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How Does Trust Impact Sovereign Credit Default Swap Spreads?

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Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University, and, to the best of our knowledge and belief, contains no material published or written by another person, except where due reference is made in the thesis.

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Abstract

Trust is a key aspect underpinning any market or transaction, particularly within sovereign credit default swap (SCDS) markets, yet the question of its impact on its pricing has been left unanswered. This thesis seeks to analyse the spreads of SCDS across a wide range of countries and answer the question: *how does the level of trust that global investors have in a nation influence these spreads?* Through an extensive empirical analysis and novel theoretical discussion, we seek to further the field of sovereign behavioural finance.

This study suggests that there are three key effects in SCDS markets relating to trust. The first is the Economic Development Effect, where countries with higher GDP per capita have more favourably priced SCDS due to their superior economic development, and not any fundamental factors. Secondly, a Financial Development Effect is found where countries with more developed markets and institutions additionally have lower SCDS spreads due to this development alone. Thirdly is the Unobserved Effect, whereby sovereign spreads are influenced by a large degree of unobserved country heterogeneity. All three effects are highly economically and statistically significant, and we suggest that these observations are due to the underlying beliefs and preferences of international investors. These effects are captured through the creation of a Trust Index, which provides a ranking of the most trusted countries in the context of debt repayment. This index highlights the differential treatment of nations by global investors in credit which, in a time of record-high global sovereign debt levels, should be carefully scrutinised.

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Chapter 1. Introduction

When lending to an agent, the risk of that investment is determined by both their ability and willingness to repay that debt (see, for example, Eaton & Gersovitz, 1981). This is generally dictated by the agent's financial status, market movements, regulation, and quality of character. Given unstable agents tend to act in ways which leads them to be genuinely unable to repay debt, it would be reductive to state that character quality only impacts their willingness to repay. Hence, the impact of character quality is two-fold, impacting both their willingness and their ability to repay. What is perhaps more relevant for lending pricing however is the perception of such quality or, in other words, how much the lender trusts them. How much can this agent be trusted? What history do they have that dictates this trust? What traits are most relevant for them to cement the lender's trust?

These concepts and questions carry from a simple 'I owe you' to a friend, all the way up to lending to and between countries. Therefore, sovereign credit pricing contains in it potentially valuable insights into the level of trust that investors worldwide have in the governments, systems, and financial institutions of nations. This pricing indicator would be perception-weighted by investment amounts of the investor base, and hence is an important indicator of how countries are influenced by the perceptions of global investors. Furthermore, in the current climate of record-high global public debt levels,[1] such indicators are pertinent for governments, investors, and regulators to be aware of.

This thesis seeks to create a forward-looking index of how much countries are trusted in the

[1] Visit www.economist.com/content/global_debt_clock for a visualisation of global public debt levels through time.

context of debt repayment. We will use sovereign credit default swap (SCDS) spreads[1] as the dependent variable and seek to extract the portion of these spreads that can be attributed to the level of trust that investors have in the sovereign entity. The difficulty of this task lies in the separation of different effects and their respective impacts on sovereign credit pricing. Trust is "the invisible foundation of a fair and open market" (OECD, 2019, p. 9) and consequently is inherently difficult to analyse.

This paper undertakes an empirical analysis of several different factors and their impacts on sovereign credit pricing across countries and through time. By identifying such factors linked to trust not analysed in previous literature, we seek to provide new insight into sovereign credit pricing that is linked to behavioural finance and economics. Such insights could potentially provide useful advice for countries, particularly developing countries, of means to change the price at which they can borrow through avenues other than improving their fiscal and economic risk levels. Regression models will be used, utilising several different parametrisations, transformations, and fixed effects (FE). The results of these regressions will then be used for the creation of the Trust Index.

The sample consists of 90 countries for which SCDS data is available. The time period is 2004-2018, but with few observations in 2004 and 2005 due to data availability restrictions. The significant length of time allows for observations of long-term trends, which is integral to the aim of this research. Furthermore, by analysing a wide range of countries unlike in previous studies that have focused on smaller subsets, this allows an analysis of such variables across a broader range than if just focusing on one geographical region or country development level

[1] Credit Default Swaps (CDS) are insurance contracts which provide protection against a corporation or sovereign entity (the reference entity) defaulting. CDS spreads are the regular payment paid by the CDS purchaser to the CDS seller. This spread is expressed as a percentage of the national value of the contract.

for example. A wide range of explanatory variables are collected for analysis, with the variables selected informed by previous literature and our hypotheses.

The results indicate that there are three key effects of interest. The first result is the Economic Development Effect, whereby countries with higher Gross Domestic Product (GDP) per capita have more favourably priced SCDS above and beyond any factors linked to the fiscal or economic position of the country. The second result is the Financial Development Effect, which indicates that countries with more advanced financial institutions and markets also have favourably priced SCDS beyond factors of rational models. The strongest effect of the two is the Economic Development Effect, which also exhibits a higher degree of robustness. Due to the host of other variables accounted for, this study suggests that these effects are due to differences in trust that investors have in countries.

The third result is the Unexplained Effect which is captured by the country FE in the analysis. This unobserved country heterogeneity is of particular interest and presents an area for future investigation. We anticipate that this effect is a result of different engrained trust levels that investors have in countries that has remained constant over the sample period. Surprisingly, little evidence is found of a Political Stability Effect that has been identified previously (see, for example, Bekaert, et al., 2014; Baldacci, et al., 2011; Yalta & Yalta, 2018). The results show that, once development levels and country FE are accounted for, the Political Stability Effect disappears. This suggests that what is key for SCDS spreads is not their government effectiveness or systems, but rather, how developed they are.

The regression results are then used to create a Trust Index for the sample countries. According

to the index,[1] the three most trusted countries as of 2018 are Japan, the U.S., and Singapore. The three least trusted countries are Argentina, Lebanon, and Pakistan. Moreover, the trust scores are further analysed using interaction terms to determine if there is any additional non-linearity in effects. The findings indicate that, as economic risk and Gross Debt-to-GDP increase in severity, biases in SCDS pricing favouring more trusted countries begin to dissipate. This contradicts our predictions but indicates that, as risk factors become more extreme for countries, trust levels influence the decisions of investors less.

Overall this thesis seeks to further the field of sovereign behavioural finance by analysing SCDS spreads through a behavioural lens and is a hybrid of an empirical exercise complemented with much theoretical discussion. We endeavour to explore the interesting, almost philosophical, concept of how trust influences behaviour - both consciously and unconsciously - in the context of global financial markets. The remainder of this paper is organised as follows. Chapter 2 discusses the key aspects of related literature. Chapter 3 outlines the hypotheses of this thesis. A description of the data and methodology is given in Chapter 4. Initial regression results are presented in Chapter 5 and the Trust Index is calculated in Chapter 6. Chapter 7 concludes.

[1] Three different equations for the creation of this index are considered. The equation chosen (Equation 1) incorporates all of the country FE.

Chapter 2. Literature Review

This chapter contextualises the paper by synthesising much of the relevant literature. Given the broad scope of this thesis, the amount of such literature is extensive. This review covers standard SCDS determinants across different sovereign categories, before turning to discussions around political stability, trust in financial markets, and then branching back out to behavioural finance and economics.

2.1. Inspiration

The initial inspiration for this thesis' research question came from Eaton and Gersovitz' (1981) seminal paper. By examining poor country borrowing and the lack of direct penalties for non-repayment, they delineated between a nation's *ability* to repay debt, and their *willingness* to do so. In summary, their paper found that sovereign default came down to a simple cost-benefit analysis for politicians. If the benefit of defaulting was greater than the cost, then this would be the action they would take. However, there has not yet been an empirical investigation into how perceptions of ability and willingness to repay can influence sovereign credit pricing.

Such questions around 'willingness' can be linked to behavioural aspects of finance. Broadly speaking, behavioural finance can be broken into two 'building blocks': limits to arbitrage and psychology (Barberis & Thaler, 2003). The latter component will be the focus of the behavioural discussions in this study.

2.2. Sovereign Spreads[1] in Emerging Markets

Much literature exists on determinants of sovereign spreads for emerging market economies. Baldacci, et al. (2011) explored this and found that both political and fiscal factors were key determinants of sovereign pricing. They found that lower political risk levels were associated with smaller spreads, especially during periods of financial turmoil. A similar study for emerging markets into 'Determinants of Sovereign Risk' (Hilscher & Nosbusch, 2010) covered a broader range of determinants and used the J.P. Morgan Emerging Markets Bond Index (EMBI).[2] In this study two of the key determinants were Debt-to-GDP and Reserves-to-GDP ratios. However, the authors raised concerns about such measures due to potential issues with endogeneity, non-linearity, and accuracy of indicating fiscal sustainability. Moreover, Bouri, et al. (2017) found that commodity volatility significantly impacted SCDS spreads in emerging and frontier markets, but that this effect was different across time and countries. Other extant research in this area of sovereign spread determinants include Edwards (1986), Uribe and Yue (2006), and Duffie, et al. (2003). Common variables utilised in such studies beyond those already mentioned are local equity returns, the VIX index,[3] U.S. corporate bond spreads, and inflation.

Furthermore, it has been noted that, for emerging markets, sovereign credit rating changes are particularly influential on sovereign spreads (Guillermo, et al., 1997; Ismailescu & Kazemi, 2010). Additionally, Reinhart (2002) observed that there is a strong association between currency crises and default risk in emerging markets.

[1] Sovereign spreads refers to both sovereign bond spreads and SCDS spreads, both of which are indicators of the credit risk of a nation.
[2] Initially created by J.P. Morgan in the early 1990s, the EMBI index covers returns of U.S. dollar-denominated Brady bonds, Eurobonds, and loans in emerging market economies.
[3] Implied volatility on S&P500 index. This is an indicator of expected market volatility.

2.3. Sovereign Spreads in the Eurozone

Another area with a considerable body of literature is the pricing of Eurozone credit. This has partly been spurred by examinations of the Eurozone sovereign credit crisis[1] and whether prices accurately reflected economic fundamentals before and during the crisis. Favero, et al. (2012) analysed sovereign spreads in the Eurozone and found that default risk was the main driver of yield spreads. They also found a highly significant global risk variable but noted that the impact of this variable was not constant over time. Indeed, the importance of international risk factors on Eurozone sovereign credit has further been evidenced by Manganelli & Wolswijk (2009) and Codogno, et al. (2003). Several studies have also noted the heightened importance of macro fundamentals for sovereign credit pricing during the financial crisis (Maltritz, 2012; Bernoth & Erdogan, 2012; Borgy, et al., 2011; Bernoth, et al., 2012). Ferdinand Heinz & Sun (2014) also acknowledged the importance of macro fundamentals but revealed that liquidity conditions and global investor sentiment also influenced sovereign debt pricing. Notably, the relative influence of these factors was not constant through time.

Examining sovereign risk premiums in government bond markets, Bernoth, et al. (2012) determined that interest differentials in the EU compared to the U.S. were largely due to risk premiums. These premiums increased with fiscal imbalances but declined with the relative bond market size of the nation. Furthermore, Acharya, et al. (2014) studied Eurozone SCDS swaps over the Global Financial Crisis (GFC) and modelled a 'loop' between bank and sovereign credit risk. In doing so, they demonstrated empirically that SCDS spreads were important explanators of bank credit default swap spreads. They also illustrated that there was

[1] Initiated by the collapse of Iceland's banking system in 2008, the Eurozone sovereign debt crisis peaked between 2010 and 2012. During this period several countries experienced aggressively rising bond yield spreads and government debt levels, combined with the collapse of financial institutions. Other than Iceland the primary countries influenced were Greece, Spain, Italy, Ireland, and Portugal. Contributing factors included the 07/08 Global Financial Crisis, the 2008-12 Great Recession, property bubbles, and real estate market crises.

no consideration of sovereign credit risk in developed countries until after the GFC. In a similar vein, Coronado, et al. (2012) investigated Eurozone SCDS lead/lag effects and concluded that, over the period 2007-2010, the stock market played a leading role in predicting SCDS spreads.

2.4. Sovereign Spreads in Advanced Countries

In contrast, examination of sovereign spreads in advanced economies is a relatively nascent area of literature. D'Agostino and Ehrmann (2014) researched the pricing of ten-year G7 sovereign bond spreads. Amongst others, forecast variables of economic fundamentals[1] were considered, with mixed results of their significance reported. Similarly, Gruber & Kamin (2012) studied the impacts of certain forecasted variables on long-term sovereign yields, but this time for the broader OECD over the period 1988-2007. Within their models they allowed for country FE, and found projected gross debt, net debt, primary balance, and structural balance all to be significant determinants of long-term yields. Interestingly, they also found these fiscal effects to be larger for G-7 countries; suggesting that G-7 yields may be more market-driven. In addition, within their study they tested for non-linearity, but found little evidence which opposes Ardagna, et al.'s (2007) findings of non-linear impacts of sovereign credit determinants for the broader OECD.

An additional study of advanced countries was conducted by Dungey, et al. (2000). Here the spreads of long-term bonds for Australia, Germany, Canada, Japan, and the U.K. relative to the U.S. were examined using a factor model. They concluded that strong spread persistence was explained by long swings in common factors but had mixed results around world and country-specific factors between nations. Moreover, Dieckmann & Plank (2012) investigated

[1] Expected Debt-to-GDP, Current Account-to-GDP, real GDP growth, unemployment, and CPI.

SCDS spreads in advanced economies over the period of the GFC. Although standard determinants of spreads[1] were not the focus of the study, the importance of controlling for them in order to analyse abnormal pricing patterns was stressed.

2.5. Common Factors in Sovereign Bond and SCDS Market Pricing

As alluded to in the previous sections, the literature is rich with studies on the importance of common factors in sovereign bond and SCDS market pricing. In their influential paper, Longstaff, et al. (2011) sought to explain sovereign credit risk using SCDS data. They found that the majority of SCDS risk was linked to global factors and that spreads were more closely associated with U.S. markets than local economic measures. Moreover, they concluded that global liquidity played a significant role in determining spreads. One study examined both domestic corporate and sovereign U.S. dollar-denominated bond spreads and sought to separate them into credit and non-credit components (Martell, 2008). By analysing residuals they found a strong relationship between the non-default portions of sovereign and corporate debt spreads. Furthermore, they found that models of debt spreads were significantly improved once liquidity variables were accounted for.

Additionally, Ang & Longstaff (2013) found that financial markets, rather than macroeconomic fundamentals, were the key drivers of Eurozone and U.S. systematic SCDS risk. Surprisingly, they also found a strong negative association of U.S. sovereign spreads with VIX movements (the opposite effect of what was observed in the Eurozone), which they attributed to the U.S. potentially benefiting from flight-to-quality-related capital flows. Comparatively, Pan & Singleton (2008) found that a large portion of co-movement in term

[1] Such variables of note included Debt-to-GDP, reserves, Terms of Trade (TOT) volatility, foreign exchange rates, local financials, 10-year yields, high yield spreads and global financials.

structures of SCDS spreads across Mexico, Turkey, and Korea was due to global investor appetites for credit exposure rather than fundamental factors of the economies.

2.6. Credit Default Swap (CDS) Pricing Models

Having discussed sources of literature on standard sovereign credit pricing determinants, it is beneficial to understand how and why such determinants influence spreads. Although most CDS pricing models are focused upon corporate securities, they still provide a valuable source of literature to understand the mechanisms of CDS spreads. Generally speaking, CDS spreads are priced based on four elements: the risk-neutral probability of default, the risk-neutral expected recovery rate given default, risk aversion premia, and market frictions (Duffie & Singleton, 2003). The first two factors are considered to be the 'default portion' of spreads whereas the latter two are considered the 'non-default portion' of spreads.

A popular study into corporate CDS spreads has noted that most of spreads are due to the default portion, but also that the non-default portion is strongly related to specific bond market liquidity and varies through time (Longstaff, et al., 2005). Notable papers with attempted theoretical models for credit default swaps include Duffie (1999), Jarrow & Turnbull (1995), and Das & Tufano (1995), with the latter two being more general models for credit-sensitive debt contracts. Importantly, Jarrow & Turnbull (1995) specified two different types of credit risk: default of the underlying security and default of the writer of the derivative security. As writers of SCDS contracts are banks, it is the former type of default risk which is relevant for this thesis.

