690	-5.414415	0.0000
_GRT--C	-2.666130	0.289313	-9.215383	0.0000
_ILA--C	-3.104156	0.496613	-6.250648	0.0000
_ILV--C	-2.757717	0.351171	-7.852922	0.0000
_IPL--C	-0.965902	0.344030	-2.807606	0.0050
_ITE--C	-3.468676	0.448654	-7.731298	0.0000
_IVT--C	-2.782199	0.417209	-6.668596	0.0000
_JDG--C	-2.104339	0.379580	-5.543862	0.0000
_JSC--C	0.272732	0.596388	0.457306	0.6475
_KGM--C	-3.536304	0.385236	-9.179576	0.0000
_MAS--C	-4.084700	0.697829	-5.853443	0.0000
_MDC--C	-2.776585	0.313782	-8.848760	0.0000
_MFL--C	-0.456018	1.218270	-0.374316	0.7082
_MPC--C	-1.399587	0.357176	-3.918483	0.0001
_MSM--C	-2.097068	0.346274	-6.056102	0.0000
_MST--C	-1.720604	0.532326	-3.232237	0.0012
_MTA--C	-3.185812	0.513969	-6.198449	0.0000
_MTN--C	-0.226840	0.380754	-0.595766	0.5513
_MUR--C	-1.196636	0.413696	-2.892551	0.0038
_NCS--C	1.054628	2.191006	0.481344	0.6303
_NPK--C	-1.957380	0.284615	-6.877286	0.0000
_NPN--C	-1.038758	0.345223	-3.008944	0.0026
_NTC--C	-1.375841	0.320900	-4.287439	0.0000
_OCE--C	-3.251210	0.367737	-8.841132	0.0000
_OLG--C	2.044516	1.314447	1.555419	0.1199
_OMN--C	-2.653166	0.409701	-6.475852	0.0000
_PIK--C	-2.713420	0.292265	-9.284115	0.0000
_PMM--C	-3.563354	0.439188	-8.113503	0.0000
_PMV--C	6.751815	1.137881	5.933676	0.0000
_PNC--C	-0.354777	1.074731	-0.330108	0.7413
_PPC--C	-2.217387	0.351208	-6.313591	0.0000
_PWK--C	-2.458861	0.263307	-9.338387	0.0000
_RBW--C	-3.077946	0.363949	-8.457080	0.0000
_RLO--C	-1.721570	0.313203	-5.496664	0.0000
_RTN--C	-3.549630	2.145608	-1.654370	0.0981
_SAP--C	-0.466933	0.473162	-0.986836	0.3237
_SBL--C	-3.582130	0.589742	-6.074064	0.0000
_SDH--C	-1.521774	0.727615	-2.091456	0.0365
_SER--C	-2.407697	0.721166	-3.338616	0.0008
_SHF--C	-0.736826	0.353790	-2.082668	0.0373
_SHP--C	-2.059981	0.330427	-6.234302	0.0000
_SOL--C	0.970315	0.318094	3.050405	0.0023
_SOV--C	-2.813410	0.672507	-4.183464	0.0000
_SPA--C	-2.189495	0.696816	-3.142141	0.0017
_SPG--C	-1.537305	0.553987	-2.774986	0.0055
_SUI--C	-2.570017	0.324632	-7.916708	0.0000
_SYC--C	-3.714964	0.286938	-12.94690	0.0000
_TDH--C	-3.434482	0.732741	-4.687168	0.0000
_TFG--C	-1.893654	0.348509	-5.433581	0.0000
_TPC--C	-3.626893	0.674963	-5.373472	0.0000
_TRE--C	-2.551178	0.362004	-7.047381	0.0000

_TRU--C	-1.604508	0.343477	-4.671364	0.0000
_VLE--C	-1.877028	0.577963	-3.247663	0.0012
_WBO--C	-1.970472	0.316987	-6.216262	0.0000
_WHL--C	-1.614496	0.321843	-5.016416	0.0000
_WNH--C	-0.992605	0.589325	-1.684307	0.0921
_ADH--XREUR_ADH	-0.310019	0.089045	-3.481608	0.0005
_ADR--XREUR_ADR	-0.253002	0.076489	-3.307686	0.0009
_AEG--XREUR_AEG	-0.251220	0.079507	-3.159708	0.0016
_AFE--XREUR_AFE	-0.085899	0.058527	-1.467691	0.1422
_AFR--XREUR_AFR	-0.184573	0.098019	-1.883031	0.0597
_AFX--XREUR_AFX	-0.046906	0.063613	-0.737366	0.4609
_AHL--XREUR_AHL	0.641759	0.856149	0.749588	0.4535
_AME--XREUR_AME	-0.106123	0.257584	-0.411995	0.6803
_AOO--XREUR_AOO	0.149959	0.081785	1.833575	0.0667
_APK--XREUR_APK	-0.031531	0.081858	-0.385188	0.7001
_APN--XREUR_APN	-0.313927	0.077334	-4.059353	0.0000
_ARL--XREUR_ARL	-0.147429	0.069983	-2.106633	0.0352
_ART--XREUR_ART	-0.140761	0.083607	-1.683597	0.0923
_ASR--XREUR_ASR	-0.017679	0.085976	-0.205632	0.8371
_ATN--XREUR_ATN	-0.076854	0.074309	-1.034239	0.3010
_BCF--XREUR_BCF	-0.020575	0.069991	-0.293964	0.7688
_BDM--XREUR_BDM	0.269901	0.236162	1.142864	0.2531
_BEL--XREUR_BEL	0.119118	0.108529	1.097560	0.2724
_BSR--XREUR_BSR	-0.385304	0.509368	-0.756435	0.4494
_BVT--XREUR_BVT	-0.161115	0.053412	-3.016463	0.0026
_CAT--XREUR_CAT	-0.000852	0.073784	-0.011548	0.9908
_CCL--XREUR_CCL	0.069860	0.136374	0.512270	0.6085
_CKS--XREUR_CKS	-0.029696	0.086501	-0.343297	0.7314
_CMH--XREUR_CMH	-0.166549	0.090198	-1.846489	0.0648
_COM--XREUR_COM	0.107753	0.132393	0.813890	0.4157
_CRG--XREUR_CRG	0.019575	0.102243	0.191453	0.8482
_CSB--XREUR_CSB	-0.116767	0.082631	-1.413105	0.1576
_CUL--XREUR_CUL	-0.661099	0.244123	-2.708063	0.0068
_DAW--XREUR_DAW	0.043405	0.098678	0.439859	0.6600
_DCT--XREUR_DCT	-0.185397	0.092227	-2.010212	0.0444
_DON--XREUR_DON	0.018698	0.222579	0.084007	0.9331
_DST--XREUR_DST	-0.044303	0.072346	-0.612379	0.5403
_DTC--XREUR_DTC	0.100743	0.088485	1.138531	0.2549
_EOH--XREUR_EOH	-0.034051	0.074605	-0.456409	0.6481
_FBR--XREUR_FBR	-0.361731	0.089309	-4.050320	0.0001
_GRT--XREUR_GRT	-0.266865	0.057458	-4.644503	0.0000
_ILA--XREUR_ILA	0.070884	0.098629	0.718701	0.4723
_ILV--XREUR_ILV	0.098764	0.069743	1.416111	0.1567
_IPL--XREUR_IPL	-0.459665	0.068325	-6.727610	0.0000
_ITE--XREUR_ITE	-0.004775	0.089104	-0.053588	0.9573
_IVT--XREUR_IVT	-0.023018	0.082859	-0.277803	0.7812
_JDG--XREUR_JDG	-0.373652	0.075385	-4.956554	0.0000
_JSC--XREUR_JSC	-0.274718	0.118444	-2.319388	0.0204
_KGM--XREUR_KGM	-0.042664	0.076509	-0.557640	0.5771
_MAS--XREUR_MAS	0.099209	0.138590	0.715841	0.4741
_MDC--XREUR_MDC	-0.005239	0.062318	-0.084071	0.9330
_MFL--XREUR_MFL	-0.096622	0.241951	-0.399343	0.6896
_MPC--XREUR_MPC	-0.522052	0.070936	-7.359500	0.0000
_MSM--XREUR_MSM	-0.395898	0.068771	-5.756780	0.0000
_MST--XREUR_MST	-0.076409	0.105721	-0.722742	0.4698
_MTA--XREUR_MTA	-0.068707	0.102075	-0.673097	0.5009
_MTN--XREUR_MTN	-0.544125	0.075619	-7.195653	0.0000
_MUR--XREUR_MUR	-0.118319	0.082161	-1.440092	0.1498

