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# The efficacy of macroeconomic policies in resolving financial market disequilibria: A cross-country analysis

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Version: Accepted Manuscript

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**The Efficacy of Macroeconomic Policies in Resolving Financial Market Disequilibria: A**

**Cross-Country Analysis**

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**Keywords:** Macroeconomic Policies, Financial Market, Disequilibria, Political Landscape, Global Financial Integration

**Abstract**

This study attempts to evaluate the efficacy of macroeconomic policies in resolving financial market disequilibria and to elucidate the influence of the political landscape and global financial integration on the policymaking process. The current investigation examines three macroeconomic policies (i) government spending, (ii) liquidity provision and (iii) central bank interest rates by analysing 21 countries around the globe. The results suggest that government spending is a suboptimal macroeconomic policy for mitigating imbalances in financial markets, as it may have destabilizing effects. Liquidity provision was found to be ineffective in facilitating financial market stability whereas the adjustment of interest rates was found to be a viable tool for mitigating financial market imbalances. Therefore, an appropriate policy framework would comprise the following: prudent government spending, conditional liquidity provision and a reduction in interest rates following the development of financial market disequilibria. Furthermore, this study found strong evidence against the notion that political orientations influence policy frameworks which were designed to redress financial market disequilibria. This study also found that global financial integration does not influence the policymaking process.

## 1. Introduction

Following the 2008 Financial Crisis, policy frameworks designed to mitigate financial market disequilibria and economic downturns have been re-evaluated in an attempt to identify the role of macroeconomic policies in supplementing macroprudential regulation (Blanchard, *et al*., 2012). A paradigm shift regarding conventional policy frameworks which focus on core economic objectives has occurred, with many countries such as the United States, the United Kingdom, and Japan providing unorthodox support to financial systems through macroeconomic policies (Feenstra and Taylor, 2014). Given the dynamic and unpredictable nature of financial systems, the task of designing and implementing macroeconomic policies to resolve financial market disequilibria and stimulate economies is particularly challenging. Macroeconomic policies may also be subject to the influence of the political landscape and global financial integration, which may determine the choice and efficacy of these policies (Soare, 2013).

The function of macroeconomic policies in resolving financial market disequilibria has undergone a certain degree of clarification in recent years (Blanchard, *et al*., 2012). Regarding fiscal policies, the use of government spending as a stabilisation tool in financial markets is typically given more credence than tax policies (Delong, *et al*., 2012). Bachmann and Sims (2012) postulated that increasing government expenditure fosters confidence within financial markets, which may alleviate any bottlenecks in the flow of funds and help redress financial market imbalances. However, Afonso and Sousa (2011) argued that government-spending shocks increase interest rates and displace consumption and investment.[1] As for monetary policies, many studies such as Mishkin (2011) and Gali (2013) posited that a viable

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[1] This is known as the 'crowding out' effect as government-spending shocks utilise resources that are often limited during periods of financial market disequilibria or recessions (Auerback and Gorodnichenko, 2013).

policy framework to resolve financial market disequilibria includes providing liquidity[2] and adjusting interest rates or repo rates. Providing liquidity and reducing interest rates may alleviate the funding shortages of financial intermediaries, which increases lending activities and helps mitigate financial market disequilibria (Woodford, 2012). Other studies however argue the low interest rate policy and excess liquidity lead financial intermediaries to take excessive risks (Taylor, 2009). More specifically, Taylor (2009) criticises the monetary policies by central banks such as the US Federal Reserves that held interest rates too low for too long in the run up to the 2008 Financial Crisis. Hence, prior literature suggest that the primary macroeconomic policies used to resolve imbalances in financial markets may be government expenditure, liquidity provision and the adjustment of interest rates.

Macroeconomic policies are subject to the influence of the political landscape, which may affect their efficacy in mitigating financial market disequilibria (Soare, 2013). The core objectives of macroeconomic policies are often determined by the political ideologies of governments and their electoral accountability (Fredriksson, *et al*., 2013). Rausser, *et al* (2011) Bjornskov and Potrafke (2011) postulated that political ideologies determine the urgency attributed to financial market and economic issues, as objective economic interests and subjective preferences vary across political orientations. Fundamental to the left-wing or liberal perspective is the significant role of governments in achieving distributive justice[3] (Hayek, 2012). Essentially, left-wing governments have a tendency to prioritise the reduction of unemployment, implementing macroeconomic policies primarily to restore economic stability, facilitate an equal distribution of income and property and prevent market abuse

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[2] Central banks provide liquidity to financial intermediaries through open market operations. A paragon of liquidity provision is the Term Action Facility (TAF) implemented by the United States Federal Reserve which allows financial intermediaries in the United States to bid for sound short-term loans that have relatively low interest rates (Mishkin, 2011).

[3] Distributive justice refers to the fair distribution of goods and services throughout a society (Greenberg and Cohen, 2014).

(Hutchison, 2013). Conversely, proponents of the right-wing or conservative perspective oppose intrusive government intervention (Bjornskov and Potrafke, 2011). Right-wing governments have an inclination to pursue price stability, with unemployment being secondary in their macroeconomic objectives (Thompson, 2014). Hence, right-wing governments try to facilitate market solutions before intervening. Suffice to say, extremism in political ideologies is rare, as there tends to be some convergence across the political spectrum (Hutchison, 2013). Nevertheless, the political landscape generates profound interference throughout the policymaking process, determining the timing and choice of macroeconomic policies implemented to mitigate financial market imbalances (Soare, 2013). As such, the political landscape may influence the efficacy of macroeconomic stabilisation policies.

Beyond the political landscape, the choice of macroeconomic policies is also influenced by global financial integration[4] (Koenig and Zeyneloglu, 2010; Corbett and Xu, 2015). Notwithstanding the fact that global financial integration encourages the flow of funds, it also increases contagion or the exposure of financial systems to systemic risks (Corbett and Xu, 2015). Many studies such as Feenstra and Taylor (2014) and Karras (2014) argued that global financial integration increases policy spillovers[5] between countries, and governments tend to respond to these externalities by implementing various macroeconomic policies. Moreover, the efficacy of macroeconomic policies may also be partially contingent on the degree of global financial integration (Mishkin, 2009). By increasing arbitrage opportunities, global financial integration may inhibit the real effects of expansionary fiscal policies (Mishkin, 2009). As for monetary policies, global financial integration reduces the ability of central

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[4] Global financial integration refers to the interconnectedness of financial systems around the world (Corbett and Xu, 2015).
[5] Policy spillovers are instances where macroeconomic policies implemented in a particular country influence developments in another country (Karras, 2014).

banks to control market interest rates, intensifying the role of exchange rates as policy transmission mechanisms (Gadanecz and Mehrotra, 2014). There has also been a growing consensus throughout the existing literature that global financial integration induces the coordination of macroeconomic policies across countries, led by a cohort of countries such as the Group of Seven (G7)[6] (Feenstra and Taylor, 2014). By impeding the efficacy of macroeconomic policies and potentially reducing the level of autonomy governments have in the policymaking process, global financial integration can influence the choice of macroeconomic policies that governments administer (Feenstra and Taylor, 2014). Thus, global financial integration may have significant implications on the effectiveness of macroeconomic policies implemented to resolve financial market disequilibria.

The purpose of this study is to elucidate an effective macroeconomic policy framework for resolving financial market disequilibria, accounting for the influence of the political landscape and global financial integration on the choice of macroeconomic policies. As such, this study aims to (i) determine the efficacy of macroeconomic policies (government spending, liquidity provision and central bank interest rates) in resolving imbalances in financial markets; (ii) ascertain whether or not political orientations influence the policymaking process in terms of the choice of macroeconomic policies implemented to resolve financial market disequilibria[7]; and (iii) elucidate the influence of global financial integration on the choice of macroeconomic policies aimed to resolve financial market disequilibria.

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[6] The G7 or Group of Seven is a bloc consisting of strong industrial countries, namely Canada, the United States, the United Kingdom, Germany, France, Italy and Japan (Taylor, 2013).
[7] Regarding the influence of political orientations, this study only considers the three main political orientations rather than the entire political spectrum.

## 2. Literature Review

Literature on macroeconomic policies has begun to transcend the notion that macroeconomic policies should primarily be implemented to minimise the amplitude of the general economic cycle. Various studies have highlighted the significance of macroeconomic policies relative to resolving financial market disequilibria. Recent studies revolve around the debate on whether or not macroeconomic policies should be implemented to redress financial market imbalances.

Three cardinal perspectives originate from the emergence of the significance of macroeconomic policies, which are that macroeconomic policies should be either proactive, or reactive or neutral in nature. A fundamental feature of theories that advocate proactive macroeconomic policies is the notion that financial market disequilibria can be identified. Studies such Yurichuk (2010) and Schwaab *et al*. (2013) argue that preventative measures should be implemented since financial market disequilibria can be identified. Proponents of proactive macroeconomic stabilisation policies also argue that there is an inherent lag in macroeconomic stabilisation policies, which necessitates more pre-emptive measures (Kobayashi, 2013; Stoian, 2014). Studies have also investigated the financial market conditions necessary for macroeconomic policies to be implemented (Bask, 2012; Gwilym, 2013).

Furthermore, studies rooted in this perspective argue that alternative measures such as macroprudential regulation, though less invasive than macroeconomic policies, are ineffective in resolving financial market disequilibria (Evanoff, *et al*., 2012). Based on the premise that volatility in one market can induce panic in another market, Liang *et al*. (2012) analysed the interaction between different financial market imbalances. Liang *et al*. (2012)

concluded that macroprudential regulation does not adequately restore market fundamentals or impede information-induced panic, which may perpetuate financial market imbalances.

