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Monetary Policy and the Stock Market Structure : Some International Empirical Evidence

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Abstract

This paper builds upon Blanchard's (1981) model of asset prices, and provides an empirical evidence for good news cases (GNC) and/or bad news cases (BNC) as defined in Blanchard's paper. We update Blanchard's model by introducing Taylor's rule of monetary policy and explicitly incorporate income distribution in a small, open economy. The findings indicate that, the labour share is a strong and significant variable that should be considered in asset pricing models. The real exchange rate plays a significant role in the determination of asset prices in most of the selected countries, but the significance is stronger in the emerging markets economies. As the main objective of the paper, the study has found four of the selected countries to be bad news cases and eight of them are good news cases.

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Chapter 1

Introduction

1.1 Theoretical background and the gap

This paper builds upon Blanchard (1981)'s model of asset prices in a closed economy that was extended by Gavin (1989)to apply in a small open economy .Seeking to establish a relationship between the interest rates, output and the stock market in a closed economy, Blanchard builds a model for asset prices and analyses the dynamics of the model under monetary and fiscal policies. We update Blanchards model by introducing Taylor's rule for monetary policy and explicitly introduce income distribution as an extension from Asada et al. (2011). Furthermore, we provide empirical evidence to support the updated model,with particular attention given to the structure of the stock market that Blanchard terms good news case (GNC) and/or bad news case (BNC).

The dynamics analysis by Blanchard shows that the interaction between the stock market and output under macroeconomics policies may be viewed as a GNC and/or a BNC. Blanchard describes a GNC as a scenario where a macroeconomics policy increases output more than the responsiveness of monetary policy. A BNC is a scenario where the monetary policy is responsive in such a way that the increase in the Fed's rate more than offset the output. However, the lack of empirical evidence in support of GNC and/or BNC, as described by Blanchard, represents a gap that the current study intends to fill. Moreover, the fact that this has not yet been investigated in either developed or emerging markets economies provides us with additional impetus to address the problem.

1.2 Empirical Background of the Study

Little related literature have said a word about good and bad news cases scenarios. On the one hand, McQueen and Roley (1993),identify BNC to depend on the information that comes when the economy is experiencing growth. They document that an economy that is overheated can only send bad news to investors, but in a recession, the expectation of high output brings confidence and is characterised as a GNC. Jensen and Johnson (1993) on the other hand argue that the interest rate says all about the structure of the economy. Recently, Clarida and Woldman (2014) investigated the type of news that the surprise in expected inflation send to exchange

rate and monetary policy. They support the idea with empirical evidence and conclude that, overheated expected inflation is good news for the exchange rate.

This study contributes to the literature by providing empirical support to the GNC and/or BNC as per Blanchard's (1981) investigation. It is important to remind that Blanchards model assumes a closed economy but was extended by Gavin (1989)to apply in a small open economy. The current study considers a small open economy and provides empirical evidences using the role of exchange rate in monetary policy as per Taylor (2001). In other words, we are able to infer that the structure of the stock market in terms of GNC and/or BNC depends on the aptitude of the central bank (CB)s reaction to output.

A number of studies have raised the concern of whether monetary policy should take into account asset price movement while others have investigated the role of exchange rate in monetary policy rule. For example, Bernanke and Gertler (2001) argue that monetary policy should not respond to asset prices volatility while Bjornland and Leitimo (2009) show asset prices to be a source of important information that is necessary in conducting monetary policy. Further, Gali and Gambetti (2014) and Gali (2013) argue that, a clear understanding of the impact of interest rates on asset price bubbles is important if one is to understand the response of monetary policy to asset prices.

On the one hand, Benigno (2004) and Malikane and Semmler (2008) investigated the role of real exchange rate and monetary policy and the role of exchange in monetary policy rule respectively. Further, Flaschel et al (2014) present a model on the formation of market expectations around nominal exchange rate adjustment in a small open economys financial market. The above cited studies mostly focus on the dynamics aspect of exchange rate, but Malikane and Semmler argue that the central bank (CB) can enforce quicker response of macroeconomics variables to shocks by responding to exchange rate fluctuation.

On the other hand, studies such as Granger et al (2000), Poitras (2004), Boyd et al (2005), Mustafa and Nishat (2008), focus on the causal relationship and the reaction of stock markets to economic activities. For example, Bjornland and Halvorsen (2014) use a structural VAR model to show that exchange rate instantaneously responds to monetary policy shock.

1.3 Significance and contribution of the Study

We find the current study significant as it provides evidence on the structure of the stock market. The provided structure can be used by academics, policy makers and in particular investors who play significant role in the development of any economy.

In the case of Investors, understanding the structure of the stock market as well as the structure of the economy is important to make decisions about the direction of future investments. Knowing the past structure of the economy and given the current economic condition, policy makers will find this study useful when it comes to stabilizing financial crises . As noted by Rashid (2008), knowing the structure that an economy goes through over time is useful in

preventing and stabilising financial crises.

The main contribution of this study is to provide a clear evidence on the stock market structure and to give a bigger picture on how investors and policy makers can exploit this evidence to make profitable investment decisions as investors and formulate appropriate monetary policy as policy makers. Attempting this issue using econometric techniques is a useful contribution to the literature in terms of new evidence. To tackle this issue and provide appropriate solutions, we first modify the profit function in Blanchard (1981)'s and augment it with labour share and exchange rate.

Secondly, we introduce Taylor's rule in an open economy as compared to Blanchard and Gavin who use money markets instruments. The final model is a linear relationship between a group of independent variables which are output, the exchange, the inflation rate, the labour share and the stock price which is the dependent variable. This then allows us to provide good news cases and bad news cases as per Blanchard (1981) and using Wald test to account for the lags value in the regressions analysis.

The remainder of the paper is structured as follows: Chapter II presents the theoretical framework and chapter III the literature review. Chapter IV presents the methodology and empirical results and chapter V then summarizes the work and makes some recommendations.

Chapter 2

Theoretical derivation of the model

The theoretical background of the model is from Blanchard (1981) in a closed economy and Gavin (1989) in an open economy. Blanchard's model is an extension of the IS-LM framework and is built upon a number of assumptions. The stated assumptions underlying Blanchard's model are as follow: Output is determined by aggregate demand, the capital stock is assumed to be constant and the price level is assumed to follow slow adjustment. The difference between the IS-LM framework and the model that is updated in this study is that, IS-LM model relates the interest rate to output, but our model rather describes the interaction between asset value and output and analyses the impact of labor share, inflation and the real exchange rate on the asset prices, in a small open economy. Starting from the financial market, and using the no-arbitrage condition between short term bond and the shares, assuming that the financial market is in equilibrium, we have:

$$\frac{\dot{Q}_t}{Q_t} + \frac{V_t}{Q_t} = R_t \qquad (1)$$

In the above equation $\frac{\dot{Q}_t}{Q}_t$ is the expected capital gain assuming myopic perfect foresight $\frac{V_t}{Q_t}$, is the dividend yield and R_t is the short-term real interest rate and Q_t is the stock price, $(t \in R)$. The above no-arbitrage condition states that the total return of an individual investor in the stock market is equal to the sum of the dividend yield and the capital gain. For the condition to hold, investor's return must equal the short term real interest rate he earns in the risk neutral world.