_NCS--XREUR_NCS	-0.413413	0.435139	-0.950071	0.3421
_NPK--XREUR_NPK	-0.151557	0.056525	-2.681225	0.0073
_NPN--XREUR_NPN	-0.242354	0.068562	-3.534803	0.0004
_NTC--XREUR_NTC	-0.134114	0.063732	-2.104364	0.0354
_OCE--XREUR_OCE	-0.011369	0.073033	-0.155666	0.8763
_OLG--XREUR_OLG	0.249338	0.261052	0.955127	0.3395
_OMN--XREUR_OMN	-0.049988	0.081368	-0.614351	0.5390
_PIK--XREUR_PIK	-0.232259	0.058044	-4.001395	0.0001
_PMM--XREUR_PMM	-0.248296	0.087224	-2.846656	0.0044
_PMV--XREUR_PMV	-0.315471	0.225986	-1.395977	0.1627
_PNC--XREUR_PNC	-0.453391	0.213444	-2.124168	0.0337
_PPC--XREUR_PPC	-0.303783	0.069751	-4.355262	0.0000
_PWK--XREUR_PWK	-0.174925	0.052293	-3.345069	0.0008
_RBW--XREUR_RBW	-0.321496	0.072281	-4.447858	0.0000
_RLO--XREUR_RLO	-0.191293	0.062203	-3.075310	0.0021
_RTN--XREUR_RTN	0.016430	0.426122	0.038557	0.9692
_SAP--XREUR_SAP	0.134248	0.093971	1.428614	0.1531
_SBL--XREUR_SBL	-0.185847	0.117124	-1.586751	0.1126
_SDH--XREUR_SDH	-0.210913	0.144506	-1.459546	0.1444
_SER--XREUR_SER	-0.082074	0.143225	-0.573043	0.5666
_SHF--XREUR_SHF	-0.086255	0.070263	-1.227600	0.2196
_SHP--XREUR_SHP	-0.254643	0.065623	-3.880363	0.0001
_SOL--XREUR_SOL	0.123724	0.063174	1.958458	0.0502
_SOV--XREUR_SOV	-0.279403	0.133561	-2.091944	0.0364
_SPA--XREUR_SPA	0.071319	0.138389	0.515353	0.6063
_SPG--XREUR_SPG	-0.082650	0.110023	-0.751205	0.4525
_SUI--XREUR_SUI	-0.105131	0.064473	-1.630630	0.1030
_SYC--XREUR_SYC	-0.118533	0.056987	-2.080021	0.0375
_TDH--XREUR_TDH	0.071136	0.145524	0.488825	0.6250
_TFG--XREUR_TFG	-0.624296	0.069215	-9.019696	0.0000
_TPC--XREUR_TPC	-0.150666	0.134049	-1.123962	0.2610
_TRE--XREUR_TRE	0.208531	0.071895	2.900502	0.0037
_TRU--XREUR_TRU	-0.477046	0.068215	-6.993234	0.0000
_VLE--XREUR_VLE	0.005978	0.114785	0.052084	0.9585
_WBO--XREUR_WBO	-0.055416	0.062954	-0.880259	0.3787
_WHL--XREUR_WHL	-0.459785	0.063919	-7.193292	0.0000
_WNH--XREUR_WNH	-0.024235	0.117041	-0.207061	0.8360
_ADH--J203_ADH	0.584610	0.052282	11.18189	0.0000
_ADR--J203_ADR	0.573681	0.044910	12.77402	0.0000
_AEG--J203_AEG	0.822482	0.046682	17.61884	0.0000
_AFE--J203_AFE	0.712828	0.034363	20.74382	0.0000
_AFR--J203_AFR	0.709677	0.057551	12.33122	0.0000
_AFX--J203_AFX	0.586478	0.037350	15.70234	0.0000
_AHL--J203_AHL	-0.117384	0.502681	-0.233515	0.8154
_AME--J203_AME	0.429294	0.151238	2.838530	0.0045
_AOO--J203_AOO	0.413448	0.048020	8.609992	0.0000
_APK--J203_APK	0.514941	0.048063	10.71399	0.0000
_APN--J203_APN	0.683363	0.045406	15.05003	0.0000
_ARL--J203_ARL	0.586084	0.041090	14.26342	0.0000
_ART--J203_ART	0.601055	0.049089	12.24412	0.0000
_ASR--J203_ASR	0.768743	0.050480	15.22867	0.0000
_ATN--J203_ATN	0.678570	0.043630	15.55275	0.0000
_BCF--J203_BCF	0.430786	0.041095	10.48276	0.0000
_BDM--J203_BDM	0.674756	0.138661	4.866241	0.0000
_BEL--J203_BEL	0.739197	0.063722	11.60030	0.0000
_BSR--J203_BSR	1.393870	0.299071	4.660661	0.0000
_BVT--J203_BVT	0.789625	0.031360	25.17908	0.0000
_CAT--J203_CAT	0.588667	0.043321	13.58835	0.0000

_CCL--J203_CCL	0.374107	0.080071	4.672185	0.0000
_CKS--J203_CKS	0.467853	0.050788	9.211809	0.0000
_CMH--J203_CMH	0.580951	0.052959	10.96983	0.0000
_COM--J203_COM	0.391042	0.077733	5.030560	0.0000
_CRG--J203_CRG	0.414644	0.060031	6.907169	0.0000
_CSB--J203_CSB	0.517062	0.048516	10.65747	0.0000
_CUL--J203_CUL	0.481084	0.143335	3.356369	0.0008
_DAW--J203_DAW	0.524570	0.057938	9.053951	0.0000
_DCT--J203_DCT	0.625617	0.054151	11.55329	0.0000
_DON--J203_DON	0.739315	0.130685	5.657225	0.0000
_DST--J203_DST	0.574966	0.042477	13.53579	0.0000
_DTC--J203_DTC	0.957205	0.051953	18.42427	0.0000
_EOH--J203_EOH	0.518758	0.043804	11.84272	0.0000
_FBR--J203_FBR	0.503306	0.052437	9.598249	0.0000
_GRT--J203_GRT	0.535887	0.033736	15.88469	0.0000
_ILA--J203_ILA	0.505659	0.057909	8.731962	0.0000
_ILV--J203_ILV	0.598921	0.040949	14.62595	0.0000
_IPL--J203_IPL	0.866521	0.040117	21.60007	0.0000
_ITE--J203_ITE	0.433345	0.052316	8.283152	0.0000
_IVT--J203_IVT	0.554359	0.048650	11.39489	0.0000
_JDG--J203_JDG	0.728050	0.044262	16.44866	0.0000
_JSC--J203_JSC	0.706793	0.069543	10.16334	0.0000
_KGM--J203_KGM	0.445023	0.044921	9.906697	0.0000
_MAS--J203_MAS	0.439911	0.081372	5.406165	0.0000
_MDC--J203_MDC	0.605308	0.036589	16.54324	0.0000
_MFL--J203_MFL	0.874360	0.142060	6.154882	0.0000
_MPC--J203_MPC	0.739712	0.041649	17.76044	0.0000
_MSM--J203_MSM	0.690031	0.040378	17.08923	0.0000
_MST--J203_MST	0.645713	0.062073	10.40242	0.0000
_MTA--J203_MTA	0.506306	0.059933	8.447905	0.0000
_MTN--J203_MTN	0.930063	0.044399	20.94791	0.0000
_MUR--J203_MUR	0.832889	0.048240	17.26549	0.0000
_NCS--J203_NCS	0.288399	0.255488	1.128815	0.2590
_NPK--J203_NPK	0.722071	0.033188	21.75680	0.0000
_NPN--J203_NPN	0.809366	0.040256	20.10564	0.0000
_NTC--J203_NTC	0.750573	0.037419	20.05837	0.0000
_OCE--J203_OCE	0.537417	0.042881	12.53278	0.0000
_OLG--J203_OLG	0.990537	0.153275	6.462498	0.0000
_OMN--J203_OMN	0.609006	0.047774	12.74755	0.0000
_PIK--J203_PIK	0.638586	0.034080	18.73767	0.0000
_PMM--J203_PMM	0.279492	0.051213	5.457477	0.0000
_PMV--J203_PMV	0.949504	0.132686	7.156042	0.0000
_PNC--J203_PNC	0.675404	0.125322	5.389357	0.0000
_PPC--J203_PPC	0.681785	0.040954	16.64774	0.0000
_PWK--J203_PWK	0.639721	0.030704	20.83537	0.0000
_RBW--J203_RBW	0.513410	0.042439	12.09753	0.0000
_RLO--J203_RLO	0.762640	0.036522	20.88175	0.0000
_RTN--J203_RTN	0.370722	0.250194	1.481738	0.1384
_SAP--J203_SAP	0.996139	0.055174	18.05442	0.0000
_SBL--J203_SBL	0.494887	0.068768	7.196428	0.0000
_SDH--J203_SDH	0.568213	0.084845	6.697038	0.0000
_SER--J203_SER	0.609688	0.084093	7.250116	0.0000
_SHF--J203_SHF	0.884650	0.041255	21.44368	0.0000
_SHP--J203_SHP	0.673084	0.038530	17.46895	0.0000
_SOL--J203_SOL	1.120594	0.037092	30.21107	0.0000
_SOV--J203_SOV	0.535847	0.078419	6.833078	0.0000
_SPA--J203_SPA	0.505478	0.081254	6.220956	0.0000
_SPG--J203_SPG	0.839302	0.064599	12.99248	0.0000