Contrary to proactive macroeconomic policy advocates, proponents of reactive macroeconomic policies argue that financial market disequilibria cannot be easily identified. Posen (2011) argued that conventional indicators of financial market imbalances such as credit growth are not robust and may not capture financial market disequilibria. Moreover, König and Pothier (2015) added that contemporary models do not provide easily measurable and unequivocal indicators that policymakers can use. Hence, with the inherent difficulty in identifying financial market dislocations, policy frameworks may not be effective. Many studies have also argued that reactive macroeconomic stabilisation policies effectively resolve financial market disequilibria with little externalities (Junevicius and Justinaviciene, 2010).

Gali (2013) suggested that proactive monetary policies such as raising interest rates during the formation of financial market disequilibria are counterproductive because financial market volatility may increase as a result.[8] Yao *et al.* (2014) augmented the propositions of Gali (2013) and concluded that the effectiveness of monetary policies in resolving financial market disequilibria in the short-run depends on investor behaviour.[9] These studies suggest that proactive macroeconomic stabilisation policies may be too impulsive and reactive macroeconomic stabilisation policies may be less invasive and more effective.

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[8] Studies such as Taylor (2009), however, argue that low interest rates may have set the stage for the 2008 Financial Crisis.

[9] For instance, irrational investors may trade against macroeconomic policies (Yao, *et al*., 2014; Hanson and Stein, 2015). Other key studies such as Driffill (2013) and Huang and Yeh (2015) argued that systematic fiscal policies are more effective than monetary policies such as quantitative easing which may hinder financial market stability by increasing the risk exposure of central banks.

Prior to the 2008 Financial Crisis, many studies such as Bernanke *et al*. (1999) postulated that macroeconomic stabilisation policies aimed at resolving financial market imbalances were unnecessary.[10] Years later, Kuttner (2012) postulated that macroprudential regulation is pivotal in resolving financial market imbalances and facilitating financial market stability. Acharya and Naqvi (2012) augmented this proposition and concluded that macroprudential regulation should aim to reduce excess liquidity since excessive leveraging is the primary driver of financial market imbalances. However, both Kuttner (2012) and Acharya and Naqvi (2012) disregarded the fact that reducing liquidity may lead to liquidity hoarding in the financial system, which causes inefficiency in financial markets. Studies have also given credence to the notion that limited financial knowledge and lack of experience are instrumental factors in the formation of financial market imbalances (Emmons and Noeth, 2013; Cason and Samek, 2014).

Thus, these three perspectives on macroeconomic stabilisation policies have been the locus of recent literature, most notably in the aftermath of the 2008 Financial Crisis. Each perspective advocates different policy responses to financial market disequilibria. Suffice to say, policymakers can use an amalgam of these perspectives as each has its own merit. Nevertheless, these perspectives articulate the significance of implementing a mixture of macroeconomic stabilisation policies and macroprudential regulation to effectively redress financial market disequilibria.  Based on this analysis, we set out our first four hypotheses (in their alternative form) as follows:

H1: Government spending does not significantly mitigate imbalances in financial markets.

H2: Government spending effectively stimulates GDP, consumption and investment and reduces market interest rates.

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[10] This was primarily due to the fact that a common facet of the mandate of monetary authorities is to ensure price stability, which was thought to facilitate financial stability (Bernanke *et al*., 1999).

H3: Liquidity provision does not significantly resolve financial market disequilibria.

H4: Lowering central bank interest rates promotes stability in financial markets during periods of disequilibrium.

*2.1 The Influence of the Political Landscape*

A predominant strand of literature on the political economy is the determinants of the political landscape. Studies such as Rausser *et al* (2011) have postulated that the inherent economic interests and subjective preferences of different political orientations have a direct bearing on whether governments are proactive, neutral, or reactive in trying to mitigate financial market imbalances. As such, political orientations may influence the policy frameworks of governments during financial market disequilibria.

Many studies have analysed the influence of political orientations on the implementation of macroeconomic policies (Song, 2010; Crawford, 2012 and Samuels and Shugart, 2011). Song (2010) suggests that left-wing governments are proactive in resolving financial market disequilibria while right-wing governments are more reactive. Centrist governments evaluate the trade-off between ignoring financial market and responding to financial market imbalances. However, the preferences of various political orientations are not necessarily absolute, as Samuels and Shugart (2011) argued that financial market instability or economic recessions might cause policy convergence.

Another field of inquiry is the evaluation of the effects of market failures on the political landscape (Perez and Westrup, 2008). For example, Hayford and Malliaris (2008) posited

that the political landscape sets constraints for macroeconomic stabilisation policies.[11] Acemoglu and Robinson (2013) offer contrasting insights in their analysis of economic policy advice, arguing that the policymaking process often excludes politics because of the exclusive focus of policymakers on resolving financial market disequilibria. Nevertheless, these studies accentuated the relationship amongst financial market disequilibria, the political landscape, and macroeconomic stabilisation policies.

Thus, literature on the influence of the political landscape on macroeconomic policies surpasses the rudimentary contention that the political landscape is significant. Key fields of inquiry include the determinants of the political landscape, the influence of political orientations on the implementation of macroeconomic policies and the effects of market failure on the political landscape. The political landscape is a pivotal factor in designing policy frameworks to mitigate financial market disequilibria. Hence, we develop our next three hypothesis:

H5: Left-wing governments are more proactive than right-wing governments in redressing financial market disequilibria.

H6: Centrist governments have an inclination to implement macroeconomic policies in order to resolve imbalances in financial markets.

H7: Financial market disequilibria cause policy convergence across political ideologies.

*2.2 The Influence of Global Financial Integration*

There is a growing consensus in recent literature that global financial integration significantly influences the macroeconomic policy framework chosen to mitigate imbalances in financial

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[11] Perez and Westrup (2008) argued that elected governments have an inclination to implement macroeconomic stabilisation policies and macroprudential regulation that limit their exposure or political costs rather than policy frameworks that are more optimal. Based on this premise, Hayford and Malliaris (2008) suggested that it is unlikely that monetary authorities will be able to increase interest rates only to prevent financial market dislocations.

markets (Thurston and Bowen, 2011). Prasad *et al*. (2003) alluded to the fact that global financial integration has a significant impact on macroeconomic policies. Other studies (Kose, *et al*., 2006; Vo and Daly, 2007) have contended that the effects of financial global integration on the macroeconomic policy framework of countries depends on the level of domestic financial market development, the quality of corporate governance, macroeconomic policy regimes and the degree of trade liberalisation. The central idea of these studies is that global financial integration influences the implementation of macroeconomic policies. For example, Correa and Girón (2013) argued that the degree of global financial integration determines the effect of foreign macroeconomic policies on capital flows, and domestic dependence on these capital flows influences the severity of macroeconomic policies. In addition, Pierre (2015) argued that global financial integration is a primary driver of market deregulation, redefining the ultimate objectives and tools of macroeconomic policies.

Another strand of literature focuses on the measures to control global financial integration. At the locus of this strand of literature is the notion that globalisation, in general, restricts the autonomy of countries relative to their macroeconomic policy framework and increases vulnerability to global financial risks (Rodrik, 2012; Fratzscher, 2012; Goldberg, 2013). For example, Ahmed and van Hulten (2014) and Obstfeld (2015) posited that macroeconomic policies such as flexible exchange rates could be used to control global financial integration. These studies contributed to the literature by elucidating various measures to reduce the effects of global financial integration and provide insulation from potential financial and monetary shocks.

In summary, global financial integration, like the political landscape, is instrumental in the implementation of macroeconomic stabilisation policies. As such, policymakers should

consider the degree of global financial integration when formulating macroeconomic policies aimed at resolving financial market disequilibria. On this basis, we develop our final four hypothesis:

H8: Global financial integration does not significantly influence government spending during periods of financial market disequilibria.

H9: Global financial integration leads governments to implement liquidity provision as a financial market stabilisation tool.

H10: The adjustment of central bank interest rates is significantly influenced by global financial integration.

H11: Global financial integration causes policy harmonisation across countries during periods of financial market disequilibria.

It is clear that recent literature has not sufficiently explicated the strategic use of macroeconomic policies to remedy financial market disequilibria (Blanchard, *et al*., 2012). Until recently, fiscal policies were regarded as secondary within the macroeconomic policy framework to stabilise imbalances within the financial market, primarily due to the time needed to formulate appropriate policies and the lags involved with their implementation (Feenstra and Taylor, 2014). Further analyses could expound on whether or not government expenditure dovetails with monetary policies as a stabilisation policy (Bachmann and Sims, 2012). Relative to monetary policies, there is insufficient research regarding the efficacy of liquidity provision and adjustments of central bank interest rates in resolving financial market disequilibria, specifically across a wide variety of countries which have different monetary policy capacities (Woodford, 2012).

Furthermore, examinations of the political landscape have not adequately delineated its influence on the policymaking process during periods of financial market disequilibria (Bjornskov and Potrafke, 2011). There is ambiguity regarding the policy tools which left-wing, centrist and right-wing governments are inclined to implement in order to resolve imbalances in financial markets (Woodford, 2012; Hutchison, 2013). Moreover, the notion of policy convergence across political orientations during periods of financial market disequilibria needs further empirical support (Hutchison, 2013). In addition, key studies on global financial integration typically examine the United States, the European Union (EU) or the Association of Southeast Asian Nations (ASEAN). The current study will add to the existing strand of literature by conducting further empirical work concerning the influence of the political landscape and global integration on the policymaking process. Furthermore, this study will add to existing literature on global financial integration by considering countries that are not necessarily members of formal or informal blocs or alliances. Thus, this study will investigate policy framework for resolving financial market disequilibria taking account of the influence of the political landscape and global financial integration.