2.7. Political Risk and Markets

The sensitivity of sovereign spreads to political events is well documented. Moser (2007) examined the impact of relevant cabinet reshuffles on sovereign spreads in twelve Latin American countries. Using the EMBI, this study found that political disruptions instantly increased bond spreads. These spreads trended upwards in the 40 days prior to the news and flattened out at a higher level 40 days afterwards. An additional paper (Huang, et al., 2015) also determined that, during times of high political uncertainty, global bond investors required higher rates of return. This adverse effect was lower for borrowing countries with good investor protection and a stable political system. Interestingly, Vaaler, et al. (2005) evidenced a relationship between increasing spreads and the probability that a 'right wing government' was replaced with a 'left wing government'.

An area where there is a slightly larger base of research is the impact of political instability on financial markets and economies more broadly. Constructing an economic political uncertainty index from newspaper coverage frequency, Baker, et al. (2016) found that elevated political uncertainty was associated with lower future investment, output, and employment in the U.S. and twelve other major economies. Related to this, Asteriou & Sarantidis (2016) found that certain political stability indicators over the period 1993-2013 had a negative impact on the banking and stock market index returns for eighteen OECD countries. Lehkonen & Heimonen (2015) similarly found that declining political risk led to higher returns using data over the period 2000-2012 for 49 emerging markets. They also determined a parabolic relationship between democracy and political risk. Furthermore, Jong-A-Pin (2009) observed that perceived instability of a political regime had both a significant and robust negative impact on economic growth.[1]

[1] In this study political instability was separated into instability *of* the political regime, instability *within* the political regime, politically motivated violence, and mass civil protest. However, only instability *of* the political regime had both a significant and robust negative impact on economic growth.

The research closest to this thesis was the paper 'Political Risk Spreads' (Bekaert, et al., 2014). Here, the authors sought to determine the component of emerging market sovereign spreads that was caused by political risk using a simple regression model. This model was updated and extended in their subsequent paper (Bekaert, et al., 2016). Their work found that political risk was the most influential determinant of sovereign spreads and the second largest factor for predicted variance after bond volatility.

In terms of market-based indices of trust, Click (2005) produced the only other attempt in prior literature remotely related to this field. The Click Index was a backward-looking index as it inferred political risk levels from the unexplained country-level variation in U.S. firms' actual realised returns on foreign direct investments (FDI). His empirical evidence suggested that foreign direct investments were greatly influenced by political risk levels.

2.8. Trust in Financial Markets

As the overall concept of this thesis is that trust influences investor decisions, it is relevant to survey the prevailing literature on trust in financial markets. However, there is little literature pertaining to this topic. The central idea of trust literature is that higher levels of trust leads to lower agency costs. A study into banks within Germany found that small and medium enterprises (SMEs) with high levels of trust were less credit constrained and able to obtain more credit (Moro & Fink, 2013). Here the elements of trust were broken down into ability, benevolence, and integrity. Additionally, the OECD (2019) recently published a comprehensive report on the impacts of trust on markets and business. They listed its core elements as fairness and integrity of conduct, societal value alignment, and economic value. Moreover, they expressed that the keys to maintaining trust in markets is strong regulation, oversight, and stability of the financial markets and participants.

Social trust has also been shown to influence economic growth (Zak & Knack, 2001) and development levels (Dearmon & Grier, 2009) in two landmark studies. Relatedly, Bergh & Bjørnskov (2021) evidenced that interest rates were more sensitive to growth and inflation issues in low social trust countries across a panel of middle-high income nations. The measure of social trust in these studies was the proportion of people in a nation that agreed with the statement that most people can be trusted.[1] This is different to the focus on external perceptions of trustworthiness in this thesis but is still a valuable source of literature.

Additionally, a study has attempted the difficult task of measuring trust and trustworthiness using a combination of experiments and a survey (Glaeser, et al., 2000). They found that, when individuals were closer socially, this resulted in an increase in trust and trustworthiness. When partners were of different races or nationalities, trust declined. Whilst their study design and area are far removed from this thesis, it will be interesting to observe whether such tendencies are also reflected in our findings.

2.9. Behavioural Finance and Economics

As this thesis is seeking to examine a concept relating to investor psychology and biases, it is useful to consider the work of scholars in the broader fields of behavioural finance and economics. Prospect theory was first introduced by Kahneman & Tversky (1979) and has since advanced greatly (see, for example, Tversky & Kahneman, 1992). In summary, prospect theory assumes that true objective probabilities of event states do exist but are replaced by decision

[1] This is one of the questions in the World Values Survey which can be found at www.worldvaluessurvey.org/wvs.jsp

weights in expected utility functions.[1] These decision weights are subjective and reflect mistakes in assessing probabilities (the probability of default for example). Closely related to prospect theory is regret theory, where true state probabilities are retained but utility functions are defined in such a way where outcomes in one state are compared to outcomes in other states which could have occurred (Loomes & Sugden, 1982). As individuals are aware of such potential reactions, they factor it into their decision making. Although prospect and regret theory are behavioural economics theories, their applicability to finance and this thesis is clear. For example, Barberis, et al. (2001) investigated prospect theory and its influence on asset prices in the case where investors base utility on consumption and financial wealth fluctuations. Moreover, they are closely associated to advances in behavioural finance involving the impacts of subjective expectations on asset pricing (see, for example, Harrison & Kreps, 1978; Weitzman, 2007).

In addition, these two underlying theories underpin much work on investor psychology and biases. Feng & Seasholes (2005) investigated whether investor sophistication and trading experience eliminated the Disposition Effect[2] and found that, while it could reduce it, it could not be eliminated. Graham, et al. (2009) also found that those with a higher self-perception of trading competence were more likely to trade frequently and hold internationally diversified portfolios.[3] Interestingly, Daniel, et al. (1998) utilised investor overconfidence and biased self-attribution to explain asset return patterns of long-term mean reversion and short-term continuation ('momentum') respectively.[4] Such studies exhibit the potential for irrational behaviour in markets, even in situations where investors are supposedly knowledgeable and sophisticated.

[1] Additionally, the utility function is replaced with a 'value function' which takes a specific form.
[2] The tendency for investors to be reluctant to realise losses but propensity to realise gains.
[3] Known as the 'Competence Effect'.
[4] Although factor (rational) models have also been constructed to explain these asset pricing anomalies.

Kahneman & Riepe (1998) provided a concise overview of 'Aspects of Investor Psychology' and a rich discussion of regret theory in finance. In doing so, they separated the concepts of errors in beliefs and preferences and described biases as systematic errors of judgement. Closely related is the work of Hirshleifer (2001) where the psychology of investors was shown to influence asset pricing, and the study of Daniel, et al. (2002) which explored investor psychology in capital markets and its implications for policy. The authors in the latter study contended that investor biases carry policy implications as the systematic mispricing of securities can lead to a substantial misallocation of resources.

Finally, influenced by many of the aforementioned studies, Baker & Ricciardi (2014) wrote a summary of how biases can influence investor behaviours. In their analysis they noted that, while there are different types of behavioural biases such as cognitive biases (tendencies to think and act in certain ways) and emotional biases (actions taken based on feelings rather than facts), there is often a significant degree of overlap. Hence, they are both branched under the term 'behavioural biases'. Common behavioural biases outlined include: representativeness,[1] regret (loss) aversion,[2] disposition effect,[3] familiarity bias,[4] worry,[5] anchoring,[6] self-attribution bias,[7] and trend-chasing.[8]

[1] Over-reliance on recent performance as an indicator of investment quality, leading to over-purchase of securities that have risen and under-purchase of securities below their intrinsic value.
[2] The emotion of regret resulting from making an inferior choice, leading to a reluctance in selling 'losing' investments.
[3] Tendency to sell 'winning' investments and hold on to 'losers' for too long.
[4] Preference for familiar investments despite clear diversification benefits from other options, leading to local or home biases.
[5] Creates skewed investor judgement of potential outcomes, leading to lower risk tolerance.
[6] Tendency to have a belief and use it as a subjective reference point when making future judgement decisions. This leads to specific pieces of information being overly relied on in cognitive decisions.
[7] Inclination to attribute bad investments to external factors and good investments to their own actions.
[8] Belief that historical returns will predict future investment outcomes.

2.10. Contribution

By applying behavioural finance thought patterns to the study of sovereign credit, this thesis marks a completely novel avenue of investigation. Whilst there have been some works on the impacts of political risk or why social trust can influence reactions to macroeconomic shocks, none of them have explicitly discussed the trustworthiness of an entity as a factor or looked at sovereign credit from a behavioural perspective. As such, we will seek to provide rich discussion which explores new theory.

In addition, previous literature has not covered such a wide range of countries as this thesis, but rather, have generally focused on advanced, emerging, or Eurozone economies. By including more countries in the sample, this thesis will study the impact of explanatory variables across a larger range, having the potential to capture non-linearities whilst concurrently allowing for the findings to carry implications for more nations. Furthermore, most literature on the determinants of sovereign credit pricing has focused on bond yields, whereas this thesis will be analysing SCDS spreads.

Moreover, in this study we are producing a novel methodology for a forward-looking Trust Index that can be applied for future years. This index aims to inform readers of the factors which influence perceptions of trust of sovereign states, and the nature of preferences and beliefs held by global institutional investors. Such considerations are highly relevant amongst the current landscape of global record-high sovereign debt levels and the trend of increasing investor allocations to emerging markets.

Chapter 3. Hypothesis Development

Informed by the literature review, this chapter details the hypotheses of this thesis. It commences with an outline of how trust is anticipated to influence SCDS spreads and how this relates to the testable hypotheses. It concludes with a discussion on potential drivers of differences in trustworthiness and how this informs variable selection in Chapter 4.

3.1. Trusts' Channels of Influence

For sovereign bonds there is an absence of explicit penalties for non-payment unlike in nearly all other markets. Instead "borrowers who repudiate their debt face future exclusion from capital markets" (Eaton & Gersovitz, 1981, p. 304). Hence, sovereign trust has the potential to be highly influential in these markets. SCDS essentially act as an insurance against the sovereign default of a nation. According to standard asset pricing techniques, there are four things that explain CDS spreads: physical default risk, expected recovery at default, default risk premia, and market frictions (Duffie & Singleton, 2003).

The first step is to predict how differences in trust influence these four components of SCDS spreads. The most intuitive channel which we anticipate is that, ceteris paribus, the default risk premia is higher for less trusted countries. Investors need to be compensated for their surface-level perceptions, and this is the avenue through which this may occur (Channel One – Default Risk Premia). Additionally, we predict that trust also influences investor estimates of physical default risk of sovereigns. Default probability is influenced by both the ability and willingness to repay. If a sovereign is perceived to be less likely to be willing to repay, then estimated default probabilities will be increased (Channel Two – Default Probability). A parallel

argument can be drawn for expected recovery at default (Channel Three – Expected Recovery). Linking to prospect theory (Kahneman & Tversky, 1979), Channels Two and Three can be expressed as decision weights that over-estimate the true probability and severity of default. Moreover, there is also likely a role for trust in the influence of market frictions. In times of high uncertainty, the notion of 'Flight to Safety'[1] is a well-documented and researched topic (Sarwar, 2017; Boucher & Tokpavi, 2019). Hence, in times of high market frictions, we anticipate that the adverse effects on SCDS spreads will be exacerbated in less trusted countries (Channel Four – Market Frictions).

When characterising trust as a phenomenon with multiple layers and components, it would seem that Channels 1 and 4 reflect the impacts of more 'surface-level trust', whilst Channels 2 and 3 relate to more 'deeply engrained trust'. This is purely speculative but an interesting thought exercise. We predict that the former is subject to more variation through time, whilst the latter reflects longer-term trends in trust.

3.2. Testable Hypotheses

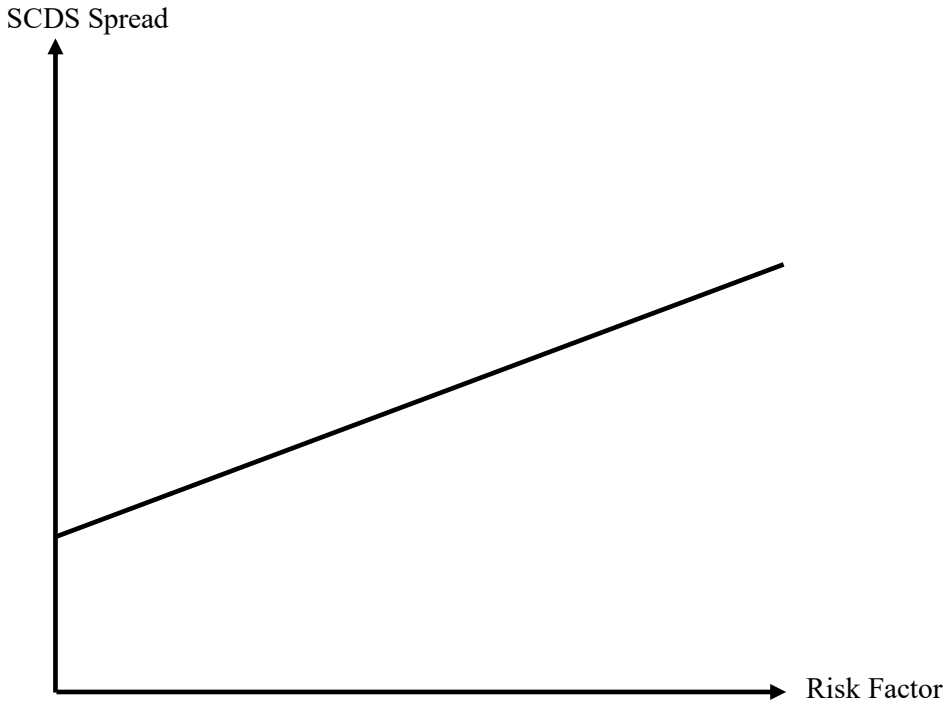
The question for this study therefore becomes: *how do we anticipate these behavioural patterns and channels will influence the empirical results?* It is this question that relates to the testable hypotheses of this thesis. As identified in many of the studies listed in the literature review, there are several risk factors which are statistically associated with changing levels of SCDS spreads. If a certain factor changes in a way which increases the perceived likelihood and severity of default, default risk premia, and/or market frictions, this will lead to a higher spread (ceteris paribus). For example, increasing Debt-to-GDP, economic risk, and Foreign Exchange

[1] Increased investor flows into assets considered 'safer' at the expense of investments in 'riskier' assets.

(FX) volatility are all anticipated to be associated with higher SCDS spreads. Figure 1 below depicts this basic empirical relationship.

Figure 1. Linear Risk Factor SCDS Spread Relationship Hypothesis

This figure displays the basic linear empirical relationship hypothesised between SCDS spreads and risk factors, ceteris paribus. Risk factors include variables such as Debt-to-GDP, economic risk, FX volatility, trust etc.



Where this thesis diverges from previous studies is that trust is considered as an additional risk factor. It is likely a conscious and unconscious aspect of investor decision making, with its effects predicted to precipitate in the SCDS market as above in Figure 1. We hypothesise trust to be a highly influential risk factor with decreasing levels, captured by an increase of the trust risk factor, being associated with higher SCDS spreads. More formally:

Hypothesis 1

H_0 – Trustworthiness of sovereign states has no impact on SCDS spreads.

H_A – Declining levels of trustworthiness are associated with higher SCDS spreads.

However, we expect this to be a non-linear relationship. SCDS spreads reflect both the risk-neutral probability of default and the risk-neutral expected payouts to the buyers of protection in the event of a sovereign default. Changes at low levels of risk factors are therefore less likely to alter default expectations greatly. For example, a Debt-to-GDP ratio increasing from 0.1 to 0.2 is unlikely to significantly change the perceived probability of default. In contrast, an increase from 2.1 to 2.2 will likely alter such perceptions if it brings a country closer to the default threshold. This concept is supported by the finding that "efforts at fiscal consolidation narrow credit spreads, especially in countries with high initial public debt levels." (Baldacci, et al., 2011, p. 251). Similarly, Ardagna, et al. (2007) found a non-linear impact of the effects of debt on long-term interest rates. Only for countries with above-average debt levels did increasing debt levels lead to higher rates. Due to this, we hypothesise that there is a statistical non-linear relationship between the risk variables and SCDS spreads, as shown in Figure 2 below. In other terms:

Hypothesis 2

H_0 – Trustworthiness of sovereign states has no impact on SCDS spreads.