_SUI--J203_SUI	0.671355	0.037855	17.73512	0.0000
_SYC--J203_SYC	0.454376	0.033459	13.57998	0.0000
_TDH--J203_TDH	0.581732	0.085443	6.808406	0.0000
_TFG--J203_TFG	0.711205	0.040639	17.50062	0.0000
_TPC--J203_TPC	0.392971	0.078706	4.992909	0.0000
_TRE--J203_TRE	0.645126	0.042212	15.28285	0.0000
_TRU--J203_TRU	0.735531	0.040052	18.36435	0.0000
_VLE--J203_VLE	0.566122	0.067395	8.400076	0.0000
_WBO--J203_WBO	0.699286	0.036963	18.91852	0.0000
_WHL--J203_WHL	0.714552	0.037529	19.03984	0.0000
_WNH--J203_WNH	0.223939	0.068720	3.258723	0.0011

Weighted Statistics

R-squared	0.117600	Mean dependent var	-0.434774
Adjusted R-squared	0.113006	S.D. dependent var	1.235839
S.E. of regression	1.002610	Sum squared resid	51930.00
F-statistic	25.59445	Durbin-Watson stat	2.169023
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.099696	Mean dependent var	-6.781828
Sum squared resid	4048231.	Durbin-Watson stat	1.963820

Post-2008 currency crisis: 07/12/2008 – 21/07/2013

Dependent Variable: RETURNS?
Method: Pooled EGLS (Cross-section SUR)
Date: 10/15/13 Time: 21:42
Sample: 7/07/2002 9/21/2008
Included observations: 325
Cross-sections included: 90
Total pool (balanced) observations: 29250
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_ADH--C	-0.639072	0.813454	-0.785628	0.4321
_ADR--C	-3.160739	0.556859	-5.676012	0.0000
_AEG--C	-1.389796	0.643044	-2.161276	0.0307
_AFE--C	-2.581644	0.496785	-5.196702	0.0000
_AFR--C	-2.080786	0.731744	-2.843599	0.0045
_AFX--C	-3.566026	0.511106	-6.977075	0.0000
_AHL--C	-7.525251	9.035923	-0.832815	0.4050
_AME--C	-3.844214	2.729989	-1.408143	0.1591
_AOO--C	-4.440556	0.605521	-7.333443	0.0000
_APK--C	-3.394672	0.683239	-4.968501	0.0000
_APN--C	-2.289705	0.624261	-3.667864	0.0002
_ARL--C	-2.419284	0.630494	-3.837125	0.0001
_ART--C	-1.966578	0.707677	-2.778920	0.0055
_ASR--C	-3.576004	0.773238	-4.624715	0.0000
_ATN--C	-2.464062	0.583092	-4.225854	0.0000
_BCF--C	-4.557952	0.538473	-8.464587	0.0000

_BDM--C	-0.647112	2.268523	-0.285257	0.7754
_BEL--C	-2.937831	0.747803	-3.928618	0.0001
_BSR--C	35.01768	5.124221	6.833756	0.0000
_BVT--C	-1.929298	0.456129	-4.229723	0.0000
_CAT--C	-2.909111	0.647773	-4.490945	0.0000
_CCL--C	-2.370344	1.081311	-2.192101	0.0284
_CKS--C	-3.847853	0.603989	-6.370737	0.0000
_CMH--C	-3.591362	0.773052	-4.645695	0.0000
_COM--C	-1.643957	1.156344	-1.421685	0.1551
_CRG--C	-3.629834	0.949182	-3.824170	0.0001
_CSB--C	-4.169902	0.759236	-5.492238	0.0000
_CUL--C	0.081213	1.404656	0.057817	0.9539
_DAW--C	-1.082436	0.791402	-1.367744	0.1714
_DCT--C	-1.845270	0.735607	-2.508498	0.0121
_DON--C	-0.245226	1.922467	-0.127558	0.8985
_DST--C	-2.806411	0.643160	-4.363476	0.0000
_DTC--C	-0.612114	0.782385	-0.782369	0.4340
_EOH--C	-2.955043	0.604953	-4.884744	0.0000
_FBR--C	-2.504901	0.831083	-3.014021	0.0026
_GRT--C	-2.822722	0.517198	-5.457720	0.0000
_ILA--C	-3.291881	0.746114	-4.412033	0.0000
_ILV--C	-2.464895	0.576372	-4.276567	0.0000
_IPL--C	-1.148179	0.550178	-2.086925	0.0369
_ITE--C	-3.568645	0.664680	-5.368965	0.0000
_IVT--C	-3.639017	0.677975	-5.367481	0.0000
_JDG--C	-2.270745	0.643079	-3.531054	0.0004
_JSC--C	0.391370	1.030224	0.379889	0.7040
_KGM--C	-3.443944	0.571941	-6.021506	0.0000
_MAS--C	-4.273880	1.023212	-4.176926	0.0000
_MDC--C	-2.881345	0.516502	-5.578571	0.0000
_MFL--C	2.449664	2.518851	0.972533	0.3308
_MPC--C	-1.632776	0.583544	-2.798037	0.0051
_MSM--C	-2.130742	0.599458	-3.554448	0.0004
_MST--C	-2.947169	0.650056	-4.533712	0.0000
_MTA--C	-3.142124	0.733919	-4.281295	0.0000
_MTN--C	0.061511	0.661265	0.093020	0.9259
_MUR--C	-1.808783	0.630562	-2.868525	0.0041
_NCS--C	0.789341	4.505207	0.175206	0.8609
_NPK--C	-2.132950	0.439692	-4.851009	0.0000
_NPN--C	-1.060737	0.592158	-1.791307	0.0733
_NTC--C	-1.539126	0.555659	-2.769909	0.0056
_OCE--C	-3.777868	0.544378	-6.939783	0.0000
_OLG--C	0.507736	2.635208	0.192674	0.8472
_OMN--C	-3.698708	0.681789	-5.425002	0.0000
_PIK--C	-2.354171	0.487495	-4.829116	0.0000
_PMM--C	-3.251309	0.842116	-3.860882	0.0001
_PMV--C	-2.434338	1.380134	-1.763841	0.0778
_PNC--C	1.259480	2.204222	0.571394	0.5677
_PPC--C	-1.824031	0.579883	-3.145514	0.0017
_PWK--C	-2.824321	0.412748	-6.842721	0.0000
_RBW--C	-2.646408	0.634993	-4.167616	0.0000
_RLO--C	-2.339865	0.509954	-4.588384	0.0000
_RTN--C	-3.295892	0.896668	-3.675709	0.0002
_SAP--C	-1.332746	0.614066	-2.170363	0.0300
_SBL--C	-3.653941	0.853007	-4.283599	0.0000
_SDH--C	-2.752539	0.913860	-3.011990	0.0026
_SER--C	-3.352318	1.056782	-3.172196	0.0015
_SHF--C	-0.624681	0.577467	-1.081760	0.2794