## 3. Data and Method

This study analyses developed and developing countries with strong financial markets, where governments are likely to implement macroeconomic policies to facilitate financial market stability. Based on a report published by the World Economic Forum (2012), the following twenty-one countries were selected: the United Kingdom, Australia, the United States, Singapore, Hong Kong, Canada, Switzerland, Japan, Norway, Malaysia, South Korea, China, South Africa, Brazil, Taiwan, Germany, France, Sweden, Austria, Netherlands and Poland.

Data is collected from various sources[12] and Datastream. The analyses on these countries were conducted over the period from 1994 to 2015. This period is chosen because it avoids significant structural breaks in the data resulting from the formal establishment of the EU in November 1993, as a few of the selected countries are members of the EU. In addition, this period captures key financial market imbalances, such as the 1997 Asian Financial Crisis, the Dotcom Bubble and the 2008 Financial Crisis. The study uses quarterly data since macroeconomic policies are implemented quarterly or annually. Furthermore, quarterly data avoids any under-parametisation problems that may result from using annual data for the period of this analysis.

*3.1 Identifying Financial Market Imbalances*

In order to identify financial market disequilibria, credit spreads will be used as a proxy based on the propositions of Jones (2014) and Krishnamurthy and Muir (2015) as they capture the general equilibrium of multiple financial markets. Although credit spreads reflect the general equilibrium of financial markets, other proxies are also identified in literature. More specifically, three primary proxies for identifying financial market imbalances have emerged through existing literature, namely credit spreads, sovereign bond yield spreads and government debt-to-GDP ratios. Credit spreads refer to the difference between the yields of sovereign bonds and non-sovereign bonds with the same maturity (Sun and Yan, 2012). Fluctuations in credit spreads represent changes in the supply of funds provided by financial intermediaries and reflect the general equilibrium of financial markets and economies (Gilchrist and Zakrajšek, 2012).[13] However, fluctuations in credit spreads can also be

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[12] Sources include Oxford Economics, the Office of National Statistics, the Bureau of Economic Analysis, the OECD, Election Resources, Thomson Reuters, the International Monetary Fund (IMF), the European Central Bank (ECB) and the central banks or monetary authorities of each country.
[13] A spike in credit spreads indicate that financial intermediaries have inadequate capital and reduce their supply of credit as a result, which increases the cost of debt financing and widens credit spreads (Gilchrist and Zakrajšek, 2012).

attributed to an amalgam of liquidity premiums, the tax treatment of corporate bonds and default risks, which limits the effectiveness of credit spreads as a proxy for financial market disequilibria (Sun and Yan, 2012).

Sovereign bond yield spreads are the differences between the yields of sovereign bonds in different countries with varying credit ratings. High sovereign bond yield spreads reflect high default risks, low bond market liquidity and changing risk preferences due to financial market and economic uncertainty (Afonso, et al., 2012). The main limitation of sovereign bond yield spreads is that they do not significantly reflect conditions prior to financial market imbalances (Afonso, et al., 2012).

The debt-to-GDP ratio is the ratio between sovereign debt and GDP, and it is a common indicator for default risk. High debt-to-GDP ratios usually suggest that the growth rate of debt exceeds the growth rate of GDP, which may induce a recession caused by fiscal unsustainability. However, high debt-to-GDP ratios do not necessarily indicate financial market imbalances (Ostry, et al., 2010).

Based on observations of robust methodology in existing literature, the current study uses credit spreads as a proxy for financial market disequilibria. Credit spreads indicate the severity of financial market disequilibria and economic recessions, and the relationship between credit spreads and economic variables holds over varying financial and economic conditions (Krishnamurthy and Muir, 2015). Details about the changes in credit spreads for each of the 21 sample countries is presented in Appendix 1.

To ensure that credit spreads are an appropriate proxy for imbalances in financial markets, a VAR Analysis was conducted to examine the short-term relationship between credit spreads and the returns of key financial markets: stock, bond, foreign exchange and oil markets (in line with Gilchrist and Zakrajšek, 2012). Furthermore, two lag lengths will be used based on the suggestions of Jones (2014). A condition for this study is that there must be a relationship between credit spreads and the returns of at least one key market for each country in order for credit spreads to be used as a proxy. For each of the selected countries, the results of the VARs indicated that there is a statistically significant short-term relationship between changes in credit spreads and the returns of at least one key financial market. Based on the VAR Analysis, it can be concluded that credit spreads primarily reflect equilibrium in bond, foreign exchange and oil markets.[14]

*3.2 Evaluating Macroeconomic Policies*

Based on the postulations of Makin (2013)[15], the efficacy of government spending in resolving financial market disequilibria and stimulating the economy will be evaluated by using a VAR Analysis and a Linear Regression Analysis. The models will examine the short-term and underlying impact of government spending on credit spreads, market interest rates, GDP, consumption and investment. In line with Makin (2013), this study will consider two lag lengths in the VAR Analysis. Following equations will be used:

$$\Delta CS = \beta_0 + \beta_1 GS + \varepsilon$$

$$MIR = \beta_0 + \beta_1 GS + \varepsilon$$

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[14] These results are consistent with the propositions of Jones (2014). The results of the VAR Analysis are available upon request.

[15] Makin (2013) investigated the macroeconomic policy effectiveness of increased government spending within a two-sector open economy framework based on two distinct classes of goods and services – tradables and non-tradables. The results suggest that increased government spending on both tradables and non-tradables is ineffective (or ambiguous) in influencing national output or employment. Consistent with the methodological approach of Makin (2013), the current study employs VAR analysis.

$$GDP = \beta_0 + \beta_1 GS + \varepsilon$$

$$C = \beta_0 + \beta_1 GS + \varepsilon$$

$$I = \beta_0 + \beta_1 GS + \varepsilon$$

$$(1)$$

Where $\Delta CS$ is the change in credit spreads; $MIR$ is the market interest rate; $GDP$ is the Gross Domestic Product; $C$ is consumption; $I$ is investment; $GS$ is government spending; and $\varepsilon$ is the error term.

Furthermore, in line with Cenesizoglu and Essid (2012), both a VAR Analysis and a Linear Regression Analysis will be conducted to evaluate the effects of liquidity provision on credit spreads and the efficacy of central bank interest rates in mitigating financial market disequilibria. Additionally, Cenesizoglu and Essid (2012) posited that changes to credit spreads might be due to the lack of control variables. Hence, both uncontrolled and controlled Linear Regression Analyses will be conducted. The equations being tested are as follows:

$$\Delta CS = \beta_0 + \beta_1 LP + \varepsilon$$

$$\Delta CS = \beta_0 + \beta_1 LP + \beta_2 \Delta r_{10} + \beta_3 (\Delta r_{10})^2 + \beta_4 \Delta(r_{10} - r_2) + \beta_5 SM + \varepsilon$$

$$\Delta CS = \beta_0 + \beta_1 CBIR + \varepsilon$$

$$\Delta CS = \beta_0 + \beta_1 CBIR + \beta_2 \Delta r_{10} + \beta_3 (\Delta r_{10})^2 + \beta_4 \Delta(r_{10} - r_2) + \beta_5 SM + \varepsilon$$

$$(2)$$

Where $\Delta CS$ is the change in credit spreads; $\beta_0$ is the constant or intercept term; $\beta_1, \beta_2, \beta_3, \beta_4$ and $\beta_5$ are the coefficients; $LP$ is liquidity provision; $CBIR$ is central bank interest rates; $r_{10}$ is the yield on ten-year sovereign bonds; $r_2$ is the yield on two-year sovereign bonds; $SM$ is the returns on the leading stock market in each country; $\varepsilon$ is the error term.

*3.3 Investigating the Influence of the Political Landscape*

In order to evaluate the influence of the political landscape on macroeconomic policy frameworks designed to regress financial market imbalances, a Country-by-Country Analysis, One-Way ANOVA Test, Correlation Analysis and a Logit Regression Analysis will be employed, following the propositions of Sundquist (2011). First, a Country-by-Country Analysis will be used to identify the political orientations of each of the selected countries and they will be classified as left-wing, centrist or right-wing. Then, as suggested by Sundquist (2011), a One-Way Anova Test will be conducted to determine if governments with the same political orientations across the selected countries implemented similar macroeconomic policies during periods of financial market disequilibria. A One-Way Anova Test will also be used to evaluate the notion of policy convergence, which is in line with Samuels and Shugart (2011). A Correlation Analysis will be conducted to observe the correlation between political orientations and macroeconomic policies for each of the selected countries. Finally, a Logit Regression Analyses will be conducted to elucidate the macroeconomic policies chosen by governments with various political orientations to redress financial market imbalances, which is in line with Song (2010). The dependent dummy variables represent macroeconomic policies implemented during periods of financial market disequilibria. In order to create the dependent dummy variables, changes in credit spreads that are above or equal to 0.01 will be assigned the value of 1 and all others will be assigned the value of 0, as suggested by Jones (2014). This index will then be multiplied by government spending, liquidity provision and central bank interest rates. As for the independent dummy variables, 1 will denote that the government in office follows the

political orientation being analysed and 0 will denote that the government does not[16]. The dependent variable calculation and regression models are as follows:

$$DV = MP \times \Delta CS_{x \geq 0.01}$$

$$GS_{FMD} = \beta_0 + \beta_1 PO + \varepsilon$$

$$LP_{FMD} = \beta_0 + \beta_1 PO + \varepsilon$$

$$CBIR_{FMD} = \beta_0 + \beta_1 PO + \varepsilon$$

(3)

Where $DV$ is the dummy variables created for government spending, liquidity provision and central bank interest rates, respectively; $MP$ is macroeconomic policies (government spending, liquidity provision and central bank interest rates); $\Delta CS_{x \geq 0.01}$ is changes in credit spreads that are above or equal to 0.01; $\beta_0$ is the constant or intercept term; $GS_{FMD}$ is government spending during financial market disequilibria; $LP_{FMD}$ is liquidity provision during financial market disequilibria; $CBIR_{FMD}$ is central bank interest rates during financial market disequilibria; $\beta_1$ is the coefficient; $PO$ is the dummy variables for the political orientations of governments, representing left-wing, centre and right-wing; $\varepsilon$ is the error term.