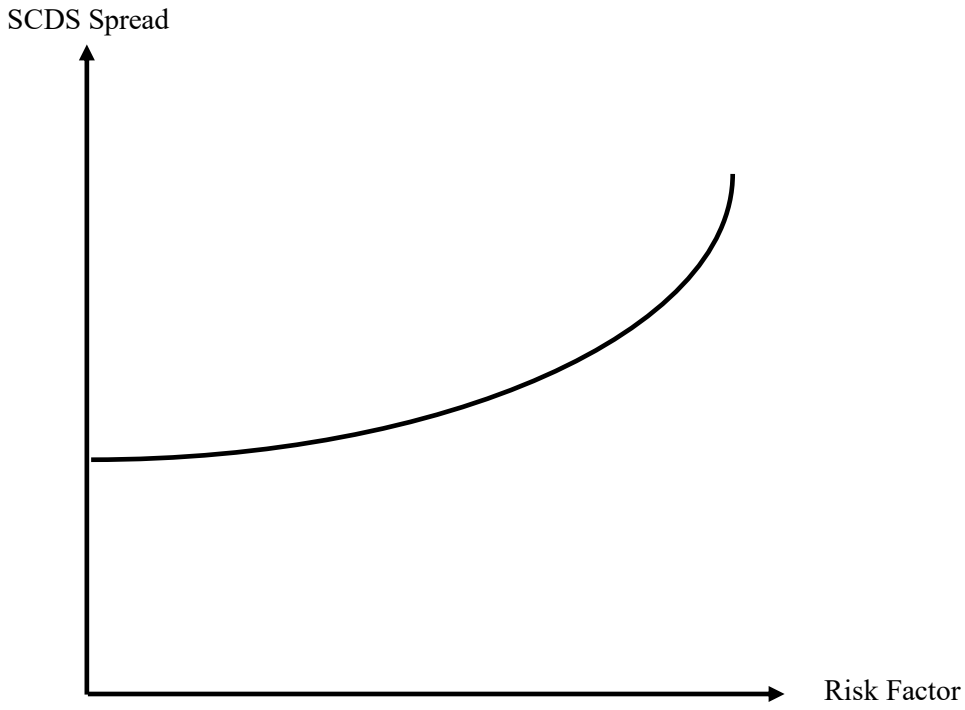
H_A – Declining levels of trustworthiness are non-linearly associated with higher SCDS spreads.

Such a relationship would imply that a dependent variable log transformation would be appropriate to apply in regressions (see, for example, Bekaert, et al., 2014). Some other studies, for example Ferdinand Heinz & Sun (2014), have sought to deal with this issue by using dummy variables for countries with extreme values of certain risk factors or debt levels.

There is an additional impact of trust which we predict. Investors may not trust sovereign states to act in a way that genuinely enables them to repay their debt. In other words, unstable countries may be perceived as more likely to act in a way in the future that impedes their ability

Figure 2. Non-linear Risk Factor SCDS Spread Relationship Hypothesis

This figure displays a non-linear empirical relationship hypothesised between SCDS spreads and risk factors, ceteris paribus. Risk factors include variables such as Debt-to-GDP, economic risk, FX volatility, trust etc.



to make debt repayments (Channel Five – Interaction). Hence, we hypothesise that the degree of non-linearity to changing risk factors will be larger for countries with low levels of trust. For example, consider two countries which experience an increase of their Debt-to-GDP ratio from 1 to 1.5. If one has a stable political system and high government effectiveness then, ceteris paribus, they are more likely to be trusted to be able to reduce their Debt-to-GDP ratio to a more sustainable level over time than the other country. Indeed, Jeanneret (2018) confirmed that government effectiveness had a negative effect on SCDS spreads, especially for countries with high levels of debt, poor economic conditions, and severe default risk.

We would describe this type of trust as also belonging to the 'deeply engrained trust' category discussed previously. This channel was not discussed in the prior section as it has the potential to be isolated empirically. The relationship predicted as a result of this channel is given in Figure 3 below and can be expressed as follows:

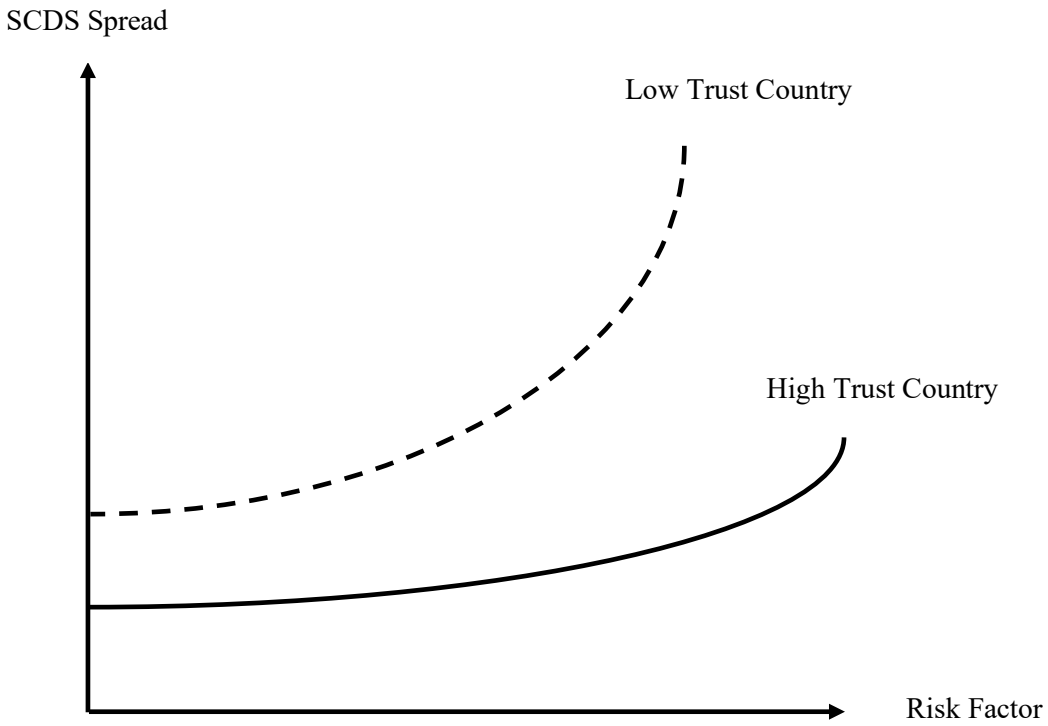
Hypothesis 3

H_0 – Trustworthiness of sovereign states has no impact on the sensitivity of SCDS spreads to changes in other risk factors.

H_A – Declining levels of trustworthiness are associated with higher sensitivity of SCDS spreads to changes in other risk factors.

Figure 3. Low Trust vs High Trust Countries Hypothesis

This figure displays a non-linear empirical relationship hypothesised between SCDS spreads and risk factors. Risk factors include variables such as Debt-to-GDP, economic risk, FX volatility, trust etc. The dashed line represents a country which is has low relative trust of international investors, whereas the solid line represents a country which is highly trusted.



3.3. Drivers of Trust

Hitherto, this chapter has discussed the ways in which differences in trust in sovereigns may influence their SCDS markets. There is also the important question of what drives these

differences in trust themselves. Hypotheses around this will be difficult to test with this study's design. Nevertheless, there are still some general predictions that can be made.

Trust is unique in that it can be considered as both a rational and irrational aspect of asset pricing. For example, it may be perfectly rational to consider a country with less stable political systems, less effective governments, and less public accountability as riskier. Additionally, there may be asymmetrical information barriers present where some government reported statistics are more difficult to validate. It is again rational to charge a premia for investments in such nations. For these reasons, proxies for trust to be considered include political stability, traits of governments, and level of economic development.

There is also the behavioural side of trust where investors may hold irrational biases. For example, familiarity bias (Baker & Ricciardi, 2014) may result in investors being more willing to invest in a foreign market when they are already familiar with its systems and markets. Furthermore, a combination of regret aversion and worry may disincentivise investment in certain countries that their peers are not investing in. This effect may be especially pronounced in the case of institutional investors where portfolio managers worry about the career implications of their investment decisions. Additionally, a combination of representativeness and trend-chasing biases may lead investors to be overly influenced by the recent default history of countries. Such considerations lead to proxies for trust considered such as financial market and institution development, economy size, economic development levels, and recent default history.

It is also likely that trust develops over the long-term. Thus, there is the potential for country FE to capture differences in trust between nations. There are also factors such as linguistic similarity, geographical proximity, and cultural alignment which have the potential to bias

investors. The issue is that we are examining markets where investors are global and as such it is not possible to measure these variables. For instance, if studying the impacts of geographical proximity, it is difficult to determine from which country geographical proximity is being measured. It is also true that some investors from nations dominate foreign investment (for example, the U.S.), and as such their biases will carry a large weighting.

Due to the issues involved with measuring the drivers of trust, we will not posit any hypotheses around such drivers but instead will use them as tools for discussion.

Chapter 4. Methodology and Data

This chapter states the methodology and data used in order to test the hypotheses of this thesis. It begins with an outline of the general methodology before discussing and justifying the data collection process. Subsequently, a preliminary analysis of the data is conducted to aid interpretation of results in future chapters.

4.1. Methodology

Following the established methodology in much literature on sovereign credit, ordinary least squares (OLS) panel regression forms the backbone of the empirical analysis (see, for example, Bekaert, et al., 2014; Kaminsky & Schmukler, 2002; Huang, et al., 2015; Vaaler, et al., 2005). This paper runs several regressions with alternative specifications on a variety of variables identified as potentially impactful on SCDS spreads in previous literature and within the hypothesis development. These variables are split up into global factors, country-specific financial and market factors, and country-specific 'trust-related' variables. It is these trust variables that are of primary interest and that will be used to construct a Trust Index of countries as perceived by investors worldwide. This study experiments with a variety of different regression specifications including non-linear specifications, year FE, and country FE. Such specifications are guided by analysis of the data and previous literature (as outlined in Chapter 5). Some regressions involving interaction terms are additionally run to test Hypothesis 3. Annual data is used for regressions due to both data availability limitations and that this study is predominantly focusing on long-term trends and effects.

4.2. Data Collection Process

For the sovereign credit instrument, SCDS have been selected instead of bond yields due to their superior liquidity (Longstaff, et al., 2011), quicker reactions to market movements (Ammer & Cai, 2011), and that they are a more 'pure' measure of credit risk (Ang & Longstaff, 2013). For a more extensive review of the literature supporting this decision and why credit ratings are also not selected, see Appendix B. Data on these spreads and the relevant document clauses are collected from Wharton Research Data Services (WRDS). Five-year spreads are collected as this is easily the most commonly available maturity across countries and it is also the midpoint of the SCDS maturity range (1-10 years). The provider of this data is the Markit Group, which attains their SCDS spreads from the average of major SCDS dealers. Only spreads on USD SCDS are used in order to avoid any currency risks being directly incorporated into the spreads. All countries with some SCDS data availability are identified by their RED codes in the Markit database. For all of the data the instrument seniority level selected is 'Senior Unsecured Debt'. Some duplicates are present in the database and hence have been removed.

If more than one of the document clauses[1] for the SCDS spread are available on a day, then the average of all the data points is calculated. The reason for this averaging is to maximise the sample size available to study. If, for example, analysis is restricted to just CR and CR14 contracts (the most common contracts), the number of countries available to be analysed would be lowered. This is because firstly, some countries have contracts under documented clauses other than these two, and secondly, there is missing data for CR and CR14 (particularly in developing countries). The issue with this averaging technique is that cross-country regressions

[1] Document Clauses, amongst other things, outline what constitutes default for the reference entity. The different clauses for sovereign entities in the sample are: CR14, CR, MR14, MR, MM, and XR. The CR14 and MR14 clauses were introduced in September 2014 by the International Swaps and Derivatives Association (ISDA) and involved the addition of new provisions and the replacement of previous definitions introduced in 2003.

could be biased from document clause fixed effects. This problem is solved by the creation of an indicative dummy variable for the document clauses that are used for each of these data points.[1] Whilst these are not the classic definition of a dummy variable as values can be between one and zero, it is the terminology that that will be used throughout the rest of the thesis.

These calculations are an important factor to consider as different document types can mean different definitions of what a default constitutes, with some being stricter than others. If these differences impact SCDS spreads, then it needs to be accounted for. This novel technique allows for document clause fixed effects to be accounted for whilst also maximising the sample size available to study. Additionally, averaging has the potential to minimise any non-systematic measurement errors made by Markit during the collection of spreads.[2] An alternative method could have been to take one data point for each time period (daily) and avoid averaging across different clauses. As a robustness check, this method is tested on all models in this thesis and practically identical results for estimates, other than the Document Clause Dummy Variables, are produced.

When converting to annualised data from daily data, period averages are calculated for the calendar year. Data is aggregated to annual data as the purpose of this study is to examine long-term trends and also because much of the data for explanatory variables is annual. A point in time spread at the end of the year is not appropriate, as this may not be representative of the

[1] Equals $\frac{\mathrm{I}\{Document\ Clause=i\}}{Number\ of\ Document\ Clauses}$ $for\ i = CR14, CR, MR14, MR, MM, XR.$ This is calculated for each daily observation. For example, if a country has SCDS data on a day for both CR14, CR, MM and XR, then the Document Clause Dummy Variable for that day is .25 for these document clauses and 0 for MR14 and MR. If data is only available for one type of document clause, then the dummy variable for that document clause is 1 and 0 for the others. If no data exists, then these dummy variables are all blank.

[2] This benefit of averaging applies as a result of poor informational quality for some SCDS spreads provided by Markit due to low liquidity and lack of centralised trading for SCDS. For context, Markit provides a Data Quality Rating for each daily spread, ranging from AA-NR.

entire year. Further, this would also likely be subject to idiosyncratic volatility which is minimised when averaging. These averages are calculated off the average daily SCDS spreads calculated and also for each of the Document Clause Dummy Variables. Spread averages are converted to blank values if the number of daily observations in a calendar year is less than 125 - out of a possible 261 - to ensure that the data is representative of the entire year. This of course has its limitations, for example, if all data is available for the first half of the year but not the second. Nevertheless, in cases where there is 125 or more data points available, then the data is representative of the entire year as data is dispersed throughout the year when manually observed. As a result, annual SCDS data is collected from 2002-2020 - with significantly less data in 2002-2004 - across 98 countries for a total of 1464 observations. If data was available for all years for all 98 countries there would be 1862 observations, implying that the average number of years of available data for each country is 14.9 (out of 19).

For the explanatory variables, an effort has been made to collect as much data as possible for a wide range of variables. All variables mentioned within prior literature, as well as several others, are attempted to be collected. The reason behind this is that data limitations present a significant barrier within these studies. It is difficult to find country-specific standardised data which spans all the countries of interest and over the time period of interest.[1]

If the original reported frequency of a data source is not annual it is converted by taking a period average over the calendar year. There is a potential limitation where annual data sources may just be representative of a point in time (e.g. at the end of the year or halfway through the year), rather than of the whole year like a period average captures.

[1] The PRS dataset with its financial, economic, and political risk estimates would have been ideal for the purposes of this thesis as it accounts for both current and project financials/economics and also covers over 200 countries. The PRS Group were contacted to ask if they would allow access for this research but declined.