_SHP--C	-1.379700	0.539600	-2.556896	0.0106
_SOL--C	0.935101	0.573064	1.631758	0.1027
_SOV--C	-2.191055	1.235090	-1.774005	0.0761
_SPA--C	-3.370600	1.073759	-3.139065	0.0017
_SPG--C	-2.496123	0.672835	-3.709860	0.0002
_SUI--C	-2.476017	0.549580	-4.505291	0.0000
_SYC--C	-4.284459	0.433985	-9.872362	0.0000
_TDH--C	-4.157208	0.991487	-4.192901	0.0000
_TFG--C	-1.812521	0.594505	-3.048790	0.0023
_TPC--C	-3.809502	1.279306	-2.977787	0.0029
_TRE--C	-2.887615	0.567135	-5.091584	0.0000
_TRU--C	-2.002742	0.600780	-3.333571	0.0009
_VLE--C	-0.687122	1.128261	-0.609010	0.5425
_WBO--C	-2.141006	0.514466	-4.161609	0.0000
_WHL--C	-2.879977	0.551924	-5.218066	0.0000
_WNH--C	-3.258722	0.967316	-3.368830	0.0008
_ADH--XREUR_ADH	-0.708582	0.141887	-4.993994	0.0000
_ADR--XREUR_ADR	-0.438718	0.097130	-4.516799	0.0000
_AEG--XREUR_AEG	-0.233372	0.112163	-2.080648	0.0375
_AFE--XREUR_AFE	-0.197428	0.086652	-2.278403	0.0227
_AFR--XREUR_AFR	-0.078188	0.127635	-0.612590	0.5402
_AFX--XREUR_AFX	-0.282401	0.089150	-3.167709	0.0015
_AHL--XREUR_AHL	0.744704	1.576093	0.472500	0.6366
_AME--XREUR_AME	-0.137399	0.476179	-0.288544	0.7729
_AOO--XREUR_AOO	-0.060458	0.105618	-0.572416	0.5670
_APK--XREUR_APK	-0.221010	0.119174	-1.854512	0.0637
_APN--XREUR_APN	-0.490490	0.108887	-4.504585	0.0000
_ARL--XREUR_ARL	-0.354786	0.109974	-3.226088	0.0013
_ART--XREUR_ART	-0.266013	0.123437	-2.155059	0.0312
_ASR--XREUR_ASR	-0.027484	0.134872	-0.203775	0.8385
_ATN--XREUR_ATN	-0.211475	0.101706	-2.079280	0.0376
_BCF--XREUR_BCF	-0.179799	0.093923	-1.914323	0.0556
_BDM--XREUR_BDM	0.418876	0.395688	1.058604	0.2898
_BEL--XREUR_BEL	-0.039783	0.130436	-0.304999	0.7604
_BSR--XREUR_BSR	-1.578098	0.893793	-1.765618	0.0775
_BVT--XREUR_BVT	-0.183068	0.079560	-2.300998	0.0214
_CAT--XREUR_CAT	-0.114750	0.112988	-1.015597	0.3098
_CCL--XREUR_CCL	-0.282516	0.188608	-1.497903	0.1342
_CKS--XREUR_CKS	-0.179546	0.105351	-1.704263	0.0883
_CMH--XREUR_CMH	-0.208263	0.134840	-1.544523	0.1225
_COM--XREUR_COM	-0.229869	0.201696	-1.139684	0.2544
_CRG--XREUR_CRG	-0.169146	0.165561	-1.021653	0.3070
_CSB--XREUR_CSB	-0.222287	0.132430	-1.678527	0.0933
_CUL--XREUR_CUL	-0.042496	0.245007	-0.173447	0.8623
_DAW--XREUR_DAW	-0.348466	0.138041	-2.524374	0.0116
_DCT--XREUR_DCT	-0.233968	0.128308	-1.823481	0.0682
_DON--XREUR_DON	0.000922	0.335327	0.002750	0.9978
_DST--XREUR_DST	-0.218519	0.112183	-1.947879	0.0514
_DTC--XREUR_DTC	0.131198	0.136468	0.961384	0.3364
_EOH--XREUR_EOH	-0.188042	0.105519	-1.782062	0.0747
_FBR--XREUR_FBR	-0.480352	0.144962	-3.313643	0.0009
_GRT--XREUR_GRT	-0.364921	0.090212	-4.045134	0.0001
_ILA--XREUR_ILA	-0.029043	0.130141	-0.223167	0.8234
_ILV--XREUR_ILV	0.087245	0.100534	0.867821	0.3855
_IPL--XREUR_IPL	-0.499233	0.095965	-5.202244	0.0000
_ITE--XREUR_ITE	-0.300126	0.115937	-2.588703	0.0096
_IVT--XREUR_IVT	-0.103100	0.118256	-0.871836	0.3833
_JDG--XREUR_JDG	-0.498321	0.112169	-4.442584	0.0000