*3.4 Examining the Impact of Global Financial Integration*

In order to evaluate the influence of global financial integration on the macroeconomic policies chosen to mitigate financial market imbalances, this study will employ the Covered Interest Rate Parity as a proxy, a Logit Regression Analysis and a One-Way ANOVA Test, based on the propositions of Auerbach and Gorodnichenko (2013) and Cheung and de Haan (2013). The dependent dummy variables will be the same index used in 3.3. Regarding the Independent dummy variables for the Logit Regression, 0 will denote significant violations of

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[16] Political orientations were obtained from the Election Resources database and then were confirmed with government reports from the selected countries.

the Covered Interest Rate Parity and 1 will denote minor or non-existent violations.[17] Moreover, the United States Dollar (USD) will be used as the base currency since many countries use the USD as a conventional home currency or peg (Krishnakumar, 2015). A One-Way ANOVA Test will then be used to evaluate the notion of policy harmonisation across countries during periods of financial market imbalances. The Covered Interest Rate Parity condition and the regression models are as follows:

$$FR_{\frac{A}{B},t} = SR_{\frac{A}{B},t} \left( \frac{1 + r_{A,t}}{1 + r_{B,t}} \right)$$

$$GS_{FMD} = \beta_0 + \beta_1 GFI + \varepsilon$$

$$LP_{FMD} = \beta_0 + \beta_1 GFI + \varepsilon$$

$$CBIR_{FMD} = \beta_0 + \beta_1 GFI + \varepsilon$$

(4)

Where $FR_{\frac{A}{B},t}$ is the forward exchange rate of currency A and currency B; $SR_{\frac{A}{B},t}$ is the spot exchange rate of currency A and currency B; $r_{A,t}$ is the interest rate for borrowing in currency A; $r_{B,t}$ is the interest rate for borrowing in currency B; $\beta_0$ is the constant or intercept term; $GS_{FMD}$ is government spending during financial market disequilibria; $LP_{FMD}$ is liquidity provision during financial market disequilibria; $CBIR_{FMD}$ is central bank interest rates during financial market disequilibria; $\beta_1$ is the coefficient; $GFI$ is the dummy variables for global financial integration and $\varepsilon$ is the error term.

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[17] Since violations in the Covered Interest Rate Parity occur frequently when quarterly data is used, Jones (2014) suggested that violations above or equal to 0.01 should be viewed as low global financial integration and all other minor or non-existent violations represent high global financial integration.

## 4. Results and Discussion

*4.1 Descriptive Statistics*

Table 1 reports the descriptive statistics to provide a general review of the data used in this study for the 21 selected countries, namely changes in the following macroeconomic variables: government spending, liquidity provision and interest rates.

A visual inspection of Table 1 reveals that all of the selected countries have positive and negative changes in government spending, liquidity provision and interest rates. The average change in government spending was positive for all of the selected countries except for Netherlands and Poland.[18] Sweden had the highest average change in government spending of 36%, and all other countries with the exception of Netherlands and Poland had changes in government spending ranging from 0.3% to 9.5%. Sweden also has the highest standard deviation, which indicates instances of significant changes in government spending away from the mean.

Canada was observed to have the only negative average change in liquidity provision and also reported the highest standard deviation.[19] On the other hand, Taiwan has the highest average change in liquidity provision as well as the highest standard deviation.[20]

With regards to interest rates, 18 countries reported a negative average changes in interest rates. This indicates that most of the selected countries have responded to macroeconomic disequilibria by lowering interest rates. Only Norway, Singapore and Switzerland have average changes in interest rates close to 0%, which indicates that interest rates have been

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[18] Brady and Lee (2014) postulated that government spending declined from 1971 to 2008 in many countries such as Netherlands and Poland due to depleted government resources and parliamentary votes against significant expansionary policies.

[19] A negative average change in liquidity provision may indicate that liquidity provision has been constant for a significant amount of time, with any changes being reductions in liquidity provision.

[20] This reflects quantitative easing in Taiwan, which regards the creation of money by central banks in order to provide liquidity to financial intermediaries (Kang, 2015).

relatively constant over time. Norway also has highest standard deviation relative to changes in interest rates.

**[Insert Table 1 about here]**

*4.2 The Effectiveness of Fiscal and Monetary Policies in Resolving Financial Market Disequilibria*

The first aim of this study evaluates the efficacy of macroeconomic policies implemented to resolve financial market disequilibria by examining the impact of government spending, liquidity provision, and interest rate policies on credit spreads.

In evaluating the effectiveness of government spending in reducing credit spreads over time, the results of the Linear Regression Analysis indicate that government spending does not impact credit spreads for any of the selected countries at a significance level 5% level. As for the short-term relationship between credit spreads and government spending, changes in government spending significantly influenced changes in credit spreads for only 3 of the selected countries, namely Canada, Norway and Poland as seen in Table 2. For Canada, the second lag of changes in government spending influenced changes in credit spreads with a coefficient of -34.04[21]. Similarly, for Norway, the first lag of changes in government spending influenced changes in credit spreads with a coefficient of -10.05. Finally, the second lag of changes in government spending in Poland influenced changes in credit spreads with a coefficient of 0.33. Since only 3 of the selected countries indicate a significant relationship between government spending and credit spreads, hypothesis 1 cannot be rejected. As such,

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[21] In other words, a one-unit increase in government spending reduces changes in credit spreads by 34.04 in Canada.

these results strongly support hypothesis 1. These results suggest that governments should not implement government spending as a tool to facilitate stability in financial markets.

A central contention of theoretical analyses of fiscal policies is that prudent government spending which does not exacerbate public debt serves to mitigate uncertainty in the economy, which helps reduce risk premia and credit spreads (Hairault, *et al*., 2012). However, one particular limitation of government spending is the inherent lag in its implementation (Kobayashi, 2013). Designing government spending policies takes considerable time, which limits its effect on consumer confidence. Furthermore, the government budget constraint can also retard the responsiveness and efficacy of government spending (Alesina and Ardagna, 2009).

**[Insert Table 2 and 3 about here]**

Furthermore, the results of the linear regression analyses indicate that changes in government spending influence interest rates, GDP, consumption and investment for some of the selected countries. In the market interest rates analysis, changes in government spending only influenced changes in interest rates for Malaysia, as seen in Table 3. Although these results indicate that an increase government spending reduces market interest rates, the R-squared value of this model is quite low, suggesting that numerous other factors contribute to the reduction in interest rates[22]. Hence, in Malaysia, government expenditure is a viable macroeconomic policy in stimulating the economy by reducing market interest rates, which facilitates borrowing. Only 4 of the selected countries: Malaysia, China, South Africa and France, demonstrated that government spending impacts GDP. An increase in government

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[22] With a coefficient of -0.040, a one-unit increase in government spending reduces changes in market interest rates by 0.040. However, the R-squared value indicates that only 15.4% of the variance of the regression model is explained by government spending.

spending causes an increase in GDP in Malaysia, China and South Africa, while an increase in government spending reduced GDP in France.[23] However, only Malaysia and China have reliable regression results based on the R-squared measure. As such, though government spending may stimulate GDP in Malaysia and China, this policy may not be effective in the other selected countries.

The regression analysis of the impact of changes in government spending on changes in consumption had statistically significant results for the United Kingdom, Australia, Hong Kong, France and Austria, as shown in Table 3. Of these countries, only Australia indicated a positive relationship between government expenditure and consumption. In contrast, government spending reduces consumption in the United Kingdom, Hong Kong, France and Austria.[24] However, the R-squared values are relatively low for this regression model.

Regarding investment, 6 of the selected countries, namely the United States, Malaysia, South Korea, China, Brazil, and France, demonstrated a statistically significant relationship between government spending and investment, as seen in Table 3. All of these countries expect for the United States and France, demonstrated a positive relationship between government spending and investment.[25] However, only the regression models of China and Brazil are sufficiently

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[23] A 1-unit increase in government expenditure causes changes in GDP to increase in Malaysia, China and South Africa by 0.083, 0.248 and 0.156, respectively. In contrast, the regression model for France indicates that a 1-unit increase in government spending reduces GDP changes by 0.292. This reflects the 'crowding out' effect and Furceri and Sousa (2011) found similar results.