For simplicity, we assume a linear relationship between profit and output as is suggested in Blanchard (1981). Recently, Donangelo (2014) studied labour mobility and its implication for asset prices. He models the operating profit to be what is left to firm after wages are paid. This study then assumes that firms in the economy trade in the international market by exporting as well as importing goods and services. Following the way Donangelo (2014) models the residual cash flow to firm and combining it with the functional form of firm revenue per unit of exportable good in Basu and Naj (2015), we then model the profit function as a linear relationship to output, exchange rate and labour share. Furthermore, Lawless and Whelan (2011) argue about the persistence of labour share and point out that the share of labour should be dynamically persistent and depends on its lag value. Given their analysis and point of view, we then find it relevant to introduce the lag of labour share in the profit function. The functional form is presented as follows:

$$\vartheta_t = \beta_0 - \beta_1 s_t - \beta_2 s_{t-1} + \beta_3 \hat{y}_t + \beta_4 \hat{y}_{t-1} \pm \beta_5 e_t \pm \beta_6 e_{t-1} \qquad (2)$$

The variable in the above function are in logarithm form. ϑ_t is the log of profit, s_t is labour share, $\hat{y}_t$ is output gap and e_t is the real exchange rate.

The above profit function states that, an increase in labour share negatively impacts the profit. We have separated the share of labour from the income and it is important to specify that. We acknowledge that capital investment depends on output and output itself depends on sales. The reason of using output gap in the profit function is that, as sale increases, this increases output and the gap between actual and potential output become small. If the firm is exporting goods and services, the depreciation of the exchange rate is favourable to the firm.On the contrary, if the firm buys its means of production from foreign markets, in that case, a depreciation of the exchange rate will cost the firm big money for the same quantity of inputs.

In the two most recent decades, central banks have changed their way of targeting inflation. The way of implementing monetary policy has changed from nominal money growth targeting to the adoption of inflation targeting. News frameworks have emerged and Taylor's rule has become one of the most used monetary policy rules. For example, Leitemo and Soderstrom (2005) find Taylor's rule to be more robust for an exchange rate model than other policies that respond to the depreciation of the exchange rate. Following Taylor (2001), and Smets and Wouters (2003), we consider a small open economy that uses the following interest rate rule and allows for lags.

$$r_t = r_0 + f_1^j \hat{\pi}_t + f_{1(-1)}^j \hat{\pi}_{t-1} + f_2^j \hat{y}_t + f_{2(-1)}^j \hat{y}_{t-1} + f_3^j \hat{e}_t + f_{3(-1)}^j \hat{e}_{t-1} \qquad (3)$$

Where r_t represents real short-term interest rate, π_t is the inflation rate, y_t is the output gap (that is the deviation of actual output from its full employment level) and e_t is the real exchange rates; $j \in \{1, 2, 3\}$, j stands for the number of variable in equation (3). In the long run, the central bank (CB) will have to increase or decrease the interest rate by r_0 to meet its primary objective which is low and stable inflation target. The short run policy accounts for fluctuation in the inflation, output and the real exchange rate. In the above specified Taylor rule, an increase in e_t is depreciation and a decrease e_t is an appreciation. Assuming that the financial market is in equilibrium, the no-arbitrage equation leads to:

$$\frac{\dot{Q}_t}{Q_t} = 0 \text{ and } Q_t = \frac{V_t}{R_t} \qquad (4)$$

Taking the logarithm of equation (4) gives us the relationship below:

$$\ln(Q_t) = \ln(V_t) - \ln(R_t) \qquad (5)$$

If we assume that:

$$\ln(Q_t) = q_t;\ \ln(V_t) = \vartheta_t \text{ and } \ln(R_t) = r_t$$

Equation (5) then becomes:

$$q_t = \vartheta_t - r_t \qquad (6)$$

By substituting equations (2) and (3) into equation (6) above we then have:

$$\hat{q}_t = -\beta_1 s_t - \beta_2 s_{t-1} - f_1^j \hat{\pi}_t - f_{1(-1)}^j \hat{\pi}_{t-1} \pm (\beta_3 - f_2^j)\hat{y}_t \pm (\beta_4 - f_{2(-1)}^j)\hat{y}_{t-1} \pm (\beta_5 - f_3^j)\hat{e}_t \pm (\beta_6 - f_{3(-1)}^j)\hat{e}_{t-1} \qquad (7)$$

If we suppose that:

$$(\beta_3 - f_2^j) = \tau_1;\ (\beta_4 - f_{2(-1)}^j) = \tau_2;\ (\beta_5 - f_3^j) = \gamma_3,\ (\beta_6 - f_{3(-1)}^j) = \tau_4$$

The final estimable equation of stock prices in term of the explanatory variables is as follows:

$$\hat{q}_t = -\beta_1 s_t - \beta_2 s_{t-1} - f_1^j \hat{\pi}_t - f_{1(-1)}^j \hat{\pi}_{t-1} \pm \tau_1 \hat{y}_t \pm \tau_2 \hat{y}_{t-1} \pm \gamma_3 \hat{e}_t \pm \tau_4 \hat{e}_{t-1} \qquad (8)$$

Equation (8) is linear and easy to estimate. It states that the real stock price gap is influenced by the labour share gap, the inflation rate gap, the output gap and the real exchange rate gap. The stock price is also influenced by the lag values of each of the explanatory variables. On the one hand, the share of labour and inflation are negatively related to the stock prices; on the other hand, output gap and the real exchange rate have ambiguous impact on the stock prices. Even though output and the real exchange exhibit ambiguous effect on asset prices, we are able to disentangle the effect due to economic conditions and the one due to the central bank's reaction to inflation using Taylor's rule

The coefficients β_1 and β_2 measure respectively the sensitivity of stock price to fluctuation in labour share and its lag value: that is by how much does the stock price increases when the share of labour increases or falls. The coefficients f_1^j and $f_{1(-1)}^j$ measure the reaction of the central bank to asset price when there is positive or decreasing movement in the current inflation rate or its lag value. The coefficients τ_1 and τ_2 measures respectively the sensitivity of asset prices to output. These two coefficients are of great concern in this study. Base on those two coefficients, we are able to tell whether the country is a GNC or BNC.

Looking at equation (7), If the $\beta_3 > f_2^j$, this is what Blanchard calls *good news case* (GNC) and if $\beta_3 < f_2^j$, Blanchard calls this *bad news case* (BNC). The same reasoning applies to the lag value of output gap with τ_2 as coefficient. The study combines the coefficients of the current and lag value of output to decide upon GNC and/or BNC. If $\beta_3 = f_2^j$, it means that output does not play a significant role in the determination of asset prices in the economy. Remember, as we specify above, good news case (GNC) and bad news case (BNC) is what our paper is about.