_JSC--XREUR_JSC	-0.252832	0.179697	-1.406991	0.1594
_KGM--XREUR_KGM	-0.190508	0.099761	-1.909646	0.0562
_MAS--XREUR_MAS	-0.264546	0.178474	-1.482266	0.1383
_MDC--XREUR_MDC	-0.175378	0.090091	-1.946676	0.0516
_MFL--XREUR_MFL	-0.595769	0.439351	-1.356021	0.1751
_MPC--XREUR_MPC	-0.459187	0.101785	-4.511351	0.0000
_MSM--XREUR_MSM	-0.471150	0.104561	-4.506002	0.0000
_MST--XREUR_MST	-0.149001	0.113386	-1.314099	0.1888
_MTA--XREUR_MTA	-0.442284	0.128014	-3.454967	0.0006
_MTN--XREUR_MTN	-0.546138	0.115341	-4.734974	0.0000
_MUR--XREUR_MUR	-0.077013	0.109986	-0.700207	0.4838
_NCS--XREUR_NCS	-0.831802	0.785822	-1.058513	0.2898
_NPK--XREUR_NPK	-0.259618	0.076693	-3.385141	0.0007
_NPN--XREUR_NPN	-0.398653	0.103287	-3.859654	0.0001
_NTC--XREUR_NTC	-0.206746	0.096921	-2.133138	0.0329
_OCE--XREUR_OCE	-0.126844	0.094953	-1.335861	0.1816
_OLG--XREUR_OLG	0.388089	0.459647	0.844320	0.3985
_OMN--XREUR_OMN	-0.150527	0.118921	-1.265774	0.2056
_PIK--XREUR_PIK	-0.383587	0.085031	-4.511121	0.0000
_PMM--XREUR_PMM	-0.311319	0.146886	-2.119460	0.0341
_PMV--XREUR_PMV	0.023958	0.240730	0.099522	0.9207
_PNC--XREUR_PNC	-0.648590	0.384472	-1.686963	0.0916
_PPC--XREUR_PPC	-0.414487	0.101146	-4.097893	0.0000
_PWK--XREUR_PWK	-0.223498	0.071994	-3.104416	0.0019
_RBW--XREUR_RBW	-0.539560	0.110759	-4.871489	0.0000
_RLO--XREUR_RLO	-0.263620	0.088949	-2.963724	0.0030
_RTN--XREUR_RTN	-0.303997	0.156402	-1.943692	0.0519
_SAP--XREUR_SAP	0.218606	0.107109	2.040979	0.0413
_SBL--XREUR_SBL	-0.261141	0.148786	-1.755147	0.0792
_SDH--XREUR_SDH	-0.240096	0.159400	-1.506244	0.1320
_SER--XREUR_SER	-0.350181	0.184329	-1.899755	0.0575
_SHF--XREUR_SHF	-0.107232	0.100725	-1.064602	0.2871
_SHP--XREUR_SHP	-0.403305	0.094120	-4.285016	0.0000
_SOL--XREUR_SOL	0.131372	0.099957	1.314291	0.1888
_SOV--XREUR_SOV	-0.505643	0.215431	-2.347127	0.0189
_SPA--XREUR_SPA	-0.120726	0.187291	-0.644592	0.5192
_SPG--XREUR_SPG	-0.223331	0.117359	-1.902965	0.0571
_SUI--XREUR_SUI	-0.193278	0.095861	-2.016241	0.0438
_SYC--XREUR_SYC	-0.225423	0.075698	-2.977930	0.0029
_TDH--XREUR_TDH	-0.064080	0.172940	-0.370533	0.7110
_TFG--XREUR_TFG	-0.602924	0.103697	-5.814302	0.0000
_TPC--XREUR_TPC	-0.457876	0.223143	-2.051936	0.0402
_TRE--XREUR_TRE	-0.007101	0.098923	-0.071788	0.9428
_TRU--XREUR_TRU	-0.412670	0.104791	-3.938027	0.0001
_VLE--XREUR_VLE	-0.212968	0.196797	-1.082168	0.2792
_WBO--XREUR_WBO	-0.123000	0.089736	-1.370686	0.1705
_WHL--XREUR_WHL	-0.324546	0.096270	-3.371226	0.0007
_WNH--XREUR_WNH	-0.073222	0.168724	-0.433974	0.6643
_ADH--J203_ADH	0.782915	0.085214	9.187605	0.0000
_ADR--J203_ADR	0.604753	0.058334	10.36701	0.0000
_AEG--J203_AEG	0.778324	0.067363	11.55420	0.0000
_AFE--J203_AFE	0.693595	0.052041	13.32778	0.0000
_AFR--J203_AFR	0.683538	0.076655	8.917109	0.0000
_AFX--J203_AFX	0.586806	0.053542	10.95983	0.0000
_AHL--J203_AHL	-0.300268	0.946569	-0.317217	0.7511
_AME--J203_AME	0.358173	0.285983	1.252425	0.2104
_AOO--J203_AOO	0.401937	0.063432	6.336497	0.0000
_APK--J203_APK	0.578130	0.071573	8.077429	0.0000

_APN--J203_APN	0.700296	0.065395	10.70868	0.0000
_ARL--J203_ARL	0.669544	0.066048	10.13722	0.0000
_ART--J203_ART	0.668011	0.074134	9.010915	0.0000
_ASR--J203_ASR	0.539175	0.081001	6.656359	0.0000
_ATN--J203_ATN	0.677190	0.061082	11.08648	0.0000
_BCF--J203_BCF	0.416397	0.056408	7.381834	0.0000
_BDM--J203_BDM	0.784905	0.237642	3.302890	0.0010
_BEL--J203_BEL	0.639568	0.078337	8.164319	0.0000
_BSR--J203_BSR	3.412722	0.536794	6.357603	0.0000
_BVT--J203_BVT	0.779255	0.047782	16.30844	0.0000
_CAT--J203_CAT	0.634592	0.067858	9.351739	0.0000
_CCL--J203_CCL	0.467116	0.113274	4.123774	0.0000
_CKS--J203_CKS	0.524157	0.063272	8.284248	0.0000
_CMH--J203_CMH	0.493231	0.080982	6.090628	0.0000
_COM--J203_COM	0.531567	0.121134	4.388249	0.0000
_CRG--J203_CRG	0.483426	0.099433	4.861846	0.0000
_CSB--J203_CSB	0.449516	0.079535	5.651835	0.0000
_CUL--J203_CUL	0.442354	0.147146	3.006216	0.0026
_DAW--J203_DAW	0.754792	0.082904	9.104375	0.0000
_DCT--J203_DCT	0.672566	0.077059	8.727894	0.0000
_DON--J203_DON	0.848576	0.201390	4.213590	0.0000
_DST--J203_DST	0.646286	0.067375	9.592374	0.0000
_DTC--J203_DTC	0.935446	0.081960	11.41348	0.0000
_EOH--J203_EOH	0.535996	0.063373	8.457844	0.0000
_FBR--J203_FBR	0.497493	0.087061	5.714302	0.0000
_GRT--J203_GRT	0.539124	0.054180	9.950663	0.0000
_ILA--J203_ILA	0.514809	0.078160	6.586593	0.0000
_ILV--J203_ILV	0.658947	0.060379	10.91360	0.0000
_IPL--J203_IPL	0.889607	0.057634	15.43533	0.0000
_ITE--J203_ITE	0.503571	0.069629	7.232159	0.0000
_IVT--J203_IVT	0.499951	0.071022	7.039382	0.0000
_JDG--J203_JDG	0.741710	0.067366	11.01008	0.0000
_JSC--J203_JSC	0.772213	0.107922	7.155269	0.0000
_KGM--J203_KGM	0.500740	0.059914	8.357599	0.0000
_MAS--J203_MAS	0.471556	0.107188	4.399344	0.0000
_MDC--J203_MDC	0.655070	0.054107	12.10699	0.0000
_MFL--J203_MFL	1.236656	0.263865	4.686699	0.0000
_MPC--J203_MPC	0.748923	0.061130	12.25135	0.0000
_MSM--J203_MSM	0.716463	0.062797	11.40920	0.0000
_MST--J203_MST	0.590590	0.068097	8.672716	0.0000
_MTA--J203_MTA	0.599717	0.076883	7.800424	0.0000
_MTN--J203_MTN	0.949219	0.069272	13.70285	0.0000
_MUR--J203_MUR	0.724955	0.066055	10.97498	0.0000
_NCS--J203_NCS	0.304289	0.471948	0.644752	0.5191
_NPK--J203_NPK	0.753242	0.046060	16.35333	0.0000
_NPN--J203_NPN	0.829179	0.062032	13.36691	0.0000
_NTC--J203_NTC	0.759439	0.058209	13.04682	0.0000
_OCE--J203_OCE	0.559472	0.057027	9.810654	0.0000
_OLG--J203_OLG	0.909618	0.276054	3.295070	0.0010
_OMN--J203_OMN	0.525271	0.071422	7.354512	0.0000
_PIK--J203_PIK	0.714441	0.051068	13.98996	0.0000
_PMM--J203_PMM	0.282558	0.088217	3.202991	0.0014
_PMV--J203_PMV	0.441793	0.144578	3.055753	0.0022
_PNC--J203_PNC	0.840050	0.230906	3.638061	0.0003
_PPC--J203_PPC	0.746628	0.060746	12.29091	0.0000
_PWK--J203_PWK	0.630724	0.043238	14.58728	0.0000
_RBW--J203_RBW	0.573998	0.066519	8.629021	0.0000
_RLO--J203_RLO	0.712232	0.053421	13.33248	0.0000