[24] A 1-unit increase in government expenditure reduces consumption in the United Kingdom, Hong, France and Austria by 0.197, 0.169, 0.268 and 4.199, respectively. Beyond the 'crowding out' effect, one explanation for these results is that additional government spending may be financed by an increase in taxes, which reduces disposable income and subsequently reduces consumption.

[25] A 1-unit increase in government spending increases changes in investment in Malaysia, South Korea, China and Brazil by 0.078, 0.6673, 0.217 and 0.779, respectively. In contrast, a 1-unit increase in government spending reduces changes in investment in the United States and France by 0.591 and 0.810, respectively. Hence, the United States and France demonstrate that government expenditure may not necessarily foster investor confidence.

reliable, which suggests that government spending is an effective macroeconomic policy for stimulating investment in China and Brazil.

In summary, government spending only has a statistically significant relationship with interest rates, GDP, consumption and investment for a small number of the selected countries, providing only limited support for hypothesis 2. Other studies such as Auerbach and Gorodnichenko (2013) reached similar conclusions regarding the influence of government spending on market interest rates and private investment, while some studies such as Backmann and Sims (2012) found that government spending increases GDP and consumption. The effect of government spending on these variables ultimately depends on how markets react to a shock in government spending. Hence, though there is a relationship between financial markets and the larger economy, there may not necessarily be transitivity amongst government spending, the economy, and financial markets, which limits the efficacy of fiscal policies as a stabilisation tool for financial markets.

In evaluating the effect of liquidity provision on credit spreads, both uncontrolled and controlled regressions were conducted, which allows the real effects of liquidity provision to be elucidated by accounting for other exogenous variables that may impact credit spreads (Cenesizoglu and Essid, 2012). VARs were then conducted to analyse the short-term impact of liquidity provision on credit spreads.

The results suggest that, for the uncontrolled regression, only Canada demonstrated a significant relationship between liquidity provision and credit spreads, with an increase in liquidity provision reducing credit spreads as seen in Table 4. Regarding the controlled regression, only Switzerland and Poland provide evidence to support the notion that liquidity

provision has an impact on changes in credit spreads. For Switzerland, an increase in liquidity provision reduces changes in credit spreads; whereas, a reduction in liquidity provision reduces changes in credit spreads in Poland. Nevertheless, the adjusted R-squared in Table 4 is low for both of these regression models, which suggests that the results may not be sufficiently reliable.

**[Insert Table 4 about here]**

Regarding the short-term impact of changes in liquidity provision on changes in credit spreads, only China and Austria had statistically significant results. For China, the results suggested a positive relationship between the first lag of changes in liquidity provision and changes in credit spreads (a coefficient of 0.441 and a standard error of 0.216). Similarly, the regression results for Austria indicates that liquidity provision has a positive impact on credit spreads (a coefficient of 9.778 and a standard error of 4.048). These results suggest that liquidity provision may not be a suitable macroeconomic stabilising policy in the short-run as it may have destabilising effects[26].

In summary, the effects of liquidity provision on credit spreads were only statistically significant for 5 countries. Furthermore, these results indicate that liquidity provision may have destabilising effects and governments should reduce liquidity provision in order to resolve financial market disequilibria. Therefore, these results support hypothesis 3. This is consistent with Mishkin (2011) who argued that liquidity provision might actually increase systemic risk by encouraging excessive leveraging in the financial system, which is detrimental during periods of financial disequilibria. Fragmentation in the financial system also explains the ineffectiveness of liquidity provision in that financial intermediaries may be

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[26] This result is not presented in the Tables.

hesitant to lend or participant in the interbank market when financial market disequilibria place pressure on their liquidity ratios (Taylor and Williams, 2009).

Similar to the analysis on the efficacy of liquidity provision, the analysis on the impact of central bank interest rates on credit spreads employed both uncontrolled and controlled regressions. In addition, VARs were then conducted to analyse the short-term impact of liquidity provision on credit spreads.

**[Insert Table 5 about here]**

Table 5 presents the statistically significant results of the uncontrolled and controlled regression analysis of the impact of changes in central bank interest rates on changes in credit spreads. In the uncontrolled regression, seven of the selected countries, namely Australia, Singapore, Hong Kong, Canada, South Korea, South Africa and Germany, show strong evidence to suggest that changes in central bank interest rates have a positive impact on changes in credit spreads. Hence, a reduction in central bank interest rates reduces changes in credit spreads. In contrast, the United States and Taiwan indicate that an increase in changes in central bank interest rates reduces credit spreads. However, the only sufficiently reliable regression model is that of the United States based on the R-square. Regarding the controlled regression, seven of the selected countries show evidence to support the notion that central bank interest rates have a significant influence on credit spreads. The impact of central bank interest rates on credit spreads is positive for the majority of the sample countries, with South Africa having the highest change in credit spreads resulting from the adjustment of central bank interest rates.

As for the short-term impact of central bank interest rates, Norway, China and South Africa show strong evidence to support the notion that changes in central bank interest rates impact changes in credit spreads (coefficients of 0.345, 0.423, 0.427 and a standard error of 2.24, 2.20, 3.66, respectively)[27]. These results indicate a positive relationship between central bank interest rates and credit spreads. In summary, these results indicate that central bank interest rates should be reduced in order to decrease credit spreads and, ultimately, resolve financial market disequilibria. Essentially, a reduction in central bank interest rates facilitates lending operations and reduces volatility within financial markets (Censesizoglu and Essid, 2012). Though some of these regression models may not be sufficiently reliable, thirteen different countries indicate a significant relationship between central bank interest rates and credit spreads. Therefore, these results support hypothesis 4. These results are consistent with Woodford (2012) who suggested that increasing interest rates before imbalances materialise in financial markets significantly impedes excessive leveraging; and, lowering interest rates during periods of financial market disequilibria can mitigate funding inadequacies in the financial system. However, Gali (2013) found that proactive interest rate policies could exacerbate imbalances in financial markets by increasing volatility. Hence, reactive interest rate policies may be more optimal. Overall, the findings in this section provide strong support for hypotheses 1, 3, and 4 but limited support for hypothesis 2.[28]

*4.2 The Impact of Political Ideologies*

This subsection provides findings for the second aim of this study which was to elucidate the impact of the political orientation of government in office on the fiscal and monetary policies chosen to resolve financial market disequilibria.

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[27] These results are not presented in the Tables.
[28] Details of individual country results are available upon request.

In elucidating the influence of left-wing and right-wing governments on the policymaking process, a One-Way ANOVA Test, a Logit Regression Analysis and a Correlation Analysis were employed as suggested in Section 3. Due to redundancies in the dummy variables, Singapore, Norway, Malaysia, China and Sweden were not included in the Logit Regression Analysis and Correlation Analysis.

**[Insert Table 6 about here]**

Table 6 shows the statistically significant results of the One-Way ANOVA Test regarding macroeconomic policies implemented by governments based on their political orientation during periods of financial market disequilibria.  Regarding left-wing governments, there was no significant difference between countries in terms of the average change in government spending and liquidity provision administered when there were imbalances in financial markets. Furthermore, right-wing governments of the selected countries implemented similar changes in government spending during periods of disequilibria in financial markets.  The results may allude to the inherent macroeconomic policy preferences of left-wing and right-wing governments but may also suggest similarities in the government budget and central bank constraints.

**[Insert Table 7 about here]**

Table 7 shows the Logit Regression and Correlation results of countries that demonstrated a statistically significant relationship between political orientations and macroeconomic policies implemented during periods of financial market disequilibria. During disequilibria in financial markets, the United States and Brazil demonstrate that left-wing governments reduce government spending; whereas, right-wing governments increase government

spending.[29] Regarding liquidity provision, the United Kingdom, Australia and Poland indicate that left-wing governments increase liquidity provision, while right-wing governments decrease liquidity provision.[30] In contrast, Brazil and Taiwan indicate that left-wing governments reduce liquidity provision and right-wing governments increase liquidity provision. As for interest rates, only France provides evidence to support the notion that left-wing governments reduce interest rates and right-wing governments increase interest rates.[31] Indeed, these models may not be sufficiently reliable because the R-squared values are relatively low.

In summary, with regard to the selected countries, although left-wing governments implemented similar changes in government spending and liquidity provision and right-wing governments also administered similar changes in government spending, there is insufficient evidence to support the notion that left-wing governments have an inclination to choose proactive macroeconomic policies and right-wing governments have a tendency to choose reactive macroeconomic policies. Therefore, the results suggest that there is limited support for hypothesis 5. In contrast, Song (2010) found strong evidence supporting the notion that right-wing governments are more inclined to implement policies that are reactive in nature. The underlying premise is that right-wing governments tend to facilitate market solutions rather than intervene (Woodford, 2012). However, this view is not only held by right-wing

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[29] An increase in government spending is proactive in nature because it directly stimulates consumption and investment and it fosters confidence during financial market disequilibria and recessions (Bachmann and Sims, 2012; Auerback and Gorodnichenko, 2013). Whereas, a reduction in government spending is a reactive macroeconomic policy as it inadvertently stimulates consumption and investment by improving the government budget balance, which reduces expectations of future increases in tax and interest rates (Cwik and Wieland, 2011; Ramey, 2012).

[30] An increase in liquidity provision is a proactive macroeconomic policy because it improves funding shortfalls in the financial system, facilitates lending, reduces credit risk and causes a contraction in credit spreads (Krishnamurthy and Vissing-Jorgensen, 2011).