The coefficient γ_3 measures the sensitivity of the stock prices to the real exchange rate. Looking at equation (7), If $\beta_5 > f_3^j$, it means that one percent depreciation of the exchange rate will increase the stock prices by $(\beta_5 - f_3^j)$ or γ_3. Thus, it will be good news for countries that have export led growth such as the emerging markets economies. If $\beta_5 < f_3^j$, therefore, one percent depreciation of the exchange rate will lead to falling asset prices by γ_3.

Chapter 3

Literature review

We have established an estimable linear relationship between the stock prices and the real economy and also discuss the usefulness of the model. Our model shows that the stock market is related to the share of labour , output, inflation and the real exchange rate. This section look at the literature and summarises what has been done from the point of view of stock prices in relation to majors macroeconomics variables such as inflation, output and the real exchange rate. The reaction function of the monetary policy rule that is extensively used by the Central Bankers (Taylor's rule) to react to fluctuations in the price level is composed of variables that drive the economy. Given that, we then look at what has been found on the relationship between monetary policy, asset prices and the real exchange rate.

3.1 Asset prices and macroeconomics variables

The relationship between asset prices and the macroeconomics variables such as inflation, output and the real exchange rate have been investigated extensively. Flaschel et al (2014), for instance, introduce the market expectation formation in a behavioural macroeconomics model to analyse the source of macro-instabilities generated by the foreign exchange markets and that is characterised by endogenous expectations. Basu and Nag (2015) present a model that allows them to analyse the dynamic relationship between inflation and asset prices considering a flexible exchange rate regime and rational expectation. The model is useful for analysing the impact of different policy on asset prices.

Asada et al. (2011), on the other hand, present a macro-dynamic model that considers the goods market as well as the financial aspect of Blanchard (1981). Their model is useful when it comes to analysing the effect of the influence of monetary policy on the rate of profit through financial markets. Ogunmuyiwa and Okuneye (2014) find a negative relation between exchange rate and the stock prices in Nigeria but Kim (2003) uses the dollar exchange rate with an error correction model and finds that stock prices, the industrial production and the inflation adjust to correct disequilibrium in the market.

Nieh and Lee (2001) study G-7 countries and only find a short run relationship between asset prices and exchange rate. They find this to be negative in Germany and a day after positive

relationship in Canada and UK. Gay (2008) shows evidence of no significant relation between oil price, exchange rate and the asset prices, even not at lags level. Chkili and Nguyen (2014), focusing on the Brics countries and considering the exchange rate regime, find that stock prices strongly influence the exchange rate regardless of the level of volatility. Wasserfallen (1989) in a distributed lag model documents that, only unexpected interest rate and the price level negatively influences the stock market. Ma and Kao (1990) evaluate the reaction of the stock prices to changes in the exchange rate and argue that currency appreciation has a negative impact on the stock prices. Kim and In (2005) report a positive relation between stock returns and inflation for both short and long periods but a negative relation at intermediate scale. They further argue that, at intermediate scale, the stock market cannot play a hedging role for investors.

Filis et al. (2011) approve that the dynamic correlation between oil prices and the stock exhibit negative correlation. Their advice is tha, the oil market should not be used as hedging in the period of crisis. Aizenman et al. (2011) finds that the real exchange rate and inflation significantly determines policies that follow interest rate rule. They also find that the response to the exchange rate is strong in inflation targeting countries and countries that export basic commodities. Adrangi et al (2011) find the negative relationship between inflation and the stock market to hold in the Brazilian stock market. Clarida and Waldman (2008) argue that, when the inflation rate is higher than expected, this leads the exchange rate to appreciate. Geetha et al. (2011) find a long-run relationship between inflation and the stock market in China, Malaysia and the U.S. Laxton and Pesenti (2003) point out that emerging markets' economies rely too much on trade and expose themselves more to external shocks.

3.2 Monetary policy, stock prices and exchange rate

There have been debates on whether the Central Bank (CB)should consider asset prices as a policy variable to react to in its objective function. Gilchrist and Leahy (2002) have surveyed the literature on asset prices and monetary policy up to 2001. They argue that, there is a set of shocks that influence asset prices. The first set's influence lies in the future and the second affect the asset prices directly through net worth. Furthermore, they identify that asset prices can play three different roles in the economy: they can be used to determine the price level in the economy, they play a significant role in inflation forecasting and there is a structural link between asset prices and consumption and investments.

Hayo and Niehof (2014) develop a model that allows evaluating the monetary policy response after the 2008-2009 financial crises. The model can be used to explore the relationship between financial markets, monetary policy and the real economy. Christiano et al (2010) document that inflation is low when there is a stock market boom. This low level of inflation suggests that an inflation targeting Central Bank that focuses on anticipating inflation will tend to destabilise asset market that will in turn impact the economy, as they argued. In Africa, Aliyu (2011) investigated the reaction of the stock market to monetary policy in Nigeria and finds that asset returns only react to the unanticipated part of the monetary policy. The result of Aliyu (2011) is confirmed by Ioannidis and Kontonikas (2008) when analyzing the impact of monetary policy on stock prices.Frommel et al. 2011 reveal that Central Bank in emerging markets economies pay special attention to exchange rate movements even though their primary objective is not to target the exchange rate.

Clarida (2014) also argues that it is good for the economy if the Central Bank only targets the domestic inflation and let the exchange rate fluctuate. Bjornland and Leitemo (2008) quantify the stock prices to fall by 7% due to monetary policy shock. Faust and Rogers (2003) argue that large Uncovered Interest Parity (UIP) arises from monetary policy shock and the exchange rate's variance that the monetary policy takes into account may be small. In most of the cases, there have been studies on the relationship between stock prices and the variables. As we have established, the sign relationship of the variables is confirmed in the literature but none of the papers have specifically investigated the stock market structure in term of good news cases (GNC) and bad news case (BNC) and also in relation to monetary policy and income distribution between capital and labour. We now turn to present the data source, the econometric model and the empirical results.

Chapter 4

Methodology and Empirical Results

4.1 Methodology

4.1.1 Data and econometric techniques

The data we used in this study is obtained from the Federal Reserve Bank of Saint Louis. We have data points on the real stock prices, the real gross domestic product (GDP), consumer price index, labour shares in income distribution, the real stock price and the real exchange rate. The real exchange rate for Australia is obtained from the Reserve Bank of Australia's database. We choose the United States of America, France, Canada, Germany, Australia and the United Kingdom to be the developed economies. The emerging markets economies are South Africa, South Korea, Brazil, Poland, Mexico, and Turkey. The choice of the countries does not follow any particular criteria. The derived equation is linear in parameters and it allows us to use Ordinary Least Square (OLS) regression and test for serial correlation as an important disease from which time series data suffer (Gujarati & Porter, 2009).