_RTN--J203_RTN	0.531761	0.093932	5.661156	0.0000
_SAP--J203_SAP	0.897360	0.064327	13.94993	0.0000
_SBL--J203_SBL	0.538700	0.089358	6.028579	0.0000
_SDH--J203_SDH	0.449481	0.095733	4.695179	0.0000
_SER--J203_SER	0.518366	0.110704	4.682434	0.0000
_SHF--J203_SHF	0.912478	0.060493	15.08397	0.0000
_SHP--J203_SHP	0.785027	0.056526	13.88779	0.0000
_SOL--J203_SOL	1.091155	0.060032	18.17624	0.0000
_SOV--J203_SOV	0.588364	0.129383	4.547451	0.0000
_SPA--J203_SPA	0.536402	0.112483	4.768745	0.0000
_SPG--J203_SPG	0.767209	0.070484	10.88494	0.0000
_SUI--J203_SUI	0.714119	0.057572	12.40395	0.0000
_SYC--J203_SYC	0.442495	0.045463	9.733169	0.0000
_TDH--J203_TDH	0.569751	0.103864	5.485528	0.0000
_TFG--J203_TFG	0.752661	0.062278	12.08549	0.0000
_TPC--J203_TPC	0.434341	0.134015	3.240983	0.0012
_TRE--J203_TRE	0.669730	0.059411	11.27286	0.0000
_TRU--J203_TRU	0.714345	0.062935	11.35045	0.0000
_VLE--J203_VLE	0.729088	0.118192	6.168653	0.0000
_WBO--J203_WBO	0.673869	0.053893	12.50372	0.0000
_WHL--J203_WHL	0.619168	0.057817	10.70902	0.0000
_WNH--J203_WNH	0.072459	0.101332	0.715065	0.4746

Weighted Statistics

R-squared	0.110877	Mean dependent var	-0.519038
Adjusted R-squared	0.102623	S.D. dependent var	1.296332
S.E. of regression	1.004648	Sum squared resid	29250.00
F-statistic	13.43457	Durbin-Watson stat	2.145093
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.091979	Mean dependent var	-7.786783
Sum squared resid	2964772.	Durbin-Watson stat	1.952377

Post-2008 currency crisis: 12/09/2002 – 21/07/2013

Dependent Variable: RETURNS?
Method: Pooled EGLS (Cross-section SUR)
Date: 10/15/13 Time: 21:52
Sample: 12/07/2008 7/21/2013
Included observations: 242
Cross-sections included: 90
Total pool (balanced) observations: 21780
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_ADH--C	-4.133651	0.503521	-8.209490	0.0000
_ADR--C	-3.346796	0.661775	-5.057303	0.0000
_AEG--C	-1.658119	0.560223	-2.959746	0.0031
_AFE--C	-2.478762	0.405984	-6.105563	0.0000
_AFR--C	-3.845378	0.778762	-4.937807	0.0000

_AFX--C	-2.979804	0.462237	-6.446492	0.0000
_AHL--C	-3.959665	2.015136	-1.964962	0.0494
_AME--C	-2.922010	0.559279	-5.224604	0.0000
_AOO--C	-3.647189	0.716176	-5.092589	0.0000
_APK--C	-3.529035	0.588033	-6.001428	0.0000
_APN--C	-1.704286	0.594877	-2.864938	0.0042
_ARL--C	-4.158224	0.428345	-9.707652	0.0000
_ART--C	-4.243038	0.581094	-7.301814	0.0000
_ASR--C	0.153624	0.528148	0.290873	0.7712
_ATN--C	-2.524464	0.582722	-4.332191	0.0000
_BCF--C	-3.637311	0.554000	-6.565545	0.0000
_BDM--C	-4.863908	1.291456	-3.766222	0.0002
_BEL--C	-0.117489	0.968623	-0.121295	0.9035
_BSR--C	-1.916341	0.707226	-2.709657	0.0067
_BVT--C	-1.129297	0.371779	-3.037548	0.0024
_CAT--C	-3.220373	0.477925	-6.738233	0.0000
_CCL--C	-3.019154	1.069225	-2.823686	0.0048
_CKS--C	-4.322746	0.794755	-5.439091	0.0000
_CMH--C	-3.048155	0.606823	-5.023134	0.0000
_COM--C	-2.747092	0.900595	-3.050308	0.0023
_CRG--C	-4.172488	0.606680	-6.877572	0.0000
_CSB--C	-3.135644	0.491910	-6.374425	0.0000
_CUL--C	1.017834	2.203539	0.461909	0.6442
_DAW--C	-5.011596	0.722594	-6.935562	0.0000
_DCT--C	-2.426282	0.717204	-3.382975	0.0007
_DON--C	-3.392467	1.604694	-2.114089	0.0345
_DST--C	-3.509713	0.461649	-7.602556	0.0000
_DTC--C	-0.686982	0.559757	-1.227285	0.2197
_EOH--C	-2.343105	0.566001	-4.139757	0.0000
_FBR--C	-1.963581	0.525222	-3.738575	0.0002
_GRT--C	-2.328725	0.375279	-6.205321	0.0000
_ILA--C	-3.242356	0.817228	-3.967506	0.0001
_ILV--C	-3.285490	0.500522	-6.564121	0.0000
_IPL--C	-1.723649	0.536288	-3.214033	0.0013
_ITE--C	-3.813257	0.739628	-5.155639	0.0000
_IVT--C	-2.685290	0.639226	-4.200848	0.0000
_JDG--C	-1.337392	0.521353	-2.565235	0.0103
_JSC--C	-2.039274	0.776753	-2.625384	0.0087
_KGM--C	-3.203009	0.518925	-6.172396	0.0000
_MAS--C	-5.126842	1.205301	-4.253579	0.0000
_MDC--C	-3.175642	0.435900	-7.285249	0.0000
_MFL--C	-2.787812	0.617597	-4.513963	0.0000
_MPC--C	-1.307895	0.519315	-2.518498	0.0118
_MSM--C	-1.844556	0.456358	-4.041910	0.0001
_MST--C	-1.237899	1.026009	-1.206520	0.2276
_MTA--C	-2.532150	0.737572	-3.433091	0.0006
_MTN--C	-0.529739	0.429395	-1.233688	0.2173
_MUR--C	-1.126860	0.638998	-1.763479	0.0778
_NCS--C	0.565175	1.492949	0.378563	0.7050
_NPK--C	-2.180575	0.429109	-5.081638	0.0000
_NPN--C	-0.526790	0.481804	-1.093371	0.2742
_NTC--C	-1.588342	0.418775	-3.792827	0.0001
_OCE--C	-4.055510	0.579659	-6.996378	0.0000
_OLG--C	1.898521	1.053180	1.802656	0.0715
_OMN--C	-2.210777	0.570476	-3.875318	0.0001
_PIK--C	-2.978153	0.405870	-7.337695	0.0000
_PMM--C	-3.733041	0.441937	-8.447006	0.0000
_PMV--C	5.945866	1.843101	3.226013	0.0013