4.3. Data Selection

The dependent variables analysed within the regressions are selected based on a judgement of the costs and benefit of their inclusion. Costs of inclusion arise due to the need for observations of all explanatory variables for a data point to be used in regressions. For instance, Oxford Economics produce an estimate of the 'Overall Economic Risk' of a country (sourced through DataStream), but only consistently after 2005. This variable is highly important for this study as it is the only source of projected estimates and accounts for many factors. Additionally, the amount of SCDS data from 2002-2005 is less than later years and the 3-month LIBOR-OIS[1] spread is only available from 2004. It has therefore been decided to include this variable due to the benefits of its inclusion and that, by including it, the number of data points available for regression are not reduced greatly. Additionally, years 2019 and 2020 are omitted as the Financial Development Indices produced by the IMF are not available for these years at the time of conducting this study. Some countries with SCDS data did not have data available for some of the variables deemed essential to this study and, as a result, the number of countries in the dataset is reduced to 90. The data selected and their sources are listed in Table 1 on the following page.

Additionally, some variables have to be calculated into a format that is useful. For example, returns on equity indices are calculated rather than just including their levels. Foreign Exchange (FX) movements also required calculations, particularly as several nations have had pegged currencies over the sample period. Consequently, a dummy variable is calculated for such countries. Weekly FX returns are then calculated, and their standard deviation over the year is

[1] LIBOR stands for London Inter-Bank Offered Rate and OIS stands for Overnight Index Swap. The LIBOR-OIS Spread essentially represents the difference between an interest rate with and without some credit risk built in.

Table 1. Data Selected for Analysis

This table presents a summary of all the variables collected and considered for analysis in this thesis. The left column indicates the type of data, the middle column states the period of frequency which the data originally was provided, and the right column indicates where this data was sourced from.

Data	Available Frequency	Source
Sovereign Credit Default Swap Spread	Daily	WRDS
Sovereign Credit Default Swap Document Clause	Daily	WRDS
3 month LIBOR-OIS Spread	Daily	DataStream
US Corporate Baa-AAA Spread	Daily	DataStream
Banks CDS Spread	Daily	DataStream
Commodity Terms of Trade	Annual	IMF
Control of Corruption	Annual	World Bank
Current Account	Annual	IMF
Financial Development	Annual	IMF
Financial Institutions	Annual	IMF
Financial Markets	Annual	IMF
Financial Markets Efficiency	Annual	IMF
FX (to USD)	Daily	DataStream
GDP	Annual	IMF
GDP per Capita	Annual	IMF
Global Liquidity Indicator	Quarterly	BIS
Government Effectiveness	Annual	World Bank
Gross Debt	Annual	IMF
US Corporate High Yield Spread	Daily	DataStream
Inflation	Annual	IMF
MSCI World Equity Index	Daily	DataStream
MSCI Country Equity Index	Daily	DataStream
MSCI Regional Equity Index	Daily	DataStream
Net Lending	Annual	IMF
OECD Consumer Confidence	Monthly	OECD
OECD Leading Economic Indicators	Monthly	OECD
Overall Economic Risk	Annual	DataStream
Real GDP Growth	Annual	IMF
Reserves (exc. Gold)	Annual	IMF
Political Stability	Annual	DataStream
Rule of Law	Annual	World Bank
S&P500 Equity Return	Daily	DataStream
TED Spreads	Daily	FRED
US Consumer Confidence	Monthly	DataStream
US Leading Economic Indicators	Monthly	DataStream
US Treasury Rates (1m – 30 years)	Daily	FRED
VIX index	Daily	FRED
Voice and Accountability	Annual	World Bank

calculated to create FX Return Volatility.[1] Furthermore, a FX Real Return Indicator is created in an attempt to capture currencies as either strengthening or weakening. This indicator equals

[1] This equals zero if a pegged currency.

one if $Annual\ FX\ Return_{i,t} - (Inflation_{i,t} - U.S.Inflation_t)$ is positive and equals zero if it is negative or the country has a pegged currency.[1]

Moreover, a hyperinflation dummy variable is calculated for nations with >20% inflation to account for currency crises. The necessity of this variable has been informed by research into the large influence of currency crises on default risk (Reinhart, 2002), albeit this was just for emerging markets. The Banks CDS Spread is calculated as the average five-year CDS spreads for the twelve largest CDS market makers.[2] This method of calculating counterparty spreads is adopted from the International Monetary Fund's (2013) research into sovereign credit spread determinants.

4.4. Data Cleaning Process

Any SCDS spreads over 20% are removed from the dataset which also removes any datapoints where a country was in default. Each of the variables is then observed in an attempt to identify potential outliers or errors. Windsorising certain variables was considered but would have resulted in too many datapoints being omitted due to the large number of variables. Some countries have few observations for SCDS data which is not ideal for panel data, particularly when seeking to adopt country FE. As such, a separate database has also been created for robustness checks which excludes countries with 5 or less observations. This reduces the number of countries to 81. To ensure validity of data, the entire data compiling process is repeated three times and excel functions are used to ensure that each data point is identical. In

[1] This is a novel technique employed in this thesis. In the dummy variable calculation inflation is relative to the U.S. inflation rate as currency rates are exchange rates that are given in Country Currency/USD. Hence, this variable seeks to capture whether the currency of a nation has strengthened in real relative terms.

[2] Bank of America, Barclays, BNP Paribas, Citi, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Royal Bank of Scotland, Société Générale, and Wells Fargo.

addition, many randomised checks are conducted to ensure that errors have not made in the multiple data collecting, transposing, and organising processes.

4.5. Data Representativeness

It is essential for this study that the panel data is representative of different country categories and across the sample period. This is so that biases are avoided and to enable analysis of the full range of potential effects. Table 2 below summarises the number of countries with all data available in each year (a 'full observation') and are therefore used in regressions.

Table 2. Representation by Year

This table reports the number of countries each year for which all data points necessary for the study (a 'full observation') are available. This therefore presents the number of observations in each year used for regressions.

Year	Count	%
2018	82	8.1%
2017	81	8.0%
2016	80	7.9%
2015	76	7.5%
2014	77	7.6%
2013	77	7.6%
2012	78	7.7%
2011	77	7.6%
2010	78	7.7%
2009	77	7.6%
2008	75	7.4%
2007	75	7.4%
2006	73	7.2%
2005	5	0.5%
2004	4	0.4%
Total	**1015**	**100.0%**

Observing Table 2 above it can be seen that, from 2006 onwards, there is a steady marginal increase in observations. This indicates a slight weighting towards more recent years in regression models used in this thesis. This is not a material concern and, if anything, could be

viewed as optimal. Low observations in 2004-05 are driven by the inclusion of the Overall Economic Risk variable which only has 9 observations over these two years.

Representation by country classification (G7, OECD and Neither) is also tested. G7 countries account for 8.9% of observations, OECD countries 36.6%, and Neither 54.6% (90, 371 and 554 observations respectively). Note that above the 'OECD' classification refers to countries that are in the OECD but not a G7 country. These figures indicate that there is significant data from the three broad types nations. If developing countries were not adequately represented then this would pose a limitation to this study but this is not the case.

In addition, it is necessary to have a sample that is representative of different geographical areas. It is also ideal to have many observations of each country in the panel data in order to observe patterns over a sufficient period of time. Further, this ensures that the weightings toward certain countries is not skewed. A summary of representation across these two dimensions is given in Table 3 below.

Given that Africa is the continent with the largest number of countries, Table 3 suggests that it is under-represented. The reason behind this is that Africa contains many under-developed countries which do not have SCDS markets yet. The pricing of such countries would be of interest for this study but is a limitation of studying SCDS markets at this point in time. Europe is the most represented region by a considerable margin which is a slight limitation of this study. Note that countries marked with an asterisk are those excluded from the > 5 observations database and that those countries included in this smaller sample nearly all have 10 or more full observations. This additional database will therefore be useful for robustness checks of whether results are sensitive to country-level representation.

Table 3. Representation by Continent/Region & by Country

This table presents the number of 'Full Observations' for each country in the sample that are used in regressions. Countries are organised in columns by Continent/Region, with the total amount of 'Full Observations' given in the second last row of the bottom section. The final row reports the representation percentages of each Continent/Region in the sample.

Africa	Asia	Europe	Latin America	North America	Oceania
Algeria (11)	Azerbaijan* (1)	Argentina (8)	Barbados* (2)	Canada (12)	Australia (13)
Angola (9)	Bahrain (13)	Austria (13)	Brazil (13)	United States (13)	New Zealand (13)
Egypt (15)	China (13)	Belgium (13)	Chile (13)		
Ethiopia* (3)	Fiji* (1)	Bulgaria (13)	Colombia (13)		
Ghana (10)	India (7)	Croatia (13)	Costa Rica (13)		
Jamaica (13)	Indonesia (13)	Cyprus (13)	Dominican Republic (13)		
Kenya* (3)	Israel (13)	Czech Republic (13)	Ecuador* (3)		
Morocco (15)	Japan (13)	Denmark (13)	El Salvador (13)		
Nigeria (12)	Jordan (11)	Estonia (13)	Guatemala (13)		
South Africa (15)	Kuwait* (2)	Finland (13)	Mexico (13)		
Tunisia (10)	Lebanon (13)	France (13)	Panama (13)		
Zambia* (1)	Malaysia (13)	Georgia* (3)	Peru (13)		
	Oman (9)	Germany (13)	Trinidad and Tobago (13)		
	Pakistan (13)	Greece (10)	Uruguay (7)		
	Phillipines (13)	Hungary (13)			
	Qatar (13)	Iceland (13)			
	Russia (13)	Ireland (13)			
	Saudi Arabia (12)	Italy (13)			
	Singapore (6)	Kazakhstan (13)			
	South Korea (13)	Latvia (13)			
	Sri Lanka (11)	Lithuania (13)			
	Thailand (13)	Malta (10)			
	United Arab Emirates (9)	Netherlands (13)			
	Vietnam (13)	Norway (13)			
		Poland (13)			
		Portugal (13)			
		Romania (13)			
		Serbia (13)			
		Slovakia (13)			
		Slovenia (13)			
		Spain (13)			
		Sweden (13)			
		Switzerland (10)			
		Turkey (13)			
		Ukraine (10)			
		United Kingdom (13)			
Total **117**	**251**	**441**	**155**	**25**	**26**
% **11.5%**	**24.7%**	**43.4%**	**15.3%**	**2.5%**	**2.6%**

4.6. Data Analysis

Data analysis is an important step to provide context of the data, consider how it is measured, and to inform interpretation of results. The explanatory variables are broken down into three broad categories. Firstly, global variables, which are common factors of markets impacting all countries. These variables are thought to primarily impact SCDS spreads through default risk premia and market frictions but can also influence default and recovery value expectations of

countries. Secondly, country-specific fundamentals are variables associated with the underlying financial and economic position of a sovereign. They are thought to predominantly influence the estimated default probability and expected recovery value of a nation. Thirdly, country-specific trust variables are the primary variables of interest for this study. As trust cannot be directly measured, these variables are those predicted to be significantly correlated with the underlying trust that influences investor behaviours. The selection of these variables was discussed in Section 3.3. Summary statistics of these variables, as well as the Document Clause Dummy Variables, are provided in Table 4 on the next page.

Four of the country-specific trust variables in Table 4 - Control of Corruption, Government Effectiveness, Rule of Law & Voice and Accountability - are part of the Worldwide Governance Indicators provided by the World Bank Group. These variables generally range from -2 to 2.5 and have a mean of 0.5. The Financial Indicators of Development, Institutions, Markets, and Markets Efficiency are provided by the International Monetary Fund (IMF).[1] These measures range from 0 to 1. The reason why GDP is considered a trust variable in the context of this thesis is because it is seeking to capture a potential 'Size Effect', whereby larger economies are inherently trusted more due to their larger global presence and influence. We aim for it to capture this effect by already controlling for Gross Debt-to-GDP, Real GDP Growth, and Overall Economic Risk as country-specific fundamentals. Given the large range of values and a significant skew for GDP, a log transformation may need to be applied in regressions. The same can be said for GDP per capita.

The Political Stability ratings calculated by Oxford Economics, sourced through DataStream, range from 2.5 to 7 with an average of 4.5 and a standard deviation of 1. Sovereign Default

[1] Financial Institutions and Markets are the two sub-components of Financial Development, and Financial Markets Efficiency is one of three sub-components of Financial Markets (depth, access, and efficiency). They are calculated by the IMF.

Table 4. Summary Statistics

This table reports the summary statistics (mean, median, standard deviation, minimum, and maximum) for all variables considered for analysis in regressions. These figures all relate to annual data from the sample. Original sources of data and their original reported frequency can be found in Table 1. Document Clause Dummy Variables are calculated as described in section 4.2.

Global

	3 month LIBOR-OIS Spread	*Baa-AAA Spread*	*Banks CDS Spreads*	*Global Liquidity Indicator*	*High Yield Spread*	*MSCI All World Return*	*OECD Consumer Confidence*	*OECD Leading Economic Indicators*	*S&P500 Return*	*TED Spread*	*US Consumer Confidence*	*US Leading Economic Indicators*	*US Treasury 1m Yield*	*US Treasury 3m - 1m spread*	*US Treasury 1y - 3m spread*	*US Treasury 5y - 1y spread*	*US Treasury 10y - 5y spread*	*US Treasury 30y - 10y spread*	*VIX*
Mean	0.30%	1.09%	0.95%	48.14	5.70%	5.48%	99.62	100.14	7.50%	0.47%	84.95	94.38	1.04%	0.05%	0.21%	0.90%	0.73%	0.71%	18.96
Median	0.23%	1.02%	0.98%	44.77	5.37%	8.46%	99.82	100.34	11.20%	0.34%	86.90	95.49	0.11%	0.03%	0.16%	0.99%	0.85%	0.76%	16.67
Standard Deviation	0.25%	0.37%	0.51%	7.15	2.43%	12.97%	1.15	1.18	12.61%	0.36%	26.22	9.06	1.57%	0.04%	0.12%	0.58%	0.42%	0.35%	6.49
Minimum	0.08%	0.69%	0.11%	40.68	3.26%	-23.33%	97.65	97.00	-22.29%	0.20%	45.23	77.00	0.02%	0.01%	0.07%	-0.19%	0.04%	0.09%	11.09
Maximum	1.09%	1.98%	1.89%	61.29	11.64%	22.47%	101.10	102.20	20.24%	1.55%	130.13	109.70	4.74%	0.19%	0.52%	1.74%	1.28%	1.14%	32.69
Count	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**

Country-Specific Fundamentals

	SCDS Spread	*Commodity TOT*	*Commodity TOT Return*	*Commodity TOT Vol*	*Current Account*	*FX Pegged Dummy*	*FX Real Return Indicator*	*FX Return Volatility*	*Gross Debt/GDP*	*Inflation*	*HyperInflation Dummy*	*MSCI Country/ World Return*	*MSCI Country/ Regional Return*	*Net Lending/ GDP*	*Overall Economic Risk*	*Real GDP Growth*	*Reserves ($US bn)*	*Reserves/ Gross Debt*
Mean	1.89%	99.82	0.10%	1.72	-0.52%	0.10	0.35	1.12%	55.71%	3.87%	0.02	4.74%	4.40%	-2.06%	4.21	3.22%	106.17	64.54%
Median	1.19%	100.29	-0.04%	0.95	-1.39%	0.00	0.00	1.04%	44.89%	2.83%	0.00	6.24%	2.12%	-2.50%	4.18	3.08%	23.58	28.29%
Standard Deviation	2.05%	4.09	2.96%	2.23	7.59%	0.30	0.48	0.96%	37.34%	4.09%	0.14	20.90%	22.87%	5.52%	1.32	3.62%	355.54	122.07%
Minimum	0.02%	68.27	-24.64%	0.02	-28.84%	0.00	0.00	0.00%	3.09%	-4.87%	0.00	-61.29%	-61.29%	-32.03%	1.83	-14.84%	0.22	0.09%
Maximum	16.50%	110.32	14.37%	15.91	38.30%	1.00	1.00	14.59%	233.53%	34.28%	1.00	183.41%	183.41%	37.41%	7.92	28.08%	3938.37	1080.17%
Count	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**

Country-Specific 'Trust' Variables

	Control of Corruption	*Financial Development*	*Financial Institutions*	*Financial Markets*	*Financial Markets Efficiency*	*GDP (USD$bn)*	*GDP per capita (USD)*	*Government Effectiveness*	*Risk Rating - Political Stability*	*Rule of Law*	*Sovereign Default Indicator (12=default)*	*Voice and Accountability*
Mean	0.42	0.49	0.55	0.40	0.40	843.49	22005.73	0.59	4.72	0.47	0.26	0.36
Median	0.19	0.47	0.52	0.38	0.27	214.06	13889.79	0.46	4.57	0.41	0.00	0.55
Standard Deviation	1.00	0.22	0.20	0.27	0.38	2225.00	21019.12	0.83	1.01	0.92	1.34	0.93
Minimum	-1.44	0.10	0.16	0.00	0.00	4.72	790.82	-1.22	2.53	-1.27	0.00	-1.91
Maximum	2.47	0.98	1.00	0.96	1.00	20611.88	102576.68	2.44	6.92	2.10	11.00	1.74
Count	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**

Document Clause Dummy Variables

	Doc CR	*Doc CR14*	*Doc MM*	*Doc MR*	*Doc MR14*	*Doc XR*
Mean	0.49	0.29	0.08	0.10	0.00	0.04
Median	0.44	0.00	0.00	0.00	0.00	0.00
Standard Deviation	0.37	0.41	0.14	0.17	0.05	0.09
Minimum	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	1.00	1.00	0.50	1.00	0.50	0.39
Count	**1015**	**1015**	**1015**	**1015**	**1015**	**1015**

Indicators are calculated using sovereign default dates provided by Moody's Corporation and accessed through DataStream. An indicator of twelve indicates that a country is in default, eleven for a country one year out of default, ten for a country two years out of default etc. This indicator is cut off at zero once a county has gone twelve years without default. The motivation for including this variable comes from the analysis of Reinhart, et al. (2003) which argued that history of default risk is impactful on estimated future default risk. The dummy variable calculation methodology is taken from Hilscher & Nosbusch (2010). However, in this thesis it is reversed[1] to make interpretation of estimated coefficients more intuitive. It can also be seen in the bottom right of Table 4 that most of the SCDS document clauses are CR and CR14.