The variables are in logarithm form and before running the regression, we test for the presence of unit root for all the variables and for all the twelve countries. After running the regressions, we test if the results are robust to sample selection by considering a sample period that starts from 1982 due to the crisis that occurred during that period. To test for the robustness we only selected countries that have long period data. Most of these countries are the developed countries, only South Africa has a long period data as an emerging market economy. We use Wald test to account for the coefficient of the lags variables that are included in the regression analysis. This test allows us to see if the combined coefficient of current and lags output of a country is of good news case and/or bad news case.

4.2 Empirical results

4.2.1 Unit root test and parameters estimation

This section, firstly presents the unit root test results and secondly, the results for parameters estimations for developed and emerging markets economies. Thirdly, it presents the robustness

check and additionally provides results with no serial correlation and describes the way no serially correlated results are obtained. The gaps of the variables are generated using Hodrick Prescott filtering method (HP-filter). The first two tables below report the unit root results for both developed emerging markets economies. The unit root test indicates no unit root in the variables and all the variables are stationary and can be used without worrying about disequilibrium issues.

Table 4.1: Unit root test results for Developed Economies

Australia	U.S.A	U.K	France	Germany	Canada
$(\hat{y}_t)$	$(\hat{y}_t)$	$(\hat{y}_t)$	$(\hat{y}_t)$	$(\hat{y}_t)$	$(\hat{y}_t)$
$-5.42^{\star}$	$-6.47^{\star}$	$-5.58^{\star}$	$-5.70^{\star}$	$-4.89^{\star}$	$-5.31^{\star}$
$-5.41^{\star}$	$-6.46^{\star}$	$-5.56^{\star}$	$-5.69^{\star}$	$-4.88^{\star}$	$-5.30^{\star}$
$-5.43^{\star}$	$-6.48^{\star}$	$-5.59^{\star}$	$-5.72^{\star}$	$-4.90^{\star}$	$-5.33^{\star}$
$(\hat{\pi}_t)$	$(\hat{\pi}_t)$	$(\hat{\pi}_t)$	$(\hat{\pi}_t)$	$(\hat{\pi}_t)$	$(\hat{\pi}_t)$
$-5.32^{\star}$	$-6.30^{\star}$	$-8.53^{\star}$	$-6.48^{\star}$	$-4.73^{\star}$	$-5.77^{\star}$
$-5.30^{\star}$	$-6.28^{\star}$	$-8.50^{\star}$	$-6.47^{\star}$	$-4.72^{\star}$	$-5.76^{\star}$
$-5.33^{\star}$	$-6.32^{\star}$	$-8.55^{\star}$	$-6.50^{\star}$	$-4.74^{\star}$	$-5.79^{\star}$
$(\hat{s}_t)$	$(\hat{s}_t)$	$(\hat{s}_t)$	$(\hat{s}_t)$	$(\hat{s}_t)$	$(\hat{s}_t)$
$-5.78^{\star}$	$-6.70^{\star}$	$-5.53^{\star}$	$-3.11^{\star\star}$	$-5.53^{\star}$	$-5.33^{\star}$
$-5.76^{\star}$	$-6.68^{\star}$	$-5.52^{\star}$	$-3.14^{\star\star}$	$-5.59^{\star}$	$-5.31^{\star}$
$-5.79^{\star}$	$-6.72^{\star}$	$-5.55^{\star}$	$-3.12^{\star}$	$-5.57^{\star}$	$-5.36^{\star}$
$(\hat{e}_t)$	$(\hat{e}_t)$	$(\hat{e}_t)$	$(\hat{e}_t)$	$(\hat{e}_t)$	$(\hat{e}_t)$
$-5.31^{\star}$	$-4.71^{\star}$	$-5.18^{\star}$	$-4.43^{\star}$	$-5.72^{\star}$	$-5.32^{\star}$
$-5.30^{\star}$	$-4.69^{\star}$	$-5.16^{\star}$	$-4.42^{\star}$	$-5.69^{\star}$	$-5.30^{\star}$
$-5.33^{\star}$	$-4.73^{\star}$	$-5.19^{\star}$	$-4.45^{\star}$	$-5.73^{\star}$	$-5.34^{\star}$
$(\hat{q}_t)$	$(\hat{q}_t)$	$(\hat{q}_t)$	$(\hat{q}_t)$	$(\hat{q}_t)$	$(\hat{q}_t)$
$-5.62^{\star}$	$-6.79^{\star}$	$-5.58^{\star}$	$-5.84^{\star}$	$-6.03^{\star}$	$-6.56^{\star}$
$-5.60^{\star}$	$-6.77^{\star}$	$-5.56^{\star}$	$-5.83^{\star}$	$-6.02^{\star}$	$-6.55^{\star}$
$-5.63^{\star}$	$-6.81^{\star}$	$-5.59^{\star}$	$-5.86^{\star}$	$-6.05^{\star}$	$-6.58^{\star}$

$\hat{y}_t$, is the real gdp gap, $\hat{\pi}_t$ is the inflation rate gap, $\hat{s}_t$ is the labour share gap, $\hat{e}_t$ is the exchange rate gap and $\hat{q}_t$ is the real stock price gap. $\star$means significance at 1%, $\star\star$ significance at 5%, $\star\star\star$significance at 10%.