_PNC--C	-1.708056	0.688872	-2.479496	0.0132
_PPC--C	-2.673478	0.517782	-5.163329	0.0000
_PWK--C	-2.316606	0.426026	-5.437709	0.0000
_RBW--C	-3.819773	0.459651	-8.310150	0.0000
_RLO--C	-1.976460	0.464658	-4.253582	0.0000
_RTN--C	-6.802962	5.196427	-1.309161	0.1905
_SAP--C	0.444778	0.846074	0.525696	0.5991
_SBL--C	-3.786598	1.056092	-3.585482	0.0003
_SDH--C	-0.048240	1.402787	-0.034389	0.9726
_SER--C	-2.475309	1.092207	-2.266337	0.0234
_SHF--C	-1.022583	0.511128	-2.000639	0.0454
_SHP--C	-2.339993	0.456204	-5.129270	0.0000
_SOL--C	0.867879	0.345670	2.510716	0.0121
_SOV--C	-3.505126	0.815314	-4.299111	0.0000
_SPA--C	-2.794071	1.042041	-2.681346	0.0073
_SPG--C	1.042609	1.067170	0.976985	0.3286
_SUI--C	-2.845885	0.464286	-6.129594	0.0000
_SYC--C	-3.771171	0.451310	-8.356054	0.0000
_TDH--C	-3.835417	1.357545	-2.825259	0.0047
_TFG--C	-2.164977	0.471437	-4.592294	0.0000
_TPC--C	-3.529058	0.692478	-5.096272	0.0000
_TRE--C	-2.700526	0.535104	-5.046729	0.0000
_TRU--C	-1.267825	0.444035	-2.855237	0.0043
_VLE--C	-3.196389	0.521642	-6.127551	0.0000
_WBO--C	-1.777701	0.476148	-3.733502	0.0002
_WHL--C	-1.359901	0.450464	-3.018888	0.0025
_WNH--C	-0.284046	0.852318	-0.333263	0.7389
_ADH--XREUR_ADH	-0.037338	0.103549	-0.360582	0.7184
_ADR--XREUR_ADR	-0.122171	0.136094	-0.897698	0.3694
_AEG--XREUR_AEG	-0.055291	0.115210	-0.479917	0.6313
_AFE--XREUR_AFE	0.083424	0.083491	0.999200	0.3177
_AFR--XREUR_AFR	-0.339680	0.160153	-2.120977	0.0339
_AFX--XREUR_AFX	0.224165	0.095059	2.358163	0.0184
_AHL--XREUR_AHL	0.838761	0.414413	2.023973	0.0430
_AME--XREUR_AME	0.023875	0.115016	0.207579	0.8356
_AOO--XREUR_AOO	0.355661	0.147282	2.414838	0.0158
_APK--XREUR_APK	-0.028839	0.120929	-0.238481	0.8115
_APN--XREUR_APN	-0.163243	0.122337	-1.334380	0.1821
_ARL--XREUR_ARL	0.030381	0.088089	0.344886	0.7302
_ART--XREUR_ART	-0.030949	0.119502	-0.258981	0.7957
_ASR--XREUR_ASR	0.212893	0.108614	1.960090	0.0500
_ATN--XREUR_ATN	0.070576	0.119837	0.588931	0.5559
_BCF--XREUR_BCF	-0.004797	0.113930	-0.042107	0.9664
_BDM--XREUR_BDM	0.362750	0.265588	1.365839	0.1720
_BEL--XREUR_BEL	0.224001	0.199197	1.124520	0.2608
_BSR--XREUR_BSR	-0.036436	0.145441	-0.250521	0.8022
_BVT--XREUR_BVT	-0.235811	0.076456	-3.084250	0.0020
_CAT--XREUR_CAT	0.083740	0.098285	0.852005	0.3942
_CCL--XREUR_CCL	0.192108	0.219886	0.873670	0.3823
_CKS--XREUR_CKS	-0.024822	0.163441	-0.151870	0.8793
_CMH--XREUR_CMH	-0.092682	0.124793	-0.742688	0.4577
_COM--XREUR_COM	0.252038	0.185207	1.360844	0.1736
_CRG--XREUR_CRG	0.144385	0.124764	1.157268	0.2472
_CSB--XREUR_CSB	0.022586	0.101161	0.223270	0.8233
_CUL--XREUR_CUL	-0.310237	0.453158	-0.684612	0.4936
_DAW--XREUR_DAW	0.213350	0.148601	1.435716	0.1511
_DCT--XREUR_DCT	-0.290665	0.147493	-1.970705	0.0488
_DON--XREUR_DON	0.236474	0.330005	0.716575	0.4736

_DST--XREUR_DST	-0.005595	0.094938	-0.058934	0.9530
_DTC--XREUR_DTC	0.135423	0.115114	1.176425	0.2394
_EOH--XREUR_EOH	-0.028312	0.116398	-0.243238	0.8078
_FBR--XREUR_FBR	-0.088560	0.108012	-0.819912	0.4123
_GRT--XREUR_GRT	-0.201292	0.077176	-2.608221	0.0091
_ILA--XREUR_ILA	0.024703	0.168063	0.146986	0.8831
_ILV--XREUR_ILV	0.098766	0.102932	0.959524	0.3373
_IPL--XREUR_IPL	-0.433721	0.110288	-3.932631	0.0001
_ITE--XREUR_ITE	0.144979	0.152105	0.953156	0.3405
_IVT--XREUR_IVT	0.079074	0.131457	0.601523	0.5475
_JDG--XREUR_JDG	-0.151813	0.107216	-1.415950	0.1568
_JSC--XREUR_JSC	-0.193909	0.159739	-1.213910	0.2248
_KGM--XREUR_KGM	-0.111544	0.106717	-1.045237	0.2959
_MAS--XREUR_MAS	0.568092	0.247870	2.291895	0.0219
_MDC--XREUR_MDC	0.080529	0.089643	0.898328	0.3690
_MFL--XREUR_MFL	0.108611	0.127009	0.855145	0.3925
_MPC--XREUR_MPC	-0.491780	0.106797	-4.604800	0.0000
_MSM--XREUR_MSM	-0.273675	0.093850	-2.916087	0.0035
_MST--XREUR_MST	0.116241	0.210999	0.550909	0.5817
_MTA--XREUR_MTA	-0.022576	0.151682	-0.148841	0.8817
_MTN--XREUR_MTN	-0.197775	0.088305	-2.239675	0.0251
_MUR--XREUR_MUR	0.071334	0.131410	0.542837	0.5872
_NCS--XREUR_NCS	0.026018	0.307025	0.084742	0.9325
_NPK--XREUR_NPK	-0.060051	0.088246	-0.680492	0.4962
_NPN--XREUR_NPN	-0.164504	0.099083	-1.660268	0.0969
_NTC--XREUR_NTC	-0.109400	0.086121	-1.270309	0.2040
_OCE--XREUR_OCE	-0.006002	0.119207	-0.050352	0.9598
_OLG--XREUR_OLG	-0.198504	0.216586	-0.916513	0.3594
_OMN--XREUR_OMN	0.156770	0.117318	1.336278	0.1815
_PIK--XREUR_PIK	-0.110441	0.083467	-1.323164	0.1858
_PMM--XREUR_PMM	-0.159802	0.090884	-1.758305	0.0787
_PMV--XREUR_PMV	-1.070899	0.379034	-2.825340	0.0047
_PNC--XREUR_PNC	-0.460133	0.141667	-3.247998	0.0012
_PPC--XREUR_PPC	-0.121958	0.106482	-1.145343	0.2521
_PWK--XREUR_PWK	-0.101555	0.087612	-1.159146	0.2464
_RBW--XREUR_RBW	0.049915	0.094527	0.528043	0.5975
_RLO--XREUR_RLO	-0.001937	0.095557	-0.020272	0.9838
_RTN--XREUR_RTN	0.159562	1.068645	0.149313	0.8813
_SAP--XREUR_SAP	0.140166	0.173995	0.805573	0.4205
_SBL--XREUR_SBL	-0.336293	0.217185	-1.548415	0.1215
_SDH--XREUR_SDH	-0.454878	0.288483	-1.576791	0.1149
_SER--XREUR_SER	0.147764	0.224612	0.657863	0.5106
_SHF--XREUR_SHF	-0.045862	0.105114	-0.436313	0.6626
_SHP--XREUR_SHP	-0.216086	0.093818	-2.303242	0.0213
_SOL--XREUR_SOL	0.244925	0.071087	3.445419	0.0006
_SOV--XREUR_SOV	0.009753	0.167669	0.058165	0.9536
_SPA--XREUR_SPA	0.002015	0.214296	0.009402	0.9925
_SPG--XREUR_SPG	-0.116866	0.219464	-0.532506	0.5944
_SUI--XREUR_SUI	-0.017230	0.095480	-0.180459	0.8568
_SYC--XREUR_SYC	-0.065096	0.092812	-0.701380	0.4831
_TDH--XREUR_TDH	0.238731	0.279179	0.855119	0.3925
_TFG--XREUR_TFG	-0.593451	0.096951	-6.121143	0.0000
_TPC--XREUR_TPC	-0.025557	0.142408	-0.179466	0.8576
_TRE--XREUR_TRE	0.323760	0.110044	2.942089	0.0033
_TRU--XREUR_TRU	-0.401061	0.091316	-4.392027	0.0000
_VLE--XREUR_VLE	0.013841	0.107276	0.129025	0.8973
_WBO--XREUR_WBO	0.005948	0.097920	0.060747	0.9516
_WHL--XREUR_WHL	-0.528356	0.092638	-5.703452	0.0000