With such a large amount of potential explanatory variables, multicollinearity issues are a potential concern. As such, the correlations between variables are analysed to identify variables which may lead to such issues. A correlation matrix of all variables considered is given in Table 5 on the following page. If there exists significant correlations between two variables, then they are likely accounting for the same underlying factors and thus do not both need to be included in regressions for the study. For example, the High Yield Spread and Baa-AAA Spread have a positive correlation of 0.96, which would make sense as they are very similar measures of the U.S. corporate bond market. Both measures have been found to be significant explanators of sovereign credit pricing in previous studies but including both would be counterproductive.

Figure 4 on page 40 presents scatterplot analyses of selected explanatory variables against SCDS spreads with both linear (red) and exponential (green) lines of best fit. This process is conducted for all explanatory variables being considered, and for polynomial and logarithmic lines of best fit. In nearly all cases the exponential lines of best fit result in the highest R squared.

[1] Hilscher & Nosbusch (2010) had zero as a default year and twelve as twelve years without default, whereas it is the converse in this study.

Table 5. Correlations Matrix

This table reports the correlation coefficients of variables considered for analysis. *** denotes an absolute correlation above 0.9, ** denotes an absolute correlation above 0.8, and * denotes an absolute correlation above 0.7. All variables are of annual frequency from the sample. Original reported frequency and source of variables can be found in Table 1.

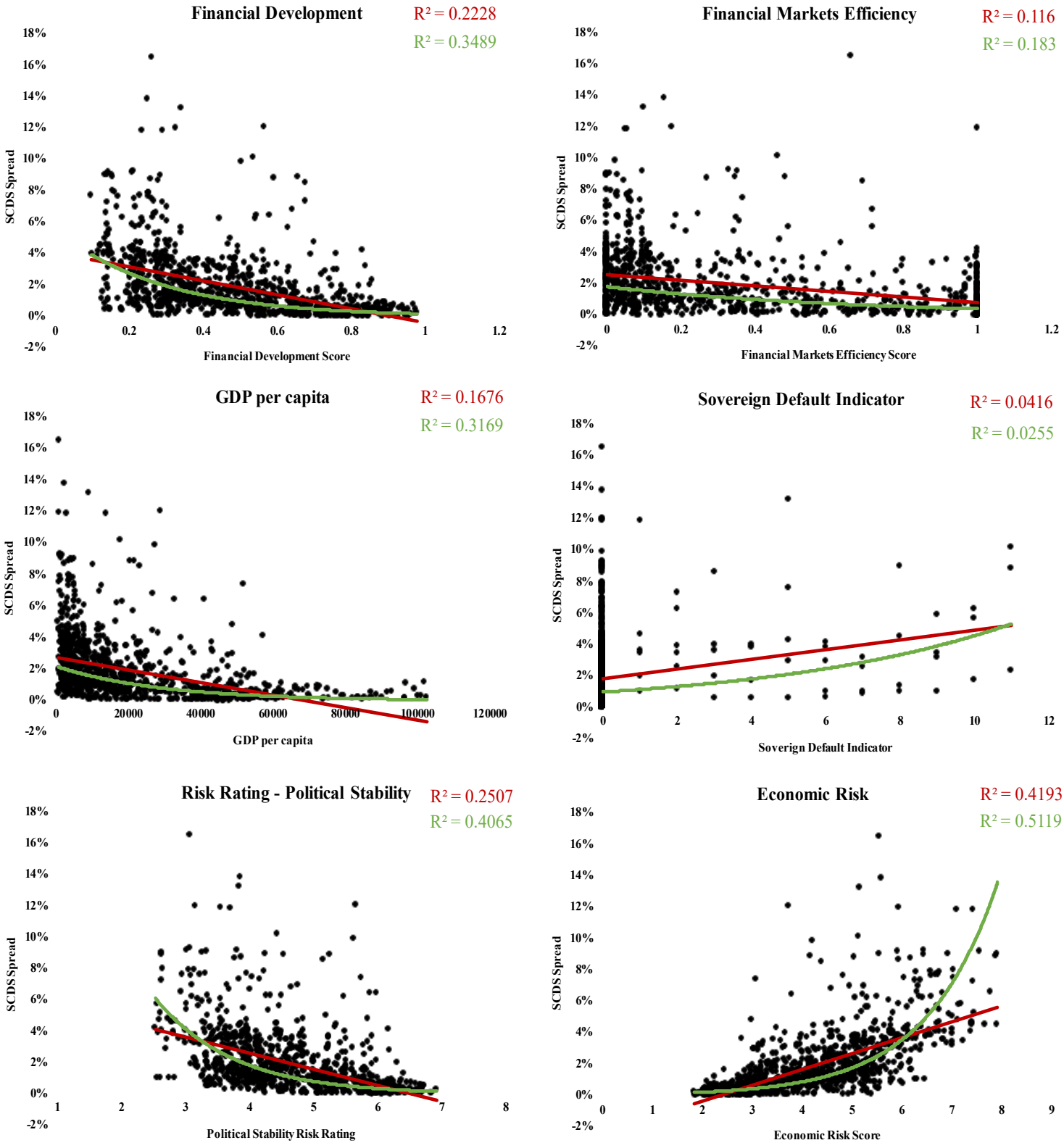
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
1 SCDS Spread																																									
2 3 m LIBOR-OIS Spread	0.07																																								
3 Baa-AAA Spread	0.15	0.74*																																							
4 Banks CDS Spreads	0.27	0.22	0.5																																						
5 Commodity TOT Return	-0.01	-0.01	-0.07	-0.03																																					
6 Commodity TOT Vol	0.07	0.03	-0.02	-0.07	0.1																																				
7 Control of Corruption	-0.46	0.01	0.03	0.02	-0.01	-0.19																																			
8 Current Account	-0.25	-0.06	-0.04	0.02	0.2	0.26	0.22																																		
9 Financial Development	-0.47	0.02	0.04	0.01	-0.03	-0.21	0.72*	0.22																																	
10 Financial Institutions	-0.43	-0.01	0	0.03	-0.03	-0.34	0.74*	0.05	0.88**																																
11 Financial Markets	-0.43	0.04	0.05	-0.01	-0.02	-0.08	0.59	0.32	0.94***	0.66																															
12 FMs Efficiency	-0.34	0.11	0.1	0.01	-0.03	-0.17	0.37	0.24	0.76*	0.48	0.85**																														
13 GDP (USD$bn)	-0.2	0	-0.02	0.01	-0.01	-0.15	0.16	0.04	0.41	0.31	0.41	0.44																													
14 GDP per capita (USD)	-0.41	0.01	0	0.06	0.01	0.02	0.84**	0.37	0.72*	0.66	0.66	0.42	0.22																												
15 Global Liquidity Indicator	-0.09	0.54	0.52	-0.07	0	-0.02	0.02	-0.04	0.04	-0.03	0.09	0.14	-0.04	-0.03																											
16 Government Effectiveness	-0.5	0	0.03	0.02	-0.04	-0.23	0.95***	0.24	0.77*	0.79*	0.64	0.42	0.2	0.81**	0.02																										
17 Gross Debt/GDP	0.04	-0.08	-0.08	0.01	-0.01	-0.13	0.22	-0.07	0.27	0.31	0.21	0.15	0.24	0.25	-0.18	0.25																									
18 High Yield Spread	0.19	0.69	0.96***	0.6	-0.06	-0.03	0.03	-0.03	0.03	0.01	0.05	0.09	-0.01	0.01	0.42	0.03	-0.06																								
19 Inflation	0.32	0.26	0.13	0.01	-0.01	0.18	-0.34	-0.14	-0.35	-0.42	-0.25	-0.12	-0.12	-0.33	0.24	-0.38	-0.15	0.1																							
20 MSCI All World Return	-0.17	-0.7*	-0.89**	-0.45	0.08	-0.01	-0.02	0.04	-0.02	-0.01	-0.02	-0.07	0	0	-0.22	-0.02	0.03	-0.87**	-0.07																						
21 MSCI Country/Regional Return	-0.2	-0.32	-0.49	-0.42	0.12	-0.04	-0.05	0.12	-0.03	-0.08	0.01	0	0.01	-0.05	0.14	-0.05	-0.04	-0.52	0.05	0.65																			
22 Net Lending(Borrowing)/GDP	-0.1	0.03	-0.07	-0.15	0.11	0.12	0	0.13	-0.11	-0.07	-0.13	-0.09	-0.11	-0.02	0.11	0	-0.36	-0.12	-0.03	0.09	0.13																			
23 OECD CC	-0.21	-0.55	-0.76*	-0.8**	0.03	0.1	-0.03	0	-0.03	-0.01	-0.04	-0.08	0.01	-0.04	-0.4	-0.03	0.07	-0.83**	-0.13	0.6	0.37	0.09																	
24 OECD LEI	-0.24	-0.45	-0.81**	-0.65	0.07	0.04	-0.02	0	-0.01	-0.02	-0.01	-0.03	0	-0.01	0	-0.02	-0.01	-0.88**	0.01	0.86**	0.62	0.17	0.71*																	
25 Overall Economic Risk	0.65	0	-0.01	0.03	-0.02	0.11	-0.79*	-0.4	-0.74*	-0.69	-0.66	-0.48	-0.24	-0.76*	-0.07	-0.84**	-0.11	0	0.48	-0.01	-0.02	-0.08	0	-0.02															
26 Real GDP Growth	-0.1	-0.12	-0.29	-0.27	0.05	-0.06	-0.22	-0.05	-0.22	-0.25	-0.17	-0.1	-0.03	-0.23	0.1	-0.22	-0.23	-0.34	0.12	0.33	0.35	0.24	0.26	0.44	0.15														
27 Reserves ($US bn)	-0.13	-0.02	-0.02	0.02	-0.01	-0.04	-0.04	0.13	0.18	0.08	0.23	0.32	0.49	0	-0.06	0.01	0.09	-0.01	-0.05	0	0.01	-0.03	0	-0.01	-0.07	0.1													
28 Reserves/Gross Debt	-0.04	0.08	0.09	0.01	-0.04	0.33	-0.18	0.16	-0.18	-0.23	-0.12	-0.05	-0.09	-0.14	0.11	-0.18	-0.4	0.07	0.17	-0.05	0.01	0.29	-0.07	-0.03	0.05	0.04	0.12												
29 Risk Rating - Political Stability	-0.5	0	0.02	0.01	-0.04	-0.23	0.94***	0.23	0.77*	0.79*	0.64	0.41	0.2	0.81**	0.01	0.99***	0.26	0.02	-0.39	-0.01	-0.05	0	-0.02	-0.01	-0.84**	-0.22	0.01	-0.18											
30 Rule of Law	-0.47	0	0.01	0.02	-0.02	-0.22	0.96***	0.19	0.75*	0.78*	0.61	0.41	0.18	0.82**	-0.01	0.96***	0.26	0.02	-0.36	-0.02	-0.06	-0.01	-0.02	-0.02	-0.82**	-0.22	-0.06	-0.19	0.96***										
31 S&P500 Return	-0.1	-0.76*	-0.91***	-0.25	0.07	-0.02	-0.02	0.05	-0.03	0	-0.05	-0.09	0.01	0.02	-0.47	-0.02	0.07	-0.86**	-0.12	0.94***	0.51	0.04	0.55	0.75*	0.02	0.26	0.02	-0.07	-0.01	-0.01									
32 TED Spread	-0.06	0.89**	0.56	-0.11	0	0.05	0.01	-0.07	0.03	-0.02	0.06	0.12	-0.02	-0.01	0.76*	0	-0.12	0.45	0.28	-0.46	-0.08	0.13	-0.32	-0.1	-0.03	0.06	-0.04	0.1	0	-0.01	-0.63								
33 US CC	-0.19	-0.33	-0.68	-0.76*	0.04	0.12	-0.04	-0.01	-0.03	-0.01	-0.04	-0.08	0.01	-0.03	-0.42	-0.04	0.07	-0.76*	-0.08	0.45	0.27	0.1	0.94***	0.62	0.01	0.22	0.01	-0.07	-0.02	-0.02	0.41	-0.15							
34 US LEI	-0.19	-0.24	-0.66	-0.76*	0.04	0.12	-0.03	-0.02	-0.03	-0.02	-0.04	-0.06	0.01	-0.02	-0.37	-0.04	0.06	-0.76*	-0.04	0.43	0.27	0.13	0.9**	0.66	0.01	0.26	0.01	-0.06	-0.02	-0.02	0.39	-0.05	0.98***						
35 US Treasury 10y - 5y spread	0.23	0.08	0.36	0.83**	-0.02	-0.13	0.02	0.04	0.01	0.03	0	0.01	0.01	0.06	-0.01	0.03	0.01	0.52	-0.01	-0.21	-0.25	-0.15	-0.81**	-0.52	0.02	-0.24	0.02	0.02	0.02	0.02	-0.06	-0.2	-0.87**	-0.87**					
36 US Treasury 1m Yield	-0.27	0	-0.2	-0.73*	0.03	0.06	-0.01	-0.03	0.01	-0.04	0.04	0.05	-0.03	-0.06	0.53	-0.02	-0.11	-0.4	0.12	0.32	0.45	0.21	0.47	0.6	-0.07	0.32	-0.05	0.04	-0.01	-0.03	0.05	0.4	0.46	0.5	-0.76*				
37 US Treasury 1y - 3m spread	0.03	0.69	0.5	-0.09	0.01	0.1	-0.03	-0.05	-0.01	-0.03	0	0.04	0	-0.03	0.13	-0.03	0	0.47	0.12	-0.59	-0.28	-0.02	-0.06	-0.38	0.01	-0.14	-0.01	0.01	-0.02	-0.02	-0.63	0.53	0.11	0.13	-0.24	-0.04			
38 US Treasury 30y - 10y spread	0.25	-0.08	0.21	0.86**	-0.03	-0.1	0.02	0.04	0	0.03	-0.02	-0.03	0.01	0.06	-0.25	0.02	0.05	0.38	-0.07	-0.16	-0.28	-0.16	-0.66	-0.48	0.04	-0.22	0.03	-0.01	0.01	0.02	0.06	-0.36	-0.72*	-0.73*	0.94***	-0.85**	-0.32		
39 US Treasury 3m - 1m spread	-0.06	0.4	0.08	-0.34	0.07	0.12	-0.04	-0.03	-0.03	-0.04	-0.02	0	0	-0.04	-0.02	-0.05	0.01	0.02	0.13	-0.18	0.02	0.05	0.27	-0.04	0.01	0	-0.01	-0.03	-0.03	-0.04	-0.28	0.34	0.47	0.48	-0.55	0.28	0.75*	-0.58	
40 US Treasury 5y - 1y spread	0.21	0.07	0.36	0.57	-0.03	-0.11	0.01	0.03	0.01	0.03	-0.01	0	0.01	0.04	-0.17	0.03	0.05	0.56	-0.08	-0.34	-0.36	-0.2	-0.58	-0.61	0.03	-0.32	0.03	-0.01	0.02	0.03	-0.19	-0.27	-0.65	-0.69	0.81**	-0.83**	0.08	0.72*	-0.34
41 VIX	0.14	0.76*	0.9**	0.53	-0.03	-0.05	0.02	-0.03	0.04	0	0.06	0.12	-0.01	0.01	0.61	0.02	-0.09	0.91***	0.18	-0.73*	-0.37	-0.06	-0.82**	-0.65	-0.01	-0.23	-0.02	0.08	0.02	0.01	-0.77*	0.57	-0.75*	-0.71*	0.48	-0.22	0.46	0.26	0.02
42 Voice and Accountability	-0.29	0	0.01	0.01	-0.03	-0.47	0.74*	-0.07	0.51	0.7	0.29	0.18	0.07	0.56	0.01	0.72*	0.28	0.01	-0.3	-0.01	-0.03	-0.01	-0.01	0	-0.54	-0.19	-0.22	-0.33	0.72*	0.75*	-0.01	0.01	-0.01	-0.01	0	0	-0.02	0	-0.03

This is supportive of the non-linear relationships hypothesised in Figure 2 and would suggest that a log transformation of the SCDS spreads may be optimal when running regressions. The variables presented below are those of primary interest for this non-linearity. More scatterplots are available in Figure A.1.