Table 4.2: Unit root test results for emerging markets economies

Brazil	South Africa	South Korea	Turkey	Poland	Mexico
$(\hat{y}_t)$	$(\hat{y}_t)$	$(\hat{y}_t)$	$(\hat{y}_t)$	$(\hat{y}_t)$	$(\hat{y}_t)$
$-4.03^{\star}$	$-6.27^{\star}$	$-4.37^{\star}$	$-3.77^{\star}$	$-3.24^{\star}$	$-3.19^{\star}$
$-4.01^{\star}$	$-6.26^{\star}$	$-4.35^{\star}$	$-3.74^{\star}$	$-3.19^{\star\star\star}$	$-3.17^{\star\star\star}$
$-4.06^{\star}$	$-6.29^{\star}$	$-4.40^{\star}$	$-3.79^{\star}$	$-3.25^{\star}$	$-3.21^{\star}$
$(\hat{\pi}_t)$	$(\hat{\pi}_t)$	$(\hat{\pi}_t)$	$(\hat{\pi}_t)$	$(\hat{\pi}_t)$	$(\hat{\pi}_t)$
$-4.44^{\star}$	$-7.02^{\star}$	$-3.73^{\star}$	$-5.36^{\star}$	$-5.31^{\star}$	$-4.30^{\star}$
$-4.47^{\star}$	$-7.01^{\star}$	$-3.70^{\star\star}$	$-5.33^{\star}$	$-5.35^{\star}$	$-4.43^{\star}$
$-4.48^{\star}$	$-7.04^{\star}$	$-3.76^{\star}$	$-5.40^{\star}$	$-5.32^{\star}$	$-4.31^{\star}$
	$(\hat{s}_t)$	$(\hat{s}_t)$	$(\hat{s}_t)$	$(\hat{s}_t)$	$(\hat{s}_t)$
	$-5.05^{\star}$	$-3.89^{\star}$	$-5.04^{\star}$	$-7.52^{\star}$	$-2.99^{\star}$
	$-5.04^{\star}$	$-3.85^{\star\star}$	$-5.02^{\star}$	$-7.46^{\star}$	$-3.03^{\star}$
	$-5.07^{\star}$	$-3.92^{\star}$	$-5.07^{\star}$	$-7.58^{\star}$	$-3.03^{\star}$
$(\hat{e}_t)$	$(\hat{e}_t)$	$(\hat{e}_t)$	$(\hat{e}_t)$	$(\hat{e}_t)$	$(\hat{e}_t)$
$-4.43^{\star}$	$-5.01^{\star}$	$-3.73^{\star}$	$-5.14^{\star}$	$-3.89^{\star}$	$-3.42^{\star}$
$-4.40^{\star}$	$-4.99^{\star}$	$-3.70^{\star\star}$	$-5.05^{\star}$	$-3.86^{\star\star}$	$-3.87^{\star\star}$
$-4.47^{\star}$	$-5.03^{\star}$	$-3.764^{\star}$	$-5.18^{\star}$	$-3.92^{\star}$	$-3.45^{\star}$
$(\hat{q}_t)$	$(\hat{q}_t)$	$(\hat{q}_t)$	$(\hat{q}_t)$	$(\hat{q}_t)$	$(\hat{q}_t)$
$-3.82^{\star}$	$-5.84^{\star}$	$-4.68^{\star}$	$-4.88^{\star}$	$-3.06^{\star\star}$	$-3.55^{\star}$
$-3.80^{\star}$	$-5.82^{\star}$	$-4.65^{\star}$	$-4.86^{\star}$	$-3.04^{\star\star\star}$	$-3.52^{\star\star}$
$-3.85^{\star}$	$-5.85^{\star}$	$-4.71^{\star}$	$-4.90^{\star}$	$-3.09^{\star}$	$-3.58^{\star}$

$\hat{y}_t$, is the real gdp gap, $\hat{\pi}_t$ is the inflation rate gap, $\hat{s}_t$ is the labour share gap, $\hat{e}_t$ is the exchange rate gap and $\hat{q}_t$ is the real stock price gap. $\star$means significance at 1%, $\star\star$ significance at 5%, $\star\star\star$significance at 10%.

After the estimation of the parameters, we have found that, the real GDP gap is positively and strongly significant at 1% level of significance for all the countries. We found the same results for all the emerging markets economies; the real GDP gap is positive and significant at 1% level of significance for each of the emerging markets economies. This result confirms the positive relationship between asset prices and the industrial production documented by McQueen and Roley (1993). Labour share is negative and significant at 1% for Australia, France and Canada and South Africa. It is significant at 5% for South Korea, Poland and Mexico, but weakly significant at 10% for Turkey. This result confirmes the result of Hein (2015).

Table 4.3: Parameters estimate for developed economies

Parameters	Australia	U.S.A	U.K	France	Germany	Canada
s_t	-0.13	-	-	$-3.12^{\star}$	-0.29	$-2.52^{\star}$
	(0.82)			(0.84)	(0.24)	(0.76)
s_{t-1}	$-2.39^{\star}$	-	-	$-3.20^{\star}$	-	-
	(0.74)			(0.84)		
$\hat{y}_t$	$3.35^{\star}$	$4.7^{\star}$	$1.91^{\star}$	$6.94^{\star}$	$3.00^{\star}$	$2.94^{\star}$
	(1.16)	(0.66)	(0.61)	(1.60)	(0.97)	(0.62)
$\hat{y}_{t-1}$	$-2.86^{\star\star}$	-	-	$-8.07^{\star}$	-	-
	(1.17)			(1.68)		
$\hat{e}_t$	$0.45^{\star\star\star}$	$-2.27^{\star}$	$0.43^{\star\star}$	-0.65	$-2.50^{\star}$	-
	(0.25)	(0.80)	(0.17)]	(0.97)	(0.67)	
$\hat{e}_{t-1}$	$-0.47^{\star\star\star}$	-	-	-0.45	-	$0.53^{\star}$
	(0.26)			(0.98)		(0.20)
$\hat{\pi}_t$	-	$-0.85^{\star}$	$-2.06^{\star}$	-	-	$-2.03^{\star\star}$
		(0.81)	(0.43)			(0.85)
R^2	0.23	0.35	0.20	0.32	0.31	0.39
dw	0.56	0.55	0.55	0.50	0.34	0.39

s_t = labour share,$\hat{y}_{t-1}$ = real gdp gap,$\hat{e}_t$ = real exchange rate gap, $\hat{\pi}_t$ = inflation rate gap,. $\star$means significance at 1%, $\star\star$ significance at 5%, $\star\star\star$significance at 10%, R^2 =R-square and dw = Durbin Watson statistics, ()= standard errors.

The numbers without brackets are the coefficients and the numbers in brackets are the standard errors.The real exchange rate gap has a positive and significant impact on asset price for Australia, the United Kingdom and Canada, but negative for France, the United States and Germany. Exchange rate, in most of the emerging markets economies exhibits a positive and significant impact on the stock prices. The inflation rate is negative and significant for the United States, the United Kingdom and Canada. Except for South Africa and Poland where the inflation rate does not plays any significant role, we have found that the inflation rate in the emerging markets economies, such as Brazil, South Korea, Turkey and Mexico, exhibits a significant and negative impact on asset prices.

A part from the impact of labour share, the impact of exchange rate and the inflation rate on the asset prices have been extensively investigated by the literature. The result that we consider as innovative is the impact of labour share on the stock prices. We have documented that the labour share is a key variable that need to be considered in asset prices modeling by practitioners as well as academics. Labour share is found to be negative and significant for eight of the twelve countries (those are Australia, France, Canada, South Africa, South Korea, Poland, Mexico and Turkey).