[31] A reduction in central bank interest rates is a proactive macroeconomic policy because it facilitates lending activities by lowering the cost of borrowing, which reduces volatility in financial markets (Cenesizoglu and Essid, 2012). On the other hand, an increase in central bank interest rates indirectly improves financial market conditions by increasing sovereign bond yields and subsequently reducing credit spreads (Gilchrist and Zakrajšek, 2011).

governments but also proponents of classical and neoclassical economic theories which suggest that internal mechanisms such as the price system and wages ultimately facilitate equilibrium in economies so government intervention should be limited (Aspromourgos, 2012). As such, left-wing and centrist governments may also hold this perspective.

In evaluating the influence of centrist governments on the policymaking process, a One-Way ANOVA Test, a Logit Regression Analysis and a Correlation Analysis were used. Regarding the selected countries, only Japan, Netherlands and Poland had radical centrist governments at any point within the study period. The results in Table 6 indicate that centrist governments in Japan, Netherlands and Poland implemented similar changes in government spending and central bank interest rates. These results suggest that centre governments may inherently prefer government spending and central bank interest rates as macroeconomic policies to redress financial market imbalances, but numerous other factors such as automatic fiscal stabilisers[32] can cause similarities in macroeconomic policies.

Regarding the influence of centrist governments on the choice of macroeconomic policies implemented to resolve financial market disequilibria, only Netherlands provided evidence that there is a significant relationship between centrist governments and macroeconomic policies; specifically that centrist governments have an inclination to increase liquidity provision in order to mitigate imbalances in financial markets. However, based on its R-squared value (6.6%) the result was deemed not reliable[33].

In summary, though the centrist governments of Japan, Netherlands and Poland implemented similar changes in government expenditure and central bank interest rates, there is inadequate

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[32] Automatic stabilisers are policies that automatically adjust to economic conditions (Veld, *et al*., 2012).
[33] This result is not presented in the Tables.

evidence to ascertain whether or not centre governments are inherently responsive to financial market disequilibria. Therefore, there is limited support for hypothesis 6. Moreover, radical centrism is uncommon, with only three of the twenty-one selected countries having radical centre governments between 1993 and 2015.

The notion of policy convergence across political orientations was evaluated by employing a One-Way Anova Test between left-wing, centrist and right-wing governments relative to macroeconomic policies implemented during periods of financial market disequilibria.

**[Insert Table 8 about here]**

Table 8 shows that results of the One-Way Anova Test used to determine whether or not there were similarities in the macroeconomic policies implemented by left-wing, centrist and right-wing governments when there were imbalances in financial markets. These results provide strong support for the notion of policy convergence during financial market disequilibria, as there were no significant differences in changes in government spending, liquidity provision and interest rates across the selected countries. Hence, governments implemented similar macroeconomic policies irrespective of political orientations. Therefore, there is strong support for hypothesis 7. These results are consistent with Samuels and Shugart (2011) and Acemoglu and Robinson (2013) who found that governments with different political orientations tend to implement similar policies when trying to mitigate financial market disequilibria. As such, macroeconomic policy paradigms for resolving financial market disequilibria are not necessarily determined by political orientations

(Crawford, 2012). Overall, the results in this section provide strong support for hypotheses 7 and limited support for hypotheses 5 and 6.[34]

*4.3 The Influence of Global Financial Integration*

This subsection provides findings for the third aim of this study, which regards the influence of global financial integration on the macroeconomic policies chosen to redress financial market imbalances.

The influence of global financial integration on government spending during financial market imbalances was evaluated by conducting a Logit Regression Analysis. Since the dummy variables of Hong Kong and China were redundant, these countries were not included in this analysis. For this analysis, none of the 21 selected countries demonstrated that there is a significant relationship between global financial integration and government spending. This suggests that governments do not increase or decrease government spending when there is a high degree of global financial integration. Therefore, the results suggest that there is strong support for hypothesis 8[35]. However, Auerbach and Gorodnichenko (2013) found that global financial integration usually causes governments to increase expenditure when there are imbalances in financial markets or economic recessions. The underlying premise is that governments try to supplement beneficial fiscal policy spillovers from countries resulting from a high degree of global financial integration (Auerbach and Gorodnichenko, 2013). For instance, expansionary fiscal policies in one country may increase foreign investment in another country if there is a high degree of global financial integration with negligible or limited capital controls. Indeed, disparities between this study and that of Auerbach and

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[34] A table indicating the political ideologies of the selected countries and all results of the various analyses are available upon request from the authors.

[35] This result is not presented in the paper.

Gorodnichenko (2013) are primarily due to their exclusion of countries with? erratic government spending.

The influence of global financial integration on liquidity provision during financial market disequilibria was also examined by employing a Logit Regression Analysis, with Hong Kong and China not included in this analysis.

**[Insert Table 9 about here]**

The results of the Logit Regression in Table 9 regarding the relationship between global financial integration and liquidity provision suggest that only the United Kingdom, the United States, South Korea and Taiwan showed strong evidence to support the notion that global financial integration influences liquidity provision. Both the United Kingdom and Taiwan indicate that governments tend to increase liquidity provision when there is a high degree of global financial integration in order to resolve financial market disequilibria.[36] In contrast, the United States and South Korea demonstrate that global financial integration leads governments to reduce liquidity provision during financial market imbalances.[37] However, the only moderately reliable model is that of South Korea. Nevertheless, the notion that global financial integration influences liquidity provision is only supported by a small number of the selected countries. Therefore there is only limited support for hypothesis 9.

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[36] During financial market disequilibria, the credit supply of the global interbank market is limited, which exacerbates funding shortfalls for financial intermediaries that rely on this market (Iyer, *et al.*, 2013). As such, governments may increase liquidity provision to mitigate these shortfalls.

[37] Fecht *et al.* (2012) and Rey (2015) alluded to the fact that liquidity leakages are prominent in countries that have a high degree of global financial integration, which suggests the United Kingdom and Taiwan have increased liquidity provision to circumvent liquidity leakages.

A Logit Regression Analysis was also conducted to evaluate the influence of global financial integration on adjustments in central bank interest rates, with Hong Kong and China also being excluded from this analysis. The statistically significant results of the Logit Regression Analysis showed that only Poland out of the 21 countries studied indicated a significant relationship between global financial integration and central bank interest rates. Since only one country supports the notion that global financial integration influences central banks to reduce credit spreads, there is no support for hypothesis 10[38]. Mishkin (2009) also found that global financial integration does not influence interest rate policies. Rather than directly influencing interest rate policies implemented during financial market disequilibria, global financial integration may influence the effects of interest rates on financial markets and economies (Mishkin, 2009). As such, monetary policies are likely to be determined by more endogenous factors such as price stability (Mishkin, 2009).

Finally, in evaluating the notion of global financial integration inducing policy harmonisation during periods of financial market disequilibria, a One-Way Anova Test was conducted which determines whether or not there were significant differences in macroeconomic policies implemented by governments across the selected countries.

**[Insert Table 10 about here]**

The results of Table 10 indicate that there were significant differences in the average changes in government spending, liquidity provision and central bank interest rates implemented by governments as stabilisation policies when there were high degrees of global financial integration. This suggests that governments are generally autonomous when designing and

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[38] This result is not presented in the paper.

implementing macroeconomic policies to resolve financial market imbalances. Therefore, these results provide strong evidence against hypothesis 11. Fiscal policies such as government spending are often determined by economic cycles and the government budget constraint, which influence the level of tax revenues and the availability of funding for governments (Gali, 2013). Indeed, countries with high degrees of global financial integration may have different economic cycles that require different levels of government spending. Moreover, monetary policies are often based on targets set for inflation rates, interest rates, and three-month Libor rates, which differ across countries (Gali, 2013). In addition, central banks that have insufficient capital may not be able to implement extraordinary measures such as the Term Auction Facility in the United States during periods of financial market disequilibria (Stella, 2009). As such, macroeconomic policies implemented to resolve financial market disequilibria are likely to be different across countries even if there is a high degree of global financial integration. Overall, the findings of this study provide strong support for hypotheses 8, limited support for hypotheses 9, no support for hypothesis 10 and strong support against hypothesis 11.

## 5. Discussion and Conclusion

The 2008 Financial Crisis is a supreme example of the cataclysmic effects resulting from financial market disequilibria that are not effectively resolved by governments[39]. However, the task of identifying the role of macroeconomic policies in supplementing macroprudential regulation has been relatively elusive due to uncertainty regarding the efficacy of fiscal and monetary policies (Pasquariello, 2014). The findings of the first objective help to elucidate an effective policy framework for governments and monetary authorities to implement in efforts to resolve financial market disequilibria. While some studies such as Delong *et al*. (2012)

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[39] See, for instance, Taylor (2009) and Tanzi (2015) for a comprehensive review concerning macroeconomic policies and financial crisis.

gave credence to government spending as a stabilisation tool, other studies such as Woodford (2011) posited that government spending is more effective at increasing GDP and private investment. This study provides further clarity on the efficacy of government spending, postulating that governments should abstain from increasing expenditure during periods of financial market disequilibria because this expansionary policy does not effectively resolve imbalances in financial markets. Moreover, government spending during periods of financial market disequilibria has negligible effects on interest rates, GDP, consumption, and private investment. Disequilibria in financial markets limit credit availability and increase risk premia, making it more difficult for governments to finance their deficits (Alesina and Ardagna, 2009). Hence, government spending during these periods may have destabilising effects. As such, governments should maintain prudent expenditure when there are financial market disequilibria as a more balanced budget may foster confidence in financial markets. As for monetary policies, interest rates should be the primary stabilisation tool of monetary authorities while liquidity provision should be secondary within their policy framework. Central to this proposition is the notion that the efficacy of liquidity provision is determined by the degree of cohesion within financial markets. Fragmented financial markets retard the efficacy of liquidity provision in resolving financial market disequilibria (Taylor and Williams, 2009). It is imperative that monetary authorities first evaluate the intrinsic structure or cohesion of financial markets before injecting liquidity, but this may limit the responsiveness of monetary authorities to financial market disequilibria. On the other hand, interest rate policies may be relatively more effective in resolving financial market disequilibria. Based on the findings of this study and propositions of Mishkin (2011) and Gali (2013), interest rates should be reduced after financial market disequilibria materialise rather than increased before imbalances develop. Therefore, a synthesis of prudent government

spending, conditional liquidity provision and reduced interest rates may effectively resolve financial market disequilibria.