_WNH--XREUR_WNH	-0.052785	0.175279	-0.301151	0.7633
_ADH--J203_ADH	0.170238	0.077521	2.196025	0.0281
_ADR--J203_ADR	0.415428	0.101886	4.077395	0.0000
_AEG--J203_AEG	0.743549	0.086251	8.620763	0.0000
_AFE--J203_AFE	0.559511	0.062505	8.951518	0.0000
_AFR--J203_AFR	0.205477	0.119897	1.713783	0.0866
_AFX--J203_AFX	0.524666	0.071165	7.372522	0.0000
_AHL--J203_AHL	0.344071	0.310247	1.109025	0.2674
_AME--J203_AME	0.474927	0.086106	5.515632	0.0000
_AOO--J203_AOO	0.352885	0.110261	3.200450	0.0014
_APK--J203_APK	0.411422	0.090532	4.544474	0.0000
_APN--J203_APN	0.629551	0.091586	6.873860	0.0000
_ARL--J203_ARL	0.332967	0.065947	5.048997	0.0000
_ART--J203_ART	0.321516	0.089464	3.593800	0.0003
_ASR--J203_ASR	0.966867	0.081313	11.89073	0.0000
_ATN--J203_ATN	0.602303	0.089715	6.713529	0.0000
_BCF--J203_BCF	0.285197	0.085293	3.343739	0.0008
_BDM--J203_BDM	0.331461	0.198830	1.667054	0.0955
_BEL--J203_BEL	0.981421	0.149127	6.581088	0.0000
_BSR--J203_BSR	0.737652	0.108883	6.774702	0.0000
_BVT--J203_BVT	0.789159	0.057238	13.78721	0.0000
_CAT--J203_CAT	0.436801	0.073581	5.936369	0.0000
_CCL--J203_CCL	0.024677	0.164616	0.149905	0.8808
_CKS--J203_CKS	0.275257	0.122359	2.249582	0.0245
_CMH--J203_CMH	0.366397	0.093425	3.921807	0.0001
_COM--J203_COM	0.452722	0.138654	3.265122	0.0011
_CRG--J203_CRG	0.256650	0.093403	2.747757	0.0060
_CSB--J203_CSB	0.445869	0.075734	5.887340	0.0000
_CUL--J203_CUL	0.781934	0.339253	2.304869	0.0212
_DAW--J203_DAW	0.173240	0.111249	1.557220	0.1194
_DCT--J203_DCT	0.297553	0.110419	2.694751	0.0070
_DON--J203_DON	0.448646	0.247056	1.815970	0.0694
_DST--J203_DST	0.379148	0.071075	5.334502	0.0000
_DTC--J203_DTC	0.806410	0.086179	9.357366	0.0000
_EOH--J203_EOH	0.465649	0.087140	5.343661	0.0000
_FBR--J203_FBR	0.559330	0.080862	6.917081	0.0000
_GRT--J203_GRT	0.548038	0.057777	9.485353	0.0000
_ILA--J203_ILA	0.390775	0.125819	3.105852	0.0019
_ILV--J203_ILV	0.444874	0.077060	5.773127	0.0000
_IPL--J203_IPL	0.645993	0.082566	7.823958	0.0000
_ITE--J203_ITE	0.198600	0.113872	1.744063	0.0812
_IVT--J203_IVT	0.462212	0.098414	4.696609	0.0000
_JDG--J203_JDG	0.802517	0.080267	9.998153	0.0000
_JSC--J203_JSC	0.187079	0.119587	1.564370	0.1177
_KGM--J203_KGM	0.413722	0.079893	5.178474	0.0000
_MAS--J203_MAS	0.117141	0.185566	0.631266	0.5279
_MDC--J203_MDC	0.403989	0.067110	6.019770	0.0000
_MFL--J203_MFL	0.391924	0.095084	4.121859	0.0000
_MPC--J203_MPC	0.691631	0.079953	8.650485	0.0000
_MSM--J203_MSM	0.676953	0.070260	9.634964	0.0000
_MST--J203_MST	0.550265	0.157962	3.483518	0.0005
_MTA--J203_MTA	0.444793	0.113555	3.916978	0.0001
_MTN--J203_MTN	0.915981	0.066109	13.85566	0.0000
_MUR--J203_MUR	0.886640	0.098379	9.012493	0.0000
_NCS--J203_NCS	0.093072	0.229852	0.404922	0.6855
_NPK--J203_NPK	0.573673	0.066065	8.683497	0.0000
_NPN--J203_NPN	0.843408	0.074178	11.37011	0.0000
_NTC--J203_NTC	0.660406	0.064474	10.24300	0.0000

_OCE--J203_OCE	0.233415	0.089243	2.615499	0.0089
_OLG--J203_OLG	0.761063	0.162146	4.693697	0.0000
_OMN--J203_OMN	0.581279	0.087829	6.618261	0.0000
_PIK--J203_PIK	0.522436	0.062487	8.360709	0.0000
_PMM--J203_PMM	0.288348	0.068040	4.237929	0.0000
_PMV--J203_PMV	-0.266713	0.283760	-0.939923	0.3473
_PNC--J203_PNC	0.430861	0.106057	4.062520	0.0000
_PPC--J203_PPC	0.565862	0.079717	7.098412	0.0000
_PWK--J203_PWK	0.603365	0.065590	9.199008	0.0000
_RBW--J203_RBW	0.344606	0.070767	4.869580	0.0000
_RLO--J203_RLO	0.669413	0.071538	9.357466	0.0000
_RTN--J203_RTN	-0.475708	0.800033	-0.594611	0.5521
_SAP--J203_SAP	1.121131	0.130260	8.606871	0.0000
_SBL--J203_SBL	0.343465	0.162594	2.112409	0.0347
_SDH--J203_SDH	0.738067	0.215970	3.417443	0.0006
_SER--J203_SER	0.476841	0.168154	2.835738	0.0046
_SHF--J203_SHF	0.780614	0.078692	9.919813	0.0000
_SHP--J203_SHP	0.553964	0.070236	7.887144	0.0000
_SOL--J203_SOL	1.164278	0.053219	21.87724	0.0000
_SOV--J203_SOV	0.433690	0.125524	3.455029	0.0006
_SPA--J203_SPA	0.091951	0.160431	0.573150	0.5665
_SPG--J203_SPG	1.200532	0.164300	7.306966	0.0000
_SUI--J203_SUI	0.553350	0.071481	7.741258	0.0000
_SYC--J203_SYC	0.317993	0.069483	4.576565	0.0000
_TDH--J203_TDH	0.337926	0.209005	1.616832	0.1059
_TFG--J203_TFG	0.611246	0.072582	8.421503	0.0000
_TPC--J203_TPC	0.253955	0.106613	2.382036	0.0172
_TRE--J203_TRE	0.474809	0.082384	5.763391	0.0000
_TRU--J203_TRU	0.751393	0.068363	10.99125	0.0000
_VLE--J203_VLE	0.263314	0.080311	3.278679	0.0010
_WBO--J203_WBO	0.714399	0.073307	9.745314	0.0000
_WHL--J203_WHL	0.668053	0.069353	9.632699	0.0000
_WNH--J203_WNH	0.122753	0.131221	0.935464	0.3496

Weighted Statistics

R-squared	0.176373	Mean dependent var	-0.466900
Adjusted R-squared	0.166073	S.D. dependent var	1.363462
S.E. of regression	1.006257	Sum squared resid	21780.00
F-statistic	17.12340	Durbin-Watson stat	2.148701
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.121870	Mean dependent var	-5.207752
Sum squared resid	889705.3	Durbin-Watson stat	2.203980