Table 4.4: Parameters estimate for emerging markets economies

Parameters	Brazil	South Africa	South Korea	Turkey	Poland	Mexico
s_t	-	$-3.35^{\star}$	$-1.15^{\star\star}$	$-1.39^{\star\star\star}$	$-1.69^{\star\star}$	$-2.19^{\star\star}$
		(0.40)	(0.54)]	(0.77)	(0.68)	(0.92)
s_{t-1}	-	-	-	-	-1.75	-
					(0.66)	
$\hat{y}_t$	$-4.92^{\star}$	$2.13^{\star}$	$3.80^{\star}$	$3.42^{\star}$	$7.41^{\star}$	$1.81^{\star}$
	(1.25)	(0.57)	(0.84)	(0.73)	(1.99)	(0.64)
$\hat{y}_{t-1}$	-	-	-	-	-2.75	-
					(2.01)	
$\hat{e}_t$	$1.00^{\star\star\star}$	$0.35^{\star}$	0.11	1.09	$1.36^{\star}$	1.66
	(0.26)	(0.11)	(0.30)	(0.42)	(0.49)	(0.33)
$\hat{e}_{t-1}$	$-0.78^{\star\star\star}$	-	-	-	-1.34	$-1.38^{\star}$
	(0.29)				(0.49)	(0.34)
$\hat{\pi}_t$	-2.52	-	$-6.43^{\star}$	1.32	-	$-3.71^{\star}$
	(1.01)		(1.45)	(0.47)		(1.01)
R^2	0.50	0.42	0.63	0.43	0.44	0.65
dw	0.88	0.62	1.10	0.84	0.59	0.96

s_t = labour share,$\hat{y}_{t-1}$ = real gdp gap,$\hat{e}_t$ = real exchange rate gap, $\hat{\pi}_t$ = inflation rate gap,. $\star$means significance at 1%, $\star\star$ significance at 5%, $\star\star\star$significance at 10%, R^2 =R-square and dw = Durbin Watson statistics,()= standard errors.

Desai (1973) presents and extends Goodwins model in the growth cycles and inflation in a model of class struggle. He argues that, for the return on capital to increase, the labour share in the income distribution has to decrease. The present study supports that view as it has found a similar result between the stock prices and the labour share. The only countries for which this relationship is not significant are: The United Kingdom, the United States and Germany and there was no quarterly data on labour share from Brazil.

4.2.2 Robustness check

How robust are the results we have found to sample selection? We answer this question by re-running the regressions for the countries that have long period data. This is done by adjusting the sample period to be from 1982 to 2012 due to the economic crisis that occurs in 1982. The results are presented in table 5 below. Only six of the twelve countries have enough data that allows us to test for the robustness (those countries are Australia, the United States, the United Kingdom, France, Canada and South Africa).

Table 4.5: Parameters estimate for sample selection: robust results

Parameters	Australia	U.S.A	U.K	France	Canada	South Africa
s_t	2.08	-	-	$-3.07^{\star}$	-2.55	$-3.19^{\star}$
	(1.23)			(0.85)	(0.80)	(0.75)
s_{t-1}	$-1.76^{\star}$	-	-	$3.03^{\star}$	-	-
	(1.02)			(0.85)		
$\hat{y}_t$	$5.71^{\star}$	$5.67^{\star}$	$1.90^{\star}$	$7.03^{\star}$	$2.64^{\star}$	$2.12^{\star}$
	(1.55)	(0.75)	(0.66)	(1.80)	(0.68)	(0.73)
$\hat{y}_{t-1}$	$-6.26^{\star\star}$	-	-	$-8.05^{\star}$	-	-
	(1.57)			(1.78)		
$\hat{e}_t$	0.28	$-0.89^{\star}$	$0.60^{\star\star}$	-0.76	$0.57^{\star}$	0.30
	(0.25)	(0.20)	(0.20)	(1.00)	(0.20)	(0.14)
$\hat{e}_{t-1}$	$-0.56^{\star\star\star}$	-	-	-0.49	-	-
	(0.26)			(1.00)		
$\hat{\pi}_t$	-	$-3.39^{\star}$	$-2.17^{\star}$	-	-2.35	-
		(1.04)	(0.91)		(0.90)	
R^2	0.17	0.38	0.21	0.34	0.36	0.20
dw	0.70	0.58	0.44	0.50	0.49	0.57

s_t = labour share,$\hat{y}_{t-1}$ = real gdp gap,$\hat{e}_t$ = real exchange rate gap, $\hat{\pi}_t$ = inflation rate gap,. $\star$means significance at 1%, $\star\star$ significance at 5%, $\star\star\star$significance at 10%, R^2 =R-square and dw = Durbin Watson statistics,()= standard errors.

The results we have are pretty much the same; for example, we found that the real GDP gap is significant at 1% percent level for all six countries. This is the same we found without removing the observations before 1982. Given the presented results, we then conclude that the results are robust or still bear the same information whatever the sample period is.

4.2.3 Identification and correction of serial correlation

The robustness check does not guarantee or remove the serial correlation problem that is always observed with time series data. To account for this, we test for serial correlation and correct for it. We correct for this by introducing a momentum variable in the regression analysis. We use lags values of the dependent variable (the stock prices) as momentum variable (Gujarati & Porter, 2011). The results are presented in table 6 below and show that, after introducing the momentum variable, the real GDP gap the real exchange rate gap and inflation are still significant at 5% for the Unite States. The same holds for UK, as the real exchange rate and the inflation gap are significant at 1% level of significance. The labour share gap is still negative and significant for Germany and France, and the real exchange rate gap is significant at 5% for Canada.

Table 4.6: Parameters estimate for developed economies and corrected for serial correlation

Variables	Australia	U.S.A	U.K	France	Germany	Canada
s_t	-0.16	-	-	$-0.84^{\star\star\star}$	$-0.26^{\star\star}$	-0.68
	(0.50)			(0.48)	(0.12)	(0.54)
s_{t-1}	-0.06	-	-	-0.21	-	-
	(0.48)			(0.50)		
$\hat{y}_t$	-0.58	$1.30^{\star\star}$	0.50	0.86	-0.05	0.60
	(0.75)	(0.54)	(0.41)	(0.96)	(0.59)	(0.57)
$\hat{y}_{t-1}$	-0.14	-	-	$-2.16^{\star}$	-	-
	(0.73)			(0.99)		
$\hat{e}_t$	$0.67^{\star\star\star}$	$-0.33^{\star}$	$0.29^{\star\star}$	-0.40	-0.42	-
	(0.15)	(0.13)	(0.11)	(0.55)	(0.37)	
$\hat{e}_{t-1}$	-0.78	-	-	0.01	-	$0.32^{\star\star}$
	(0.16)			(0.54)		(0.14)
$\hat{\pi}_t$	-	$-1.23^{\star}$	$-0.82^{\star}$	-	-	-
		(0.53)	(0.30)			
$\hat{q}_t$	$0.94^{\star}$	$1.05^{\star}$	$0.85^{\star}$	$1.06^{\star}$	$1.21^{\star}$	$0.98^{\star}$
	(0.07)	(0.08)	(0.07)	(0.09)	(0.10)	(0.09)
$\hat{q}_{t-1}$	$-0.18^{\star\star}$	$-0.39^{\star}$	$-0.24^{\star}$	$-0.28^{\star}$	$-0.42^{\star}$	$-0.35^{\star}$
	(0.07)	(0.08)	(0.07)	(0.09)	(0.10)	(0.09)
R^2	0.72	0.73	0.68	0.79	0.82	0.72
dw	2.03	1.96	1.72	1.92	1.89	1.88

s_t = labour share,$\hat{y}_{t-1}$ = real gdp gap,$\hat{e}_t$ = real exchange rate gap, $\hat{\pi}_t$ = inflation rate gap,. $\star$means significance at 1%, $\star\star$ significance at 5%, $\star\star\star$significance at 10%, R^2 =R-square and dw = Durbin Watson statistics,()= standard errors.