The findings of the second and third aims of this study are more pertinent to market participants such as households and investors as they help to mitigate uncertainty regarding the choices governments make relative to the macroeconomic policies implemented to resolve financial market disequilibria. This study adds to existing knowledge on the influence of the political landscape throughout the policy-making process during periods of financial distress. Regarding the influence of the political landscape, studies such as Song (2010) suggested that right-wing governments have an inclination to maintain policy frameworks that are reactive in nature while left-wing governments take a more proactive stance in resolving financial market disequilibria. Contrary to the postulations of Song (2010), this study posits that political orientations do not influence governments' choice of macroeconomic stabilisation policies. Rather, governments with different political ideologies are likely to implement similar policies during periods of financial market disequilibria. As such, partisan changes in governments do not necessarily change the paradigm of macroeconomic policies aimed at mitigating imbalances in financial markets. Hence, market participants should not base consumption or investment bundles during financial market disequilibria on the political orientation of the government in office. When there are financial market disequilibria, market participants can expect newly elected governments with different political ideologies to follow prominent policy frameworks. As for global financial integration, many studies such as Auerbach and Gorodnichenko (2013) and Feentra and Taylor (2014) suggested that a high degree of financial integration between countries leads governments to increase expenditure and liquidity provision during periods of financial market disequilibria. However, this study suggests that global financial integration does not

influence the macroeconomic policies chosen to mitigate imbalances in financial markets. Furthermore, global financial integration does not cause countries to coordinate macroeconomic stabilisation policies. Hence, if capital controls are reduced or the degree of global financial integration increases, market participants should expect the macroeconomic policy framework for resolving financial market imbalances to remain the same. Therefore, there should be less uncertainty during financial market disequilibria if changes occur in the political landscape or in the degree of global financial integration.

Overall, the results of this study elucidated the efficacy of macroeconomic policies in redressing financial market imbalances and provided insights on the influence of the political landscape and global financial integration of the policymaking process. This study has found that government spending does not significantly mitigate imbalances in financial markets and may have destabilising effects since it has a limited impact on market interest rates, GDP, consumption and investment. Furthermore, liquidity provision is also not an effective macroeconomic policy for facilitating stability within financial markets. However, this study has found that reductions in central bank interest rates significantly reduce credit spreads and mitigate imbalances in financial market. As such, an appropriate policy framework would be prudent government spending, conditional liquidity provision, and a reduction in interest rates following the development of financial market disequilibria.

As for the impact of the political landscape, this study has found that political orientations do not significantly influence the macroeconomic policies chosen to resolve financial market disequilibria. Instead, macroeconomic policies are likely to be the same across political orientations when there are financial market disequilibria. Moreover, this study shows strong evidence to support the notion that imbalances in financial markets cause policy convergence

across political orientations. This study has also found that government spending, liquidity provision and central bank interest rates implemented during periods of financial market disequilibria may not be significantly influenced by global financial integration. Finally, this study has found strong evidence against the notion that financial market imbalances cause policy harmonisation across countries with high degrees of global financial integration.

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**Table 1: Descriptive Statistics of the Macroeconomic Variables**

| Country | Government Spending | | Liquidity Provisions | | Interest Rates | |
|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Mean | SD |
| Australia | 0.014 | 0.016 | 0.019 | 0.012 | -0.008 | 0.062 |
| Austria | 0.004 | 0.009 | 0.010 | 0.019 | -0.006 | 0.046 |
| Brazil | 0.005 | 0.029 | 0.016 | 0.012 | -0.008 | 0.049 |
| Canada | 0.004 | 0.006 | -0.024 | 0.224 | -0.010 | 0.053 |
| China | 0.041 | 0.493 | 0.038 | 0.042 | -0.005 | 0.037 |
| France | 0.003 | 0.006 | 0.013 | 0.022 | -0.038 | 0.128 |
| Germany | 0.003 | 0.009 | 0.012 | 0.014 | -0.038 | 0.128 |
| Hong Kong | 0.007 | 0.084 | 0.022 | 0.021 | -0.002 | 0.036 |
| Japan | 0.005 | 0.025 | 0.007 | 0.005 | -0.012 | 0.083 |
| Malaysia | 0.018 | 0.328 | 0.029 | 0.024 | -0.006 | 0.025 |
| Netherlands | -0.112 | 1.186 | 0.016 | 0.025 | -0.035 | 0.200 |
| Norway | 0.015 | 0.020 | 0.016 | 0.012 | 0.001 | 0.333 |
| Poland | -0.015 | 0.606 | 0.022 | 0.023 | -0.022 | 0.063 |
| Singapore | 0.016 | 0.096 | 0.018 | 0.018 | 0.000 | 0.022 |
| South Africa | 0.007 | 0.009 | 0.030 | 0.020 | -0.006 | 0.054 |
| South Korea | 0.010 | 0.010 | 0.026 | 0.017 | -0.015 | 0.093 |
| Sweden | 0.368 | 2.135 | 0.015 | 0.020 | -0.026 | 0.172 |
| Switzerland | 0.003 | 0.011 | 0.014 | 0.031 | 0.002 | 0.134 |
| Taiwan | 0.095 | 0.267 | 0.096 | 0.233 | -0.023 | 0.179 |
| United Kingdom | 0.005 | 0.010 | 0.015 | 0.016 | -0.019 | 0.121 |
| United States | 0.003 | 0.008 | 0.012 | 0.016 | -0.018 | 0.170 |

Note: presents the mean (Mean), standard deviation (SD) for changes in government spending, liquidity provisions and interest rates for each of the selected countries.

**Table 2: The Short-term Impact of Government Spending on Changes in Credit Spreads**

| Country | Lag | Coefficient | Standard Error | T-Statistic |
|---------|-----|-------------|----------------|-------------|
| Canada | Second | -34.04 | 10.339 | -3.293** |
| Norway | First | -10.05 | 4.317 | -2.328* |
| Poland | First | 0.33 | 0.139 | 2.379* |

Note: This table reports the results of the regression equation (1) where the dependent variable is the change in Credit Spreads and the independent variable is Government Spending. * denotes significance at the 5% level whilst ** denotes significance at the 1% level.

**Table 3: The Impact of Government Spending on Market Interest Rates, GDP, Consumption and Investment**

| Variables | Country | R-Squared | Adj. R-Squared | Constant | Coefficient |
|---|---|---|---|---|---|
| **Interest rates** | Malaysia | 0.154 | 0.143 | -0.010* (-2.37) | -0.040** (-3.72) |
| **GDP** | Malaysia | 0.405 | 0.398 | 0.020** (5.76) | 0.083** (7.74) |
| | China | 0.876 | 0.874 | 0.023** (4.77) | 0.248** (24.90) |
| | South Africa | 0.059 | 0.048 | 0.006** (8.68) | 0.156* (2.34) |
| | France | 0.109 | 0.099 | 0.005** (8.29) | -0.292** (-3.28) |
| **Consumption** | United Kingdom | 0.084 | 0.073 | 0.013** (16.35) | -0.197** (-2.84) |
| | Australia | 0.059 | 0.049 | 0.007** (9.48) | 0.084* (2.36) |
| | Hong Kong | 0.089 | 0.078 | 0.01 (1.97) | -0.169** (-2.93) |
| | France | 0.071 | 0.06 | 0.005** (7.40) | -0.268* (-2.59) |
| | Austria | 0.046 | 0.035 | 0.014 (0.69) | -4.199* (-2.05) |
| **Investment** | United States | 0.05 | 0.04 | 0.013** (5.77) | -0.591* (-2.17) |
| | Malaysia | 0.079 | 0.068 | 0.014 (1.47) | 0.078** (2.74) |
| | South Korea | 0.059 | 0.048 | 0.010* (12.38) | 0.663* (-2.35) |
| | China | 0.831 | 0.829 | 0.029** (5.59) | 0.217** (20.83) |
| | Brazil | 0.712 | 0.709 | 0.002 (0.14) | 0.779** (14.75) |
| | France | 0.158 | 0.148 | 0.006** (4.60) | -0.810** (-4.06) |

Note: This table presents the results of the regression equation (1) where the dependent variables are Market Interest Rates (MIR), GDP, Consumption (C) and Investments (I), respectively whilst the independent variable is Government Spending. * denotes significance at the 5% level whilst ** denotes significance at the 1% level. T-Statistic is within parentheses.