The scatterplots additionally show promising preliminary results. Once non-linearity is accounted for Overall Economic Risk, Political Stability, and Financial Development explain a significant portion of variation in SCDS spreads. In addition, all lines of best fit, including those in Figure A.1., are of the anticipated slope.

Figure 4. Scatterplot Analysis

Scatterplots of variables from the samples and their associated SCDS spread (matched by country and year). Two lines of best fit are displayed, and their R squared are presented in the top right of each plot. Red represents a linear line of best fit and green an exponential line of best fit.



Chapter 5. Regression Outputs

The primary purpose of this chapter is to ensure that we are empirically accounting for standard factors of sovereign credit identified in previous literature. Whilst it is not directly related to this thesis' hypotheses, the ensuing analysis is necessary to enable inferences that results carry implications of investor preferences and beliefs. Consequently, this chapter is computationally intensive and covers a wide scope of variables. It commences by running linear and log regressions, before applying further non-linear transformations, and then experimenting with year FE. Despite this work being imperative to the validity of this study and its implications, the less avid reader may be inclined to skip to Chapter 6 which discusses the main results.

Furthermore, moving from Chapter 4 several variables collected have been excluded from analysis in these regressions. Appendix A details the process and rationale behind doing so. If concerned that certain determinants of SCDS spreads have not been accounted for in this thesis, reading this section may alleviate such concerns.

5.1. Baseline Linear Regressions

The first stage of results is a standard linear regression. The main purpose of this section is to identify the associations between explanators and SCDS spreads, and to verify that they are consistent with previous literature. This allows for a review of standard SCDS pricing determinants whilst adding a layer of validation to this study. The aim is that the additional 'Trust Variables' will explain spread variation above and beyond rational variables seeking to account for default probability, expected recovery, risk premia, and market frictions. The outputs of these linear regressions for several different parameterisations are presented in Table

Table 6. Baseline Linear Regression Output

This table presents the outputs of linear regressions of SCDS Spreads against the explanatory variables in the left column and Document Clause Dummy Variables which have been omitted from the table. The eight specifications in each column vary by including/not including Overall Economic Risk, Country FE, and a 'political stability breakdown'. Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors.

SCDS Spread	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. Obvs	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015
Adj R^2	0.488	0.496	0.560	0.560	0.709	0.710	0.721	0.721
Root MSE	1.466	1.455	1.359	1.359	1.107	1.103	1.083	1.083
cons	-2.18	.409	9.812	9.029	56.466 **	56.367 **	58.571 **	58.728 **
	(28.761)	(28.712)	(26.672)	(26.832)	(23.86)	(23.844)	(23.346)	(23.414)
High Yield Spread	.169	.106	-.201	-.192	-.444 **	-.558 ***	-.604 ***	-.665 ***
	(.241)	(.24)	(.225)	(.226)	(.199)	(.201)	(.196)	(.198)
Banks CDS Spread	.553 ***	.521 **	.702 ***	.692 ***	.532 ***	.505 ***	.623 ***	.592 ***
	(.208)	(.207)	(.194)	(.194)	(.164)	(.165)	(.161)	(.163)
Global Liquidity Indicator	-.033	-.022	-.003	-.004	.08 **	.092 **	.083 **	.092 **
	(.044)	(.044)	(.041)	(.041)	(.036)	(.037)	(.036)	(.036)
SP500 Return	.008	.005	-.017	-.017	-.015	-.027	-.028	-.034 *
	(.022)	(.022)	(.021)	(.021)	(.018)	(.018)	(.017)	(.018)
OECD LEI	.109	.04	-.095	-.091	-.535 **	-.585 **	-.585 **	-.62 **
	(.299)	(.299)	(.278)	(.28)	(.249)	(.249)	(.244)	(.245)
US T 1yt3m	-.54	-.706	1.168	1.062	.649	.699	1.746 **	1.684 **
	(.881)	(.876)	(.828)	(.831)	(.717)	(.715)	(.722)	(.722)
US T 10yt5y	.225	.446	.883	.884	1.498 ***	1.888 ***	1.776 ***	2.007 ***
	(.598)	(.596)	(.556)	(.558)	(.489)	(.495)	(.48)	(.486)
Current Account	-.011	-.014 *	.015 **	.013 *	.014	.016 *	.031 ***	.031 ***
	(.007)	(.008)	(.007)	(.007)	(.009)	(.009)	(.009)	(.009)
FX Real Return Indicator	-.416 ***	-.417 ***	-.323 ***	-.324 ***	-.125	-.177 *	-.1	-.136
	(.116)	(.115)	(.108)	(.108)	(.096)	(.097)	(.094)	(.095)
FX Return Volatility	-.074	-.043	-.142 ***	-.128 **	.069	.085 *	.024	.036
	(.058)	(.058)	(.054)	(.055)	(.051)	(.051)	(.051)	(.051)
FX Pegged Dummy	-.681 ***	-.873 ***	-.444 **	-.544 ***	-.897	-.749	-.726	-.623
	(.196)	(.212)	(.182)	(.2)	(1.169)	(1.167)	(1.144)	(1.146)
Gross Debt/GDP	.007 ***	.008 ***	.004 ***	.005 ***	.022 ***	.021 ***	.019 ***	.019 ***
	(.002)	(.002)	(.001)	(.001)	(.004)	(.004)	(.004)	(.004)
Inflation	.091 ***	.089 ***	.019	.02	.03	.032 *	.005	.007
	(.017)	(.017)	(.017)	(.017)	(.019)	(.019)	(.019)	(.019)
Hyperinflation Dummy	.255	.3	.397	.399	.216	.233	.17	.194
	(.43)	(.427)	(.399)	(.399)	(.359)	(.358)	(.351)	(.352)
MSCI Country/Region Return	-.005	-.005	-.006 **	-.006 **	-.009 ***	-.009 ***	-.009 ***	-.009 ***
	(.003)	(.003)	(.003)	(.003)	(.002)	(.002)	(.002)	(.002)
Net Lending/GDP	.02 **	.022 **	.022 **	.024 **	.028 **	.026 **	.033 ***	.031 ***
	(.01)	(.01)	(.009)	(.009)	(.012)	(.012)	(.011)	(.011)
Real GDP Growth	-.05 ***	-.05 ***	-.044 ***	-.045 ***	-.041 ***	-.047 ***	-.044 ***	-.047 ***
	(.016)	(.016)	(.015)	(.015)	(.015)	(.015)	(.014)	(.015)
Reserves/Gross Debt	-.001	-.001	0.00013	0.00014	.001	.001	.001	.001
	(.)	(.)	(.)	(.)	(.001)	(.001)	(.001)	(.001)
ln Reserves	-.245 ***	-.309 ***	-.293 ***	-.316 ***	-.069	-.038	-.056	-.033
	(.05)	(.053)	(.047)	(.049)	(.106)	(.106)	(.103)	(.104)
Overall Economic Risk			1.026 ***	.992 ***			.757 ***	.715 ***
			(.08)	(.083)			(.118)	(.122)
Financial Development	.21	.428	.246	.341	-2.552	-2.065	-1.739	-1.55
	(.589)	(.589)	(.545)	(.551)	(1.557)	(1.564)	(1.528)	(1.538)
Financial Markets Efficiency	.427 *	.585 **	.564 **	.591 **	-.127	-.198	-.148	-.18
	(.247)	(.25)	(.23)	(.233)	(.459)	(.458)	(.449)	(.45)
Sovereign Default Indicator	.142 ***	.135 ***	.138 ***	.137 ***	-.026	-.058	-.037	-.057
	(.037)	(.037)	(.034)	(.034)	(.043)	(.044)	(.042)	(.043)
GDP per capita	3.6E-06	3.8E-06	9.4E-06 **	9.6E-06 **	-4E-05 ***	-3E-05 ***	-3E-05 **	-3E-05 **
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
ln GDP	-.169 **	-.16 **	-.03	-.031	-.115	-.103	-.335	-.324
	(.066)	(.066)	(.063)	(.063)	(.301)	(.301)	(.297)	(.298)
Political Stability	-.999 ***		-.145		-.968 ***		-.674 ***	
	(.104)		(.117)		(.246)		(.245)	
Control of Corruption		.601 ***		.183		-.046		.037
		(.201)		(.191)		(.341)		(.335)
Government Effectiveness		-.867 ***		-.108		-.585 *		-.433
		(.232)		(.225)		(.352)		(.346)
Rule of Law		-.946 ***		-.266		-1.294 ***		-.868 **
		(.241)		(.232)		(.433)		(.431)
Voice and Accountability		-.123		-.084		-.181		.043
		(.1)		(.094)		(.356)		(.352)
Country FE					Y	Y	Y	Y

6. As will be the case for the rest of the model outputs in this paper, the estimates for the trust variables are shaded in grey. These variables are the main areas of interest. The same table but without ln GDP is given in Table A.3 to examine potential endogeneity issues between GDP and GDP per capita. The analysis at this stage will focus on the sign and significance of the estimates as there has been no standardisation of the variables such that magnitudes or economic significance can be assessed. Additionally, when reading the analysis it is important to note that an increase in spreads is a worsening of creditworthiness. That is, if something is *positively* associated with spreads then this is a *negative* influence for a nation.

5.1.1. Linear Regression – Control Variables

Based upon the results found in previous literature, global factors are predicted to have a large influence on SCDS spreads. In fact, one study found that most of SCDS spreads were linked to such global factors and that a "single principal component account[ed] for 64 percent of the variation in sovereign credit spreads" (Longstaff, et al., 2011, p. 71). The negative and statistically significant estimates for the High Yield Spread coefficient are unexpected. Theoretically, U.S. corporate bond spreads should be larger during times of higher market uncertainty and this would be associated with higher SCDS spreads. Multiple previous studies into sovereign credit pricing have found this relationship to be true (Bekaert, et al., 2014; Hilscher & Nosbusch, 2010; Maltritz, 2012; Longstaff, et al., 2011; Chen & Chen, 2018). A potential explanation of this could be that the Banks CDS Spread variable is already capturing the risk aversion effect, which these studies did not include, and that this positive estimate is capturing the nature of sovereign debt having a 'flight to safety' element to it (Fontana & Schiecher, 2016). The Banks CDS Spread estimates are positive and significant for all eight specifications. This result is expected (International Monetary Fund, 2013) as SCDS and bank

CDS are influenced largely by the same global factors and are also a form of counter-party risk.[1]

The estimates for the Global Liquidity Indicator are negative and insignificant without country FE, but positive and significant with country FE. This second result is unexpected as higher liquidity is anticipated to be associated with lower SCDS spreads, although this measure of liquidity is very limited. The estimates for the S&P500 return is only significant at the 10% level in specification eight. They are negative estimates, which is supportive of theory that in times of greater market performance SCDS spreads decline. This result is also aligned with findings in previous studies (International Monetary Fund, 2013; Longstaff, et al., 2011). Estimates for the OECD Leading Economic Indicators (LEI) are negative and statistically significant, which is expected as the OECD LEI is meant to represent the anticipated future economic prosperity of OECD member countries. The estimates of the U.S. Treasury Yields are generally positive and statistically significant, particularly once country FE are included. This confirms previous literature which found positive associations between sovereign spreads and short-term interest rates (Gruber & Kamin, 2012; Manganelli & Wolswijk, 2009; Maltritz, 2012) and the U.S. Treasury term slope (Gruber & Kamin, 2012; Doshi, et al., 2017).

With respect to country-specific variables, the estimates for the Current Account coefficient are mostly positive and statistically significant. This is difficult to interpret as the impact of the Current Account on the fiscal position of a country can be very country specific. Previous literature has found both negative associations with sovereign spreads (Baltaci & Akyol, 2016; Hoa Ho, 2016) and mixed results (Ferdinand Heinz & Sun, 2014). The estimates for the FX Real Return Indicator are negative for all models and highly significant for all models without

[1] Interestingly, one study even found that, at the country level, bank and sovereign CDS are cointegrated variables (Avino & Cotter, 2014).

country FE. The negative estimates are expected as a strengthening dollar enables easier repayment of USD debt. A previous study also found a similar relationship with currency return and sovereign credit pricing (Jeanneret, 2018). The estimates for Gross Debt-to-GDP are positive and highly statistically significant for all specifications which is expected as higher debt levels are generally less sustainable. Indeed, much previous literature has highlighted this relationship (International Monetary Fund, 2013; Yalta & Yalta, 2018; Baldacci, et al., 2011; Maltritz, 2012; Hansen & Zegarra, 2016; Jeanneret, 2018; Doshi, et al., 2017).

On the other hand, inflation is only highly statistically significant when Overall Economic Risk (OER) is not included in the model, which indicates that OER is effectively capturing the risks associated with inflation and deflation. The Hyperinflation Dummy is not significant for any of the models, which is surprising as countries in hyperinflationary environment are generally more unstable and hence less able to repay their debt. Again, this is likely captured by OER. The positive association between inflation and sovereign spreads is supported by much previous literature (Baldacci, et al., 2011; Gruber & Kamin, 2012; Jeanneret, 2018; Doshi, et al., 2017), although one study found a negative association (Baltaci & Akyol, 2016).

MSCI Country Return[1] estimates are negative and generally highly statistically significant, which supports the notion and findings that SCDS Spreads decline during times of positive local equity returns (International Monetary Fund, 2013; Naifar, 2020). The positive and significant estimates for Net Lending-to-GDP are also anticipated because, all else being equal, a country which is lending out more money is less likely to be able to repay its debt. Real GDP Growth estimates are negative and highly statistically significant for all models which is expected as stronger performing economies are more likely to be able to repay debt and thus

[1] If an MSCI equity index is not available for a country, the most appropriate MSCI regional equity index is used.

will have lower sovereign spreads (International Monetary Fund, 2013; Baltaci & Akyol, 2016; Ferdinand Heinz & Sun, 2014). Estimates for Reserves-to-Gross Debt are insignificant for all models, but ln Reserves estimates are negative and highly statistically significant for models without country FE. The negative estimates are expected, but the insignificant estimates for Reserves-to-Gross Debt[1] contradicts previous findings (International Monetary Fund, 2013; Baldacci, et al., 2011; Hilscher & Nosbusch, 2010; Hoa Ho, 2016). The OER estimates are all positive and highly statistically significant, which is anticipated. The positive effects of economic risk on sovereign spreads has been found in previous works (Bekaert, et al., 2014; Bekaert, et al., 2016) and is very intuitive.