In Summary, the R-square indicate that more than 60% of the fluctuation in asset prices in each country is explained by the real GDP gap, the real exchange rate gap, the labour share gap, and the inflation gap. We then conclude that the previously mentioned variables in the results with serial correlation are still the main drivers of asset prices movement in the developed economies.

We apply the same technique to emerging markets economies and present the results in table 7 below. The labour share is negative and significant at 5% for South Africa and at 10% for Turkey and Poland. The real GDP gap is weakly significant at 10% for Turkey and Poland but the real exchange is strongly significant at 1% for Poland, Mexico and Brazil. The same variable (exchange rate) is significant at 5% for South Africa. The inflation rate gap is negative and significant at 1% for South Korea and 5% for Mexico. The DW test statistic fluctuates around 2 for all the countries, showing that the problem of serial correlation is removed. The R-square is above 70% for five of the countries (Brazil, South Africa, South Korea, Poland and Mexico) and indicates that 67% of fluctuation in asset prices is explained by the real GDP gap, the real exchange rate gap, the inflation rate and the labour share For Turkey. Given these results, we conclude that the above mentioned independent variables are the most important to consider in the valuation of asset prices in emerging markets economies.

Table 4.7: Parameters estimate for emerging markets economies and corrected for serial correlation

Parameters	Brazil	South Africa	South Korea	Turkey	Poland	Mexico
s_t	-	$-1.55^{\star}$	-0.72	$-1.11^{\star}$	$-0.60^{\star\star\star}$	-0.99
		(0.30)	(0.44)	(0.60)	(0.35)	(0.91)
s_{t-1}	-	-	-	-	0.30	-
					(0.36)	
$\hat{y}_t$	0.92	0.29	0.77	$1.20^{\star\star\star}$	$1.94^{\star\star\star}$	0.99
	(1.18)	(0.46)	(0.84)	(0.66)	(1.04)	(0.59)
$\hat{y}_{t-1}$	-	-	-	-	-2.91	-
					(0.99)	
$\hat{e}_t$	$0.63^{\star}$	$0.16^{\star\star}$	0.09	0.47	$1.02^{\star}$	$1.21^{\star}$
	(0.20)	(0.07)	(0.24)	(0.33)	(0.24)	(0.29)
$\hat{e}_{t-1}$	$-0.77^{\star}$	-	-	-	$-1.38^{\star}$	$-1.30^{\star}$
	(0.22)				(0.24)	(0.30)
$\hat{\pi}_t$	-1.28	-	$-5.36^{\star}$	0.48	-	$-2.06^{\star\star}$
	(0.81)		(1.19)	(0.39)		(0.94)
$\hat{q}_t$	$0.91^{\star}$	$0.93^{\star}$	$0.55^{\star}$	$0.80^{\star}$	$1.01^{\star}$	$0.72^{\star}$
	(0.13)	(0.07)	(0.09)	(0.12)	(0.10)	(0.13)
$\hat{q}_{t-1}$	$-0.29^{\star\star}$	-0.32	-	$-0.26^{\star\star}$	$-0.19^{\star\star}$	$-0.28^{\star\star}$
	(0.11)	(0.07)		(0.11)	(0.09)	(0.11)
R^2	0.73	0.74	0.76	0.67	0.87	0.77
dw	1.94	1.94	1.85	1.81	1.64	2.01

s_t = labour share,$\hat{y}_{t-1}$ = real gdp gap,$\hat{e}_t$ = real exchange rate gap, $\hat{\pi}_t$ = inflation rate gap,. $\star$means significance at 1%, $\star\star$ significance at 5%, $\star\star\star$significance at 10%, R^2 =R-square and dw = Durbin Watson statistics,()= standard errors.

We graph the actual, fitted and the residuals to see how they move in the long-run. The graphs are presented in the appendix (Appendix A) and they show that, whether in the developed or emerging markets economies, the model fits well the data and shows an equilibrium relationship between the variables. This finding is confirmed by the unit root test presented in table one and two. The unit root test shows that all the variables and in each country are stationary and describe an equilibrium relationship.

4.2.4 Good new cases and/or bad new cases

We have presented the results on the sign and significance relationship between the variables, but the main purpose of this paper is to describe the stock market structure under the countrys monetary policy. This is the next step we take and in the table 8 below are the results. We use a Wald test which allows us to take the coefficient of the independents lags variables into account when judging a country of being a good news case and/or bad news case. When there is more than one period lags of the real output gap in the regression, we test the sum of the coefficient of output plus its lags values to be equal to zero.Equation (7) above states that good news case or bad news case emerges when the reaction of the central bank to correct for the inflationary pressure in the economy is less or more than offsets the increase in output.

Table 4.8: Results for good news case (GNC) and/or Bad news case (BNC)

	Results				Results csc			
Countries	value	t-stats	GNC	BNC	value	t-stats	GNC	BNC
Australia	-0.49	-0.59	-	yes	$-0.72^{\star\star\star}$	-1.29	-	yes
U.S.A	$4.7^{\star}$	7.77	yes	-	$1.30^{\star\star}$	2.39	yes	-
U.K	$1.91^{\star\star}$	3.11	yes	-	$0.50^{\star\star\star}$	1.22	yes	-
France	$1.12^{\star\star\star}$	-1.22	-	yes	$-1.30^{\star\star}$	-2.36	-	yes
Germany	$3.00^{\star\star}$	3.08	yes	-	-0.05	-0.08	-	yes
Canada	$2.94^{\star}$	4.69	yes	-	0.60	1.06	yes	-
Brazil	$0.92^{\star\star}$	3.90	yes	-	0.92	0.77	yes	-
S Africa	$2.13^{\star\star}$	3.73	yes	-	0.29	0.62	yes	-
S Korea	$3.80^{\star}$	4.49	yes	-	0.77	0.92	yes	-
Turkey	$0.41^{\star\star\star}$	1.48	yes	-	$1.20^{\star\star\star}$	1.80	yes	-
Poland	$4.66^{\star\star}$	3.15	yes	-	-0.96	-1.10	-	yes
Mexico	$1.81^{\star\star}$	2.80	yes	-	$0.99^{\star\star\star}$	1.67	yes	-

GNC= good news case, BNC= bad news case, results csc= results corrected for serial correlation, yes= presence of good news cases and/or bad news cases, $\star$ means significance at 1%, $\star\star$ significance at 5%, $\star\star\star$ significance at 10%.