**Table 4: Underlying Impact of Liquidity Provision on Changes in Credit Spreads**

| Type of Regression | Country | R-Squared | Adj. R-Squared | Coefficient |
|---|---|---|---|---|
| **Uncontrolled** | Canada | 0.157 | 0.137 | -0.322*<br>(0.13) |
| **Controlled** | Switzerland | 0.161 | 0.098 | -1.289**<br>(-2.79) |
| | Poland | 0.186 | 0.095 | 6.405*<br>(2.17) |

Note: This table reports the results of the regression equation (2) where the dependent variable is the change in Credit Spreads and the independent variable is Liquidity Provisions. * denotes significance at the 5% level whilst ** denotes significance at the 1% level. T-Statistic is within parentheses.

**Table 5: The Underlying Impact of Changes in Central Bank Interest Rates on Changes in Credit Spreads**

| Type of Regression | Country | R-Squared | Adj. R-Squared | Coefficient |
|---|---|---|---|---|
| **Uncontrolled** | Australia | 0.166 | 0.147 | 1.872** (4.064) |
| | United States | 0.308 | 0.292 | -1.074** (-6.035) |
| | Singapore | 0.059 | 0.037 | 3.285* (2.263) |
| | Hong Kong | 0.177 | 0.158 | 4.262** (3.897) |
| | Canada | 0.157 | 0.137 | 0.566* (2.147) |
| | South Korea | 0.071 | 0.050 | 0.635* (2.545) |
| | South Africa | 0.083 | 0.062 | 3.997* (2.246) |
| | Taiwan | 0.068 | 0.047 | -1.286* (-2.529) |
| | Germany | 0.093 | 0.072 | 0.549* (2.485) |
| **Controlled** | Australia | 0.200 | 0.142 | 2.277** (3.933) |
| | United States | 0.416 | 0.374 | -0.826** (-4.060) |
| | Hong Kong | 0.212 | 0.120 | 4.423** (3.057) |
| | China | 0.313 | 0.219 | 2.316** (3.268) |
| | South Africa | 0.445 | 0.404 | 7.731** (5.117) |
| | Taiwan | 0.166 | 0.099 | 1.461** (-2.750) |
| | Germany | 0.125 | 0.062 | 0.584* (2.487) |

Note: This table presents the results of the regression equation (2) where the dependent variable is the change in Credit Spreads and the independent variable is central bank interest rates. * denotes significance at the 5% level whilst ** denotes significance at the 1% level. T-Statistic is within parentheses.

**Table 6: Mean Comparison of Macroeconomic Policies based on Left-Wing and Right-Wing Governments**

| Political Orientation | Policy | Sum of Squares | Degrees of Freedom | Mean Square | F Ratio | Significance Level |
|---|---|---|---|---|---|---|
| Left | Government Spending | 0.187 | 20 | 0.009 | 0.460 | 0.980 |
| | Liquidity Provision | 0.279 | 20 | 0.014 | 0.653 | 0.874 |
| Right | Government Spending | 1.207 | 20 | 0.060 | 1.296 | 0.170 |
| Centre | Government Spending | 0.063 | 2 | 0.032 | 0.193 | 0.825 |
| | Liquidity Provision | 0.023 | 2 | 0.011 | 2.019 | 0.135 |

Notes: The table details the analysis of variance results of macroeconomic policies implemented by governments based on their political orientation. F-ration denotes significance of the F-ratio.

**Table 7: The Underlying Influence of Left-Wing and Right-Wing Governments on the Policymaking Process**

| Country | Policy | R-Squared | Constant | Coefficient | Correlation |
|---|---|---|---|---|---|
| United Kingdom | Liquidity Provision | 0.204 | 0.007** (2.905) | 0.015** (4.743) | 0.451** |
| Australia | Liquidity Provision | 0.065 | 0.017** (10.416) | 0.006* (2.475) | 0.255* |
| United States | Government Spending | 0.095 | 0.006** (4.367) | -0.005** (-3.035) | -0.308** |
| Brazil | Government Spending | 0.051 | 0.145** (4.052) | -0.122* (-2.176) | -0.226* |
| | Liquidity Provision | 0.052 | 0.142** (4.499) | -0.107* (-2.186) | -0.227* |
| Taiwan | Liquidity Provision | 0.105 | 0.019** (12.563) | -0.008** (-3.210) | -0.324** |
| France | Interest Rates | 0.097 | -0.026 (-1.198) | -0.147** (-3.083) | -0.312** |
| Poland | Liquidity Provision | 0.004 | 0.025** (4.747) | 0.003 (0.568) | 0.303** |

Note: This table presents the results of the correlation analysis and regression equation (3) where the dependent variable is Government Spending (GS), Liquidity Provision (LP) and Central Bank Interest Rates (CBIR) during Financial Market Disequilibria and the independent variable is the political orientation of governments. * denotes significance at the 5% level whilst ** denotes significance at the 1% level. T-Statistic is within parentheses.

**Table 8: Policy Convergence across Political Orientations**

| Policy | Sum of Squares | Degrees of Freedom | Mean Square | F Ratio | Significance Level |
|---|---|---|---|---|---|
| Government Spending | 0.093 | 2 | 0.046 | 1.098 | 0.334 |
| Liquidity Provision | 0.076 | 1 | 0.076 | 3.535 | 0.06 |
| Interest Rates | 541.147 | 1610 | 0.336 | 0.844 | 1 |

Notes: The table details the analysis of variance results to evaluate the notion of policy convergence. F-ration denotes significance of the F-ratio.

**Table 9: The Influence of Global Financial Integration on Liquidity Provision**

| Country | R-Squared | Constant | Coefficient |
|---|---|---|---|
| United Kingdom | 0.068 | 0.012** (5.480) | 0.009* (2.539) |
| United States | 0.064 | 0.014** (7.594) | -0.011* (-2.459) |
| South Korea | 0.209 | 0.034** (12.495) | -0.016** (-4.825) |
| Taiwan | 0.054 | 0.007 (1.723) | 0.010* (2.250) |

Note: This table presents the results of the regression equation (4) where the dependent variable is Changes in Liquidity Provision (LP) during Financial Market Disequilibria and the independent variable is Global Financial Integration (GFI). * denotes significance at the 5% level whilst ** denotes significance at the 1% level. T-Statistic is within parentheses.

**Table 10: Policy Harmonisation**

| Policy | Sum of Squares | Degrees of Freedom | Mean Square | F Ratio | Significance Level |
|---|---|---|---|---|---|
| Government Spending | 4.853 | 20 | 0.243 | 3.918 | 0.000 |
| Liquidity Provision | 0.781 | 20 | 0.039 | 7.976 | 0.000 |
| Interest Rates | 8.249 | 20 | 0.412 | 13.603 | 0.000 |

Notes: The table details the analysis of variance results to evaluate the notion of policy harmonisation. F-ration denotes significance of the F-ratio.

**Appendix 1: Changes in Credit Spreads**

| Country | Min | Max | Mean | SD | Skew | Kurt |
|---|---|---|---|---|---|---|
| Australia | -1.815 | 3.157 | 0.070 | 0.748 | 1.06 | 4.57 |
| Austria | -3.051 | 1.910 | -0.040 | 0.579 | -2.01 | 11.16 |
| Brazil | -1.299 | 0.874 | 0.010 | 0.248 | -1.02 | 11.22 |
| Canada | -2.197 | 2.442 | 0.040 | 0.665 | 0.15 | 2.95 |
| China | -0.397 | 0.272 | -0.010 | 0.084 | -0.95 | 6.58 |
| France | -1.792 | 3.296 | 0.013 | 0.579 | 1.88 | 13.13 |
| Germany | -2.996 | 1.897 | -0.029 | 0.626 | -1.44 | 7.80 |
| Hong Kong | -0.934 | 1.580 | 0.020 | 0.398 | 0.69 | 3.63 |
| Japan | -1.271 | 0.747 | -0.022 | 0.316 | -0.52 | 2.24 |
| Malaysia | -0.773 | 0.554 | -0.011 | 0.221 | -0.89 | 2.12 |
| Netherlands | -1.305 | 1.000 | 0.003 | 0.294 | -0.85 | 5.94 |
| Norway | -3.060 | 3.178 | -0.008 | 0.712 | 0.56 | 10.50 |
| Poland | -2.005 | 3.989 | 0.052 | 0.799 | 1.59 | 7.52 |
| Singapore | -0.552 | 0.610 | 0.011 | 0.205 | -0.23 | 1.30 |
| South Africa | -0.282 | 0.219 | -0.005 | 0.093 | -0.76 | 1.12 |
| South Korea | -1.906 | 1.705 | -0.014 | 0.522 | -0.33 | 3.36 |
| Sweden | -0.652 | 0.655 | -0.006 | 0.170 | 0.19 | 4.40 |
| Switzerland | -1.758 | 2.416 | -0.003 | 0.441 | 1.31 | 12.96 |
| Taiwan | -3.258 | 3.664 | 0.035 | 1.089 | 0.16 | 3.70 |
| United Kingdom | -1.409 | 2.125 | 0.021 | 0.424 | 0.83 | 7.68 |
| United States | -1.682 | 1.681 | -0.051 | 0.458 | -0.69 | 4.59 |

Note: This table presents the descriptive statistics of changes in credit spreads for each of the 21 sample countries. The table provides the minimum (Min), maximum (Max), mean (Mean), standard deviation (SD), skewness. This table demonstrates that the changes in the credit spreads of the 21 selected countries are both positive and negative for each country, with the average change in credit spreads being positive for 10 of the selected countries. Regarding skewness, the changes in credit spreads of 10 of the selected countries are skew to the right whilst for kurtosis, 15 of the selected countries have kurtosis values higher than three.