5.1.2. Linear Regression – Variables Associated with the Hypotheses

Focusing on the parameters of interest, the estimates for Financial Development are negative once accounting for country FE, but also statistically insignificant. This insignificance contradicts the predictions of this thesis, as we anticipate less financially developed countries to be trusted less and hence have higher SCDS Spreads. Financial Development is a combination of the Financial Institutions and Financial Markets scores produced by the IMF. Financial Markets Efficiency is a component of the Financial Markets score and is included as an additional regressor in order to potentially capture any liquidity impacts more explicitly. The outputs however are mostly insignificant and positive which opposes the theory of higher liquidity being related to lower SCDS Spreads. It should be noted however that this is a highly crude estimate of the liquidity of SCDS Markets for countries[2] and there is a very clear

[1] A potential explanation for this, other than the clear endogeneity issue, is that ln Reserves is capturing a 'Size Effect' whereby larger economies, which typically have higher reserves, are generally trusted more and thus are associated with lower SCDS Spreads.

[2] SCDS markets are originated by banks. Hence the liquidity of the SCDS market for a nation does not necessarily align with the efficiency of their local markets. In fact, emerging markets have historically had more liquid SCDS markets.

endogeneity issue with it being a component of the Financial Development variable. If data availability was not an issue, the bid-ask spreads for the SCDS Markets would have been used as it is a more accurate measure.

Sovereign Default Indicator estimates are positive and highly statistically significant for all models without country FE. This supports the notion that countries which have recently defaulted are less trusted, and that this trust effect lasts for a significant period of time. The positive correlation between recent default and sovereign spreads was also found by a study conducted by Yalta & Yalta (2018). The estimates for GDP per capita are both positive and negative across the models and statistically significant for most. They are however all highly statistically significant and negative once country FE are accounted for, which is supportive of predictions. Estimates for ln GDP are all negative which supports the 'Size Effect' already discussed, but it is only statistically significant for two of the models which it is included in. The estimates for Political Stability are all negative and are highly statistically significant for most models. This is in line with the idea that countries with less stable political systems are less likely to be willing or able to repay debt, and that they are trusted less and thus demand higher SCDS spreads in markets. This association between sovereign spreads and political risk or government effectiveness has been found in multiple previous studies (Yalta & Yalta, 2018; Bekaert, et al., 2014; Bekaert, et al., 2016; Baldacci, et al., 2011; Duyvesteyn, et al., 2016).

When political stability is replaced with the four government characteristic indicators, the results are mixed. The generally negative estimates for Government Effectiveness, Rule of Law and Voice and Accountability are anticipated, but the positive control of corruption estimates is surprising. These unexpected results are likely empirically driven by the very high correlation of control of corruption with the other three parameters. Consequently, it is likely representing a statistical offsetting effect rather than any meaningful factors. This collinearity

issue and mixed results of the IMF's Governance Indicators in explaining sovereign spreads has been expressed in previous studies[1] (Yalta & Yalta, 2018; Jeanneret, 2018). Additionally, including country FE increases the adjusted R squared by approximately 15%, which suggests that country FE significantly improves the models and the precision of estimated coefficients.

5.2. Baseline Log Regressions

Preliminary analysis of the data however indicates that a non-linear relationship exists between the explanatory variables and SCDS spreads. As such, Table 7 below presents the outputs of the same regressions as in Table 6, but with a log transformation applied to SCDS spreads and some different explanators (see Table A.2.). For the same table but excluding ln GDP as an explanator to assess endogeneity issues, see Table A.4. Applying the log transformation increases the adjusted R squared by an average of 21% across the 16 specifications - including tables in the Appendix - when compared to the linear regressions. This makes sense given the scatterplots detailed in Figure 4 and is supportive of Hypothesis 2.

Analysis of Table 7 will focus on its differences to Table 6 as the predicted influences of most variables have already been discussed in the previous section. The estimated coefficients for the 3-month LIBOR-OIS Spread[2] are positive and statistically significant for all model specifications. This is anticipated as the LIBOR-OIS Spread has been observed to widen during times of high market stress and volatility which is associated with higher SCDS Spreads. A difference to the linear models is that the estimated coefficient of the Global Liquidity Indicator is not statistically significant in any of the log regressions. As expected, the estimates for OECD

[1] One study of interest also found that higher political risk was associated with higher sovereign spreads, but that this effect was greater when combined with an environment of low-quality regulation or weak rule of law (Hansen & Zegarra, 2016).
[2] LIBOR stands for London Inter-Bank Offered Rate and OIS stands for Overnight Index Swap. The LIBOR-OIS Spread essentially represents the difference between an interest rate with and without some credit risk built in.

Table 7. Baseline Log Regression Output

This table presents the outputs of linear regressions of log(SCDS Spreads) against the explanatory variables in the left column and Document Clause Dummy Variables which have been omitted from the table. The eight specifications in each column vary by including/not including Overall Economic Risk, Country FE, and a 'political stability breakdown'. Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors.

ln SCDS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. Obvs	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015
Adj R^2	0.785	0.795	0.806	0.811	0.877	0.880	0.884	0.885
Root MSE	0.597	0.583	0.567	0.560	0.451	0.447	0.438	0.436
cons	30.022 **	36.058 **	29.087 **	31.583 **	53.797 ***	59.671 ***	47.323 ***	52.014 ***
	(14.824)	(14.568)	(14.075)	(13.992)	(12.434)	(12.409)	(12.121)	(12.163)
3m LIBOR-OIS Spread	.679 ***	.614 ***	.782 ***	.728 ***	.657 ***	.618 ***	.811 ***	.773 ***
	(.211)	(.206)	(.201)	(.199)	(.171)	(.17)	(.167)	(.167)
High Yield Spread	-.143	-.185 **	-.169 *	-.186 **	-.259 ***	-.292 ***	-.265 ***	-.286 ***
	(.093)	(.091)	(.088)	(.088)	(.077)	(.076)	(.075)	(.075)
Banks CDS Spread	.703 ***	.673 ***	.71 ***	.691 ***	.669 ***	.629 ***	.706 ***	.674 ***
	(.145)	(.142)	(.138)	(.136)	(.113)	(.112)	(.11)	(.109)
Global Liquidity Indicator	-.024	-.015	-.021	-.016	.004	.012	.002	.009
	(.022)	(.022)	(.021)	(.021)	(.018)	(.018)	(.017)	(.017)
OECD CC	-.126	-.164	-.105	-.123	-.263 ***	-.298 ***	-.196 **	-.221 ***
	(.104)	(.102)	(.099)	(.098)	(.083)	(.082)	(.081)	(.081)
OECD LEI	-.113	-.164	-.154	-.175	-.219 **	-.259 **	-.235 **	-.264 **
	(.131)	(.129)	(.124)	(.123)	(.107)	(.106)	(.104)	(.104)
US T 1m	-.099	-.121	-.108	-.121 *	-.124 **	-.137 **	-.132 **	-.14 **
	(.076)	(.074)	(.072)	(.071)	(.058)	(.058)	(.057)	(.056)
US T 5yt1y	.394 ***	.391 ***	.379 ***	.373 ***	.383 ***	.39 ***	.386 ***	.395 ***
	(.131)	(.129)	(.125)	(.123)	(.103)	(.102)	(.1)	(.099)
Current Account	.002	.	.011 ***	.008 ***	.01 ***	.011 ***	.018 ***	.019 ***
	(.003)	(.003)	(.003)	(.003)	(.004)	(.004)	(.004)	(.004)
FX Real Return Indicator	-0.166 ***	-0.171 ***	-0.120 ***	-0.128 ***	-0.069 *	-0.087 **	-0.046	-0.058
	0.047	0.046	0.045	0.044	0.039	0.039	0.038	0.038
FX Return Volatility	.053 **	.076 ***	.036	.056 **	.065 ***	.07 ***	.049 **	.051 **
	(.023)	(.023)	(.022)	(.022)	(.021)	(.021)	(.02)	(.02)
FX Pegged Dummy	-.002	-.112	.09	.001	-.552	-.484	-.47	-.423
	(.079)	(.085)	(.076)	(.083)	(.476)	(.473)	(.463)	(.461)
Gross Debt/GDP	.004 ***	.004 ***	.003 ***	.003 ***	.016 ***	.015 ***	.014 ***	.014 ***
	(.001)	(.001)	(.001)	(.001)	(.002)	(.002)	(.001)	(.001)
Inflation	.035 ***	.034 ***	.012	.014 *	.011	.011	.001	.001
	(.007)	(.007)	(.007)	(.007)	(.008)	(.008)	(.008)	(.008)
Hyperinflation Dummy	-.228	-.21	-.184	-.185	-.067	-.047	-.098	-.075
	(.175)	(.171)	(.166)	(.164)	(.146)	(.145)	(.142)	(.142)
MSCI Country/Region Return	.001	.001	.0004	.001	-.001	-.001	-.001	-.001
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Real GDP Growth	-.006	-.006	-.004	-.004	-.007	-.009	-.008	-.008
	(.006)	(.006)	(.006)	(.006)	(.006)	(.006)	(.006)	(.006)
Reserves/Gross Debt	-0.0002	-1E-04	7.2E-05	9E-05	.001 ***	.001 ***	.001 ***	.001 ***
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
ln Reserves	-.022	-.059 ***	-.037 *	-.061 ***	-.015	-.005	-.014	-.006
	(.02)	(.021)	(.019)	(.02)	(.043)	(.043)	(.042)	(.042)
Overall Economic Risk			.344 ***	.308 ***			.339 ***	.324 ***
			(.033)	(.033)			(.047)	(.048)
Financial Development	.77 ***	.891 ***	.755 ***	.841 ***	-1.895 ***	-1.724 ***	-1.666 ***	-1.605 ***
	(.238)	(.235)	(.226)	(.225)	(.628)	(.626)	(.611)	(.611)
Financial Markets Efficiency	.044	.127	.096	.134	.125	.12	.148	.155
	(.101)	(.1)	(.096)	(.096)	(.186)	(.184)	(.181)	(.18)
Sovereign Default Indicator	.07 ***	.066 ***	.071 ***	.067 ***	.01	-.001	.007	.001
	(.015)	(.015)	(.014)	(.014)	(.017)	(.018)	(.017)	(.017)
GDP per capita	-1E-05 ***	-7E-06 ***	-8E-06 ***	-6E-06 ***	2.8E-06	3.6E-06	6.3E-06	6.5E-06
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
ln GDP	-.239 ***	-.235 ***	-.192 ***	-.195 ***	-.828 ***	-.819 ***	-.944 ***	-.932 ***
	(.027)	(.027)	(.026)	(.026)	(.129)	(.128)	(.126)	(.126)
Political Stability	-.641 ***		-.353 ***		-.239 **		-.102	
	(.042)		(.049)		(.1)		(.099)	
Control of Corruption		.194 **		.062		-.057		-.02
		(.081)		(.079)		(.138)		(.135)
Government Effectiveness		-.51 ***		-.273 ***		-.157		-.092
		(.093)		(.093)		(.142)		(.139)
Rule of Law		-.488 ***		-.276 ***		-.597 ***		-.388 **
		(.097)		(.096)		(.175)		(.173)
Voice and Accountability		-.069 *		-.058		.199		.312 **
		(.04)		(.038)		(.144)		(.141)
Country FE					Y	Y	Y	Y

Consumer Confidence (CC) & LEI are all negative, however only around half are statistically significant. This association between consumer confidence levels and sovereign spreads was also found by Doshi, et al. (2007). The negative and mostly significant estimates for the U.S. Treasury 1-month yields are surprising, although the positive and highly statistically significant estimates for the U.S. Treasury 5 year minus 1 year spread are as theory would anticipate.

The estimates for FX Return Volatility are all positive and statistically significant which is different to some of the negative estimates in the linear regressions but in accordance with expectations based on theory and previous studies. The estimated impacts of having a pegged currency are mixed, with some positive and some negative. However, they are all statistically insignificant. Most of the estimates for Reserves-to-Gross Debt are unexpectedly positive and statistically significant, whereas the estimates for ln Reserves are all negative as anticipated and statistically significant for three specifications.

The estimates for Financial Development are mixed in sign but highly statistically significant in all models. The estimates only oppose the predictions of this thesis when country FE are excluded from the model. This suggests that, without accounting for unobserved country heterogeneity, the estimates for Financial Development are heavily biased upwards. As Financial Development scores for a nation do not vary greatly over the sample period, it is likely that they are capturing unobserved heterogeneity without the inclusion of country FE. The estimates for Financial Markets Efficiency are also positive but, as discussed before, its endogeneity to Financial Development and inappropriateness as a SCDS market liquidity measure may be explanations of this unexpected result.

An interesting finding of the log models compared to the linear models is the largely increased significance levels of the document clause coefficient estimates which are not included in the

tables. Given that document clauses generally differ in what constitutes a default event, it would make sense that they influence SCDS Spreads in a non-linear fashion. It should also be noted that all these baseline regressions, both linear and log, have also been ran on the > 5 observations database for a robustness check and produced virtually identical results.

This section has highlighted the importance of accounting for non-linearities in this study. Without this, rational aspects of SCDS spreads would not be properly accounted for and results would be biased. In addition, across both the linear and log models the importance of accounting for country FE is made clear. Much previous literature into sovereign credit pricing determinants does not consider these empirical factors.

5.3. Log Regressions – Variables Removed

A clear issue with the baseline regressions is the large number of variables and thus potential for multicollinearity. To negate these issues, the Governance Indicators are replaced with the Political Stability measure calculated by Oxford Economics - which has a correlation of 0.98 with Government Effectiveness - and the Financial Markets Efficiency variable is removed. In addition, we conduct an iterative variable removal process whereby the least statistically significant variables which are not 'Trust Variables' are removed from the model until adjusted R squared is maximised. This method is known as backward stepwise regression, which is one of multiple regression variable selection methods (IBM, 2016) and the preferred process when dealing with collinearity issues (Heinze, et al., 2018). A potential problem with this backward elimination process is that it has elements of a data mining process and may be overfitting the data (Smith, 2018; Malek, 2007). However, as this process is not being applied to the variables associated with the hypotheses, such a qualm is negated. Rather, this process is designed to create a model as precise as possible outside of the variables of interest in an attempt to capture

the impacts of trust above and beyond standard determinants of SCDS spreads. As log regressions and models with country FE are superior, the starting model used is ‘Model 7’ from Table 7. The resulting regression is given on the left in Table 8 on the following page.

Again, this analysis will not focus on economic significance, as there has been no standardised scaling of variables. Of the primary parameters of interest in the left regression, the slightly positive estimate for GDP per capita contradicts the predictions of this thesis that more developed countries would be associated with higher levels of trust. However, there is a clear empirical explanation for this result. As discussed previously, the inclusion of ln GDP (direct endogeneity) and potential non-linearity may be biasing the estimated coefficient of GDP per capita. This issue is highlighted by the regression equation on the right in Table 8. Upon further analysis of scatterplots, it is clear that log transformations of the explanatory variables GDP per capita and Banks CDS are necessary in order to capture non-linearities. These transformations are applied to the regression equation on the left, and then the iterative variable removal process is repeated to generate the output on the right of Table 8.