The result presented in table has two parts. The first part is for the regression with the presence of serial correlation in the residuals. The second part is the result after we correct for serial correlation. The first part of the result show that 10 out of the twelve countries, most of the time show good news case (U.S.A, U.K, Germany, Canada, Brazil, South Africa, South Korea, Turkey, Poland and Mexico) and the other two show bad news case (France and Australia). After we correct for serial correlation, two of the good news countries become bad news countries (Germany and Poland). The results indicates that in the good news countries (U.S.A, U.K, Canada, Brazil, South Africa, South Korea, Turkey and Mexico), the Central Bank is not that aggressive when implementing its inflation targeting policy, but it is aggressive in the bad news case countries (Australia, Germany, France and Poland).

Chapter 5

Recommendations and Conclusion

5.1 Recommendations

The results we have provided above, indicate that, the central bank of four of the selected countries have been aggressive in fighting inflation and eight of them are less aggressive. We recommend that academic researchers take this finding into account when proposing or building appropriate models for monetary policy implementation in countries such as Germany, France, Poland and Turkey. This information is useful in deciding whether the central bank should care about fluctuations in asset prices as it provides what could have happened to investors confidence when asset prices are targeted. Policy makers would find this important as the study describes the structure of the stock market and what types of news a monetary policy communicates to investor over times.

This study is useful for investors that need information on the countrys macroeconomics conditions before investing. We recommend that they take this into consideration as it is useful in their investment decision making process. In other words, we recommend that investors, based on this study and as a macroeconomic condition look for the behavior of the stock market structure over time before the decision of investing in that country. For example, in countries with good new cases, this signifies that it is time to buy as the stock price is going to increase in the near future. Bad new case simply implies that the stock price will fall in the near future and it is time to sell.

One of the Innovative results found in this paper is the strong relationship between asset prices and the labour share. This variable reveals itself to be considered in any asset pricing model as it is negative and significant at 1% level for France, Canada Australia, and South Africa. The same variable is significant at 5% for South Korea, Mexico and Poland and weakly significant at 10% for Turkey. That is eight of the selected countries exhibit a significant and negative relation between the stock price and the share of labour. Furthermor, we also recommend that any other study that builds upon this study take its weaknesses into consideration and provide more accurate results than the ones provided in this paper.

5.2 Conclusion

The objective of this paper is to investigate the structure of the stock market as it is defined in Blanchard (1981) in terms of good news cases and/or bad news cases. We have done this by updating Blanchards model, a model for stock price that takes into consideration, the distribution of income between labour and capital: an extension from Asada et al.(2011), the monetary policy rule that is conducted under Taylor's rule and the role of the exchange rate in stock price determination. We provide empirical evidence to the model in six developed and six emerging markets economies. We have found that the real GDP is positively and strongly significant for all the countries and the real exchange rate plays a significant role in emerging markets economies in term of asset pricing. Labour share has proven itself to be an important variable to be included in asset pricing models in most of the developed and emerging markets economies. The results confirm the negative relationship between inflation and the real stock prices and we have found four of the countries to be of bad news cases and eight of them to be good news cases. The results provided in this paper turn out to be important for policy makers as well as investors.

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Appendix A

Actual, fitted and residuals plots

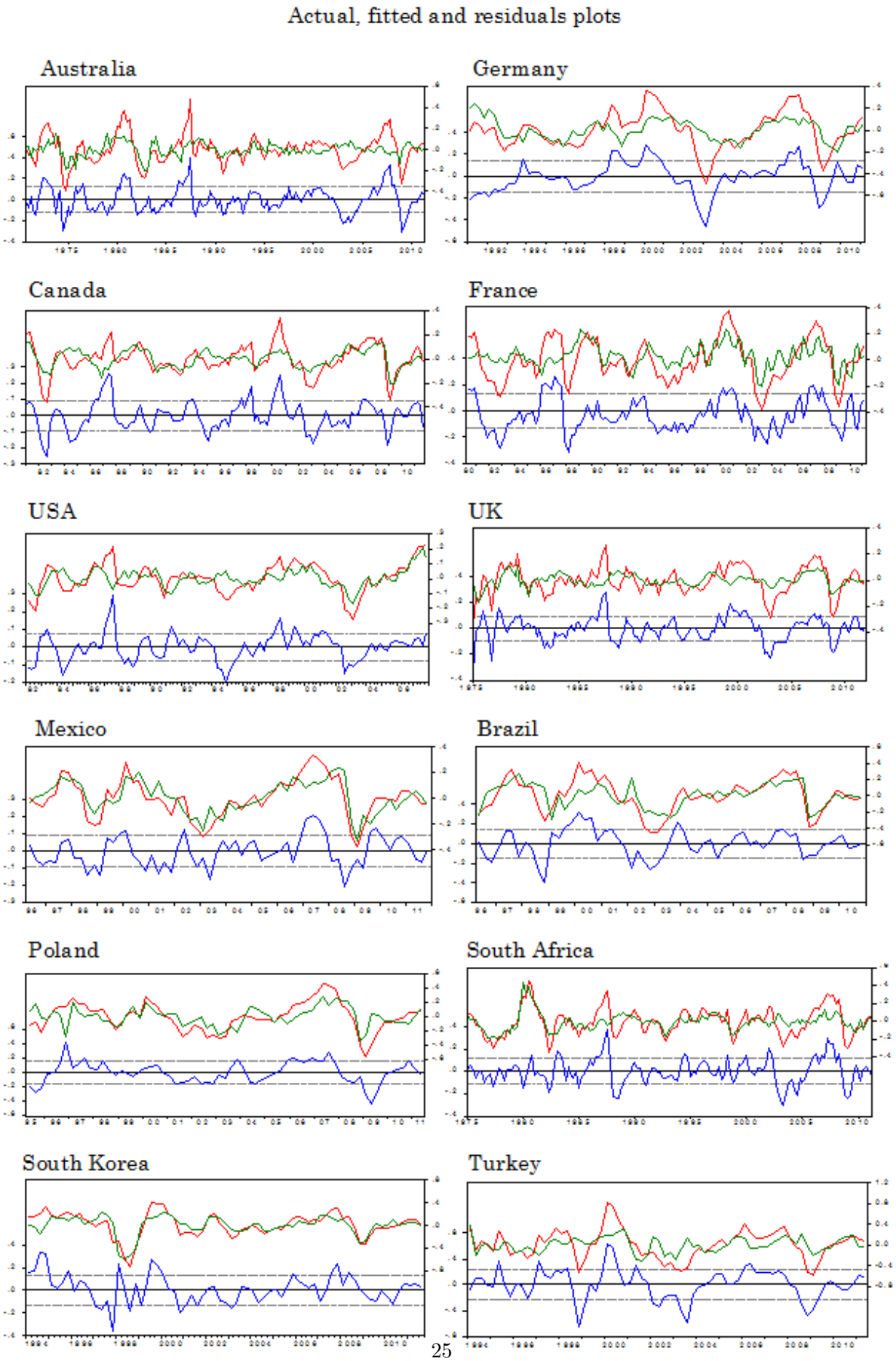

Figure A.1: Actual, fitted and residuals plots
Source:AUTHOR