The most notable difference between the two regressions is the change in sign and significance of both GDP per capita and GDP estimates. Once applying the log transformation to GDP per capita, it becomes clear that it is the empirical driver of SCDS spread variations and not GDP. This provides evidence for an Economic Development Effect and discredits the Size Effect previously mentioned. This effect has been alluded to in a previous study on risk factors of SCDS returns, where they found a single global risk factor from Jan 2004 - Dec 2014 which explained over half of the variation in returns. In doing so, they observed that “the way countries load on this factor depends not so much on economic fundamentals as on whether

Table 8. Log Regression Output – Variables Removed

This table presents the outputs of linear regressions of log(SCDS Spreads) against the explanatory variables in the left columns and country FE. The regression on the right was created by taking the regression on the left, applying a log transformation to Banks CDS spreads and GDP per capita, and then removing US T 1m and the CR14 Dummy Variable. Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors.

ln SCDS			ln SCDS		
No. Obvs	1,015		**No. Obvs**	1,015	
Adj R^2	0.885		**Adj R^2**	0.886	
Root MSE	0.437		**Root MSE**	0.435	
cons	48.517	***	**cons**	80.636	***
	(9.12)			(8.022)	
3m LIBOR-IS Spread	.8	***	**3m LIBOR-IS Spread**	.252	**
	(.161)			(.12)	
High Yield Spread	-.254	***	**High Yield Spread**	-.272	***
	(.038)			(.033)	
Banks CDS Spread	.699	***	**ln Banks CDS Spread**	.55	***
	(.109)			(.052)	
OECD CC	-.22	***	**OECD CC**	-.448	***
	(.076)			(.063)	
OECD LEI	-.224	***	**OECD LEI**	-.249	***
	(.045)			(.04)	
US T 1m	-.12	***			
	(.045)				
US T 5yt1y	.386	***	**US T 5yt1y**	.284	***
	(.098)			(.044)	
Current Account	.018	***	**Current Account**	.022	***
	(.003)			(.004)	
FX Real Return Indicator	-.051		**FX Real Return Indicator**	-.068	*
	(.036)			(.036)	
FX Return Volatility	.052	**	**FX Return Volatility**	.058	***
	(.02)			(.02)	
Gross Debt/GDP	.014	***	**Gross Debt/GDP**	.012	***
	(.001)			(.002)	
Real GDP Growth	-.008		**Real GDP Growth**	-.007	
	(.006)			(.006)	
Reserves/Gross Debt	.001	***	**Reserves/Gross Debt**	.001	**
	(.)			(.)	
Overall Economic Risk	.338	***	**Overall Economic Risk**	.27	***
	(.045)			(.045)	
CR	-.979	***	**CR**	-.751	***
	(.198)			(.106)	
CR14	-.361	*			
	(.187)				
MM	-.406		**MM**	-.226	
	(.257)			(.173)	
MR	-.871	***	**MR**	-.62	***
	(.252)			(.174)	
Financial Development	-1.44	***	**Financial Development**	-1.355	***
	(.463)			(.462)	
Sovereign Default Indicator	.005		**Sovereign Default Indicator**	.013	
	(.017)			(.017)	
GDP per capita	6.57E-06		**ln GDP per capita**	-1.323	***
	(.)			(.336)	
ln GDP	-.971	***	**ln GDP**	.111	
	(.116)			(.3)	
Political Stability	-.103		**Political Stability**	-.084	
	(.098)			(.097)	
Country FE	Y		**Country FE**	Y	

they are designated an emerging market" (Amstad, et al., 2016, p. 1).

All of the remaining explanators of interest are of the anticipated sign, albeit the statistical insignificance surrounding Political Stability is surprising. A recent study (Chen & Chen, 2018) found an economically and statistically significant adverse impact of country governance indicators on SCDS spreads which was robust to several different specifications, including Year and Country FE. Underpinning this finding is the idea that higher governance quality increases willingness to repay debt as there is less incentive to strategically default. This thereby lowers default probability. A similar study on the topic also found a significant impact of institutional quality on SCDS spreads (Huang, et al., 2019). However, both these studies omitted Financial and Economic Development from its explanatory factors, thus indicating a potential issue of omitted variable bias. The results of Table 8 also provide no statistical evidence of trust issues surrounding recent default history, although there is a possibility that this effect is being absorbed by the Country FE.

Table 8 has also been reproduced but using the > 5 observations database. The results are identical for sign and significance levels and virtually identical for the magnitude of estimates. It is additionally reproduced but using classification and regional FE instead of Country FE (see Table A.5.). The results of Table A.5. highlight that the Financial Development Effect is only robust once country FE are accounted for.

5.4. Log Regressions – Country and Year FE

Additionally, it can be informative to directly control for year-to-year effects by including year FE in the models. As such, Table 9 below presents the outputs of the regression equations in Table 8, but with all global factors being replaced by year FE. Years 2004 and 2005 are omitted

Table 9. Log Regressions Output – Country and Year FE

This table presents the outputs of linear regressions of log(SCDS Spreads) against the explanatory variables in the left columns, year FE, country FE, and Document Clause Dummy variables. The regressions were run on the sample excluding years 2004 and 2005. The estimates of the Document Clause Dummy Variables are omitted from this table. Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors.

ln SCDS			ln SCDS		
No. Obvs	1,006		No. Obvs	1,006	
Adj R^2	0.886		Adj R^2	0.887	
Root MSE	0.436		Root MSE	0.434	
cons	2.212	***	cons	7.317	***
	(.752)			(1.594)	
Current Account	.017	***	Current Account	.022	***
	(.004)			(.004)	
FX Real Return Indicator	-.097	**	FX Real Return Indicator	-.095	**
	(.039)			(.039)	
FX Return Volatility	.044	**	FX Return Volatility	.046	**
	(.02)			(.02)	
Gross Debt/GDP	.014	***	Gross Debt/GDP	.012	***
	(.001)			(.002)	
Real GDP Growth	-.008		Real GDP Growth	-.01	*
	(.006)			(.006)	
Reserves/Gross Debt	.001	***	Reserves/Gross Debt	.001	***
	(.)			(.)	
CR	-.989	***	CR	-.691	***
	(.201)			(.127)	
CR14	-.349	*			
	(.2)				
MM	-.495	*	MM	-.233	
	(.275)			(.232)	
MR	-.853	***	MR	-.519	**
	(.259)			(.211)	
Overall Economic Risk	.342	***	Overall Economic Risk	.291	***
	(.047)			(.048)	
Year			Year		
2007	.208	***	2007	.26	***
	(.076)			(.075)	
2008	1.891	***	2008	1.95	***
	(.084)			(.084)	
2009	2.103	***	2009	2.123	***
	(.09)			(.089)	
2010	1.936	***	2010	1.976	***
	(.086)			(.085)	
2011	2.515	***	2011	2.55	***
	(.118)			(.116)	
2012	2.495	***	2012	2.519	***
	(.12)			(.119)	
2013	2.239	***	2013	2.255	***
	(.123)			(.121)	
2014	1.861	***	2014	1.863	***
	(.124)			(.122)	
2015	1.388	***	2015	1.317	***
	(.153)			(.145)	
2016	1.468	***	2016	1.386	***
	(.153)			(.145)	
2017	1.313	***	2017	1.237	***
	(.155)			(.147)	
2018	1.211	***	2018	1.143	***
	(.158)			(.15)	
Financial Development	-1.382	***	Financial Development	-1.168	**
	(.473)			(.471)	
Sovereign Default Indicator	.002		Sovereign Default Indicator	.008	
	(.017)			(.017)	
GDP per capita	7.54E-06		ln GDP per capita	-1.308	***
	(.)			(.337)	
ln GDP	-1.023	***	ln GDP	.131	
	(.124)			(.301)	
Political Stability	-.076		Political Stability	-.082	
	(.099)			(.098)	
Country FE	Y		Country FE	Y	

from these regressions due to the few number of observations.

The estimates for the parameters of interest in Table 9 are virtually identical to that of Table 8 which strengthens the conviction in the empirical relationships inferred. The estimates of year FE are all highly significant and indicate the climates for SCDS spreads faced in each year. In particular, the residual effects of the GFC on spreads can be seen from 2008 all the way until 2018. These estimates illustrate how market frictions, general risk aversion, and changes in global trust can impact SCDS spreads across a wide range of nations.

These regressions are also run on the > 5 observations database to check that the same conclusions are reached when excluding countries with 5 or less years of SCDS data. Indeed they are, and hence this section has solidified the robustness of our key empirical relationships found.

Chapter 6. Trust Score Calculations

The next step of the results is to calculate the 'Trust Level' of countries based off a model of choice. The previous chapter and Appendix A outlined an extensive process to ensure that all aspects of standard SCDS pricing detailed in previous literature have been accounted for in our models. Consequently, we can now focus on aspects relating to our hypotheses. This chapter presents and discusses the final model used, outlines the trust score calculations, conducts interaction term analysis to test Hypothesis 3, compares the traits of high and low trust nations, and concludes with some further discussion points.

6.1. Final Model

The model utilised for this calculation is that on the right of Table 9 as this is the most precise. However the ln GDP explanator is omitted due to its clear collinearity with GDP per capita and that it was proven to be statistically insignificant. Additionally, the regression is run on the > 5 observations database. As the country FE estimates will be used in calculations of country trust levels, it is prudent to ensure that most of them are statistically significant. Hence, those countries with five or less observations are omitted. As a result, the remaining analysis is restricted to 81 countries, but results are robust to this change. Table 10 on the next page presents the estimated regression model, the outputs scaled by their standard deviation, and the estimated country FE.

6.1.1. Economic Significance Analysis

Looking at the standard deviation-scaled estimates, ln GDP per capita is the most influential

Table 10. Model Used for Trust Level Calculations

This table presents the outputs of linear regressions of log(SCDS Spreads) against the explanatory variables in the left column, and country FE. The estimated coefficients for the country dummy variables and their P-values are given to the right of the table. These regressions were run on the > 5 observations database. The estimated coefficients, multiplied by the standard deviation of their variable, are given in column three from the left. Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors

ln SCDS									
No. Obvs	996								
Adj R^2	0.884								
Root MSE	0.436								
	Estimated Coefficient		***Std.Dev x Estimate***	**Country**	**Coef.**	**P-value**	**Country**	**Coef.**	**P-value**
cons	80.555	***		**Angola**	0.621	0.018	**Lithuania**	0.479	0.183
	(8.048)			**Argentina**	2.708	0	**Malaysia**	1.699	0
3m LIBOR-IS Spread	.254	**	*0.064*	**Australia**	3.941	0	**Malta**	2.922	0
	(.121)			**Austria**	2.672	0	**Mexico**	1.419	0
High Yield Spread	-.274	***	*-0.669*	**Bahrain**	3.182	0	**Morocco**	0.436	0.074
	(.032)			**Belgium**	2.462	0	**Netherlands**	2.752	0
ln Banks CDS Spread	.55	***	*0.418*	**Brazil**	1.583	0	**New Zealand**	2.567	0
	(.052)			**Bulgaria**	1.544	0	**Nigeria**	-0.302	0.261
OECD CC	-.448	***	*-0.516*	**Canada**	2.685	0	**Norway**	3.184	0
	(.063)			**Chile**	2.188	0	**Oman**	2.960	0
OECD LEI	-.254	***	*-0.303*	**China**	0.759	0.012	**Pakistan**	0.418	0.138
	(.039)			**Colombia**	1.131	0	**Panama**	1.482	0
US T 5yt1y	.286	***	*0.167*	**Costa Rica**	2.100	0	**Peru**	0.815	0.001
	(.044)			**Croatia**	2.234	0	**Phillipines**	0.074	0.775
Current Account	.022	***	*0.165*	**Cyprus**	3.564	0	**Poland**	1.710	0
	(.003)			**Czech Rep..**	2.113	0	**Portugal**	3.403	0
FX Real Return Indicator	-.065	*	*-0.033*	**Denmark**	3.116	0	**Qatar**	3.000	0
	(.036)			**Dominican..**	1.609	0	**Romania**	1.643	0
FX Return Volatility	.058	***	*0.056*	**Egypt**	-0.185	0.476	**Russia**	1.886	0
	(.02)			**El Salvador**	0.445	0.065	**Saudi Ara..**	2.139	0
Gross Debt/GDP	.012	***	*0.454*	**Estonia**	2.399	0	**Serbia**	1.482	0
	(.001)			**Finland**	2.623	0	**Singapore**	2.671	0
Real GDP Growth	-.007		*-0.025*	**France**	2.591	0	**Slovakia**	1.052	0.002
	(.006)			**Germany**	2.277	0	**Slovenia**	2.734	0
Reserves/Gross Debt	.001	**	*0.077*	**Ghana**	-0.151	0.575	**South Afr..**	1.366	0
	(.)			**Greece**	2.450	0	**South Korea**	3.154	0
CR	-.757	***	*-0.280*	**Guatemala**	0.737	0.001	**Spain**	3.272	0
	(.105)			**Hungary**	2.141	0	**Sri Lanka**	0.516	0.043
MM	-.231		*-0.032*	**Iceland**	3.501	0	**Sweden**	3.076	0
	(.173)			**India**	-0.724	0.027	**Switzerland**	3.994	0
MR	-.627	***	*-0.107*	**Indonesia**	0.484	0.055	**Thailand**	0.843	0.01
	(.174)			**Ireland**	3.989	0	**Trinidad ..**	2.121	0
Overall Economic Risk	.278	***	*0.363*	**Israel**	2.992	0	**Tunisia**	0.625	0.012
	(.045)			**Italy**	2.813	0	**Turkey**	2.506	0
Financial Development	-1.391	***	*-0.303*	**Jamaica**	0.855	0.002	**Ukraine**	1.007	0
	(.461)			**Japan**	1.118	0.052	**United Ar..**	4.218	0
Sovereign Default Indicator	.01		*0.014*	**Jordan**	0.758	0.007	**United Ki..**	3.007	0
	(.017)			**Kazakhstan**	1.857	0	**United St..**	2.540	0
ln GDP per capita	-1.2	***	*-1.323*	**Latvia**	2.173	0	**Uruguay**	2.082	0
	(.116)			**Lebanon**	2.435	0	**Vietnam**	0.090	0.746
Political Stability	-.075		*-0.076*						
	(.098)								

variable on SCDS spreads. This suggests that the Economic Development Effect, as mentioned earlier, is a very strong factor that dictates spreads. In essence, countries investing in SCDS spreads trust more developed countries to a higher degree and thus demand lower spreads. For reference, this effect is empirically more influential than the Overall Economic Risk and Gross Debt-to-GDP variables combined. This suggests that what investor in SCDS care more about is not the economic or fiscal position of a nation, but rather how economically developed they are. Relating this result back to the hypotheses, a proxy for trust is found to be a highly economically significant explanator of SCDS spread variation above and beyond what standard theory indicates to control for. This is supportive of the proposition that trust is a risk factor in SCDS markets.

In absolute terms, Financial Development's scaled estimator is almost as large as Overall Economic Risk, which further supports the hypotheses of this thesis. This suggests that the Financial Development Effect is also highly economically significant, albeit not to the same extent as the Economic Development Effect. Although both have the anticipated sign, the estimates for the Sovereign Default Indicator and Political Stability are economically and statistically insignificant. It can also be seen that the country FE are highly economically significant and that much variation in sovereign SCDS spreads is attributable to unexplained country heterogeneity. In addition, most country FE are highly statistically significant at all levels - 88.8% at 10% significance, 86.3% at 5 % significance, 80% at 1% significance.

Outside of the variables of interest, the most unexpected result is the highly economically significant negative impact of High Yield Spreads. The potential explanation of sovereign credit being a flight to safety asset has already been discussed. Another potential reason is a multicollinearity issue. It may be the case that the Banks CDS Spread, Consumer Confidence, and Leading Economic Indicators are already capturing the impacts of global risk aversion.

6.1.2. Time Period Robustness Check

Table A.6. tests the robustness of results to alternative sample periods. The Economic Development Effect is robust to all time periods, whereas the Financial Development effect is robust to all but the specific period 2008-18. Interestingly, the economic significance of the two effects also declines for the period 2008-18. In contrast, when the years 2009-11 are excluded in regression four, the economic significance of both economic and financial development are increased as compared to the entire sample period. A potential explanation for both of these observations may be the partial correcting of default expectations for developed countries following the GFC and the following Eurozone sovereign credit crisis. This interpretation is strengthened by the commentary of a popular study which wrote that:

"prior to the financial crisis of 2007 to 2008, there was essentially no sign of sovereign credit risk in the developed economies, and the prevailing view was that such risk was unlikely to be a concern for these economies in the near future. However, since the fall of 2008 sovereign credit risk has become a significant problem for a number of developed countries, most notably in Europe" (Acharya, et al., 2014, p. 2689).

The results of this robustness test indicate that this did occur but that, as the memory of the crisis has faded in the minds of investors, their pricing of developed sovereign credit has shifted back towards pre-crisis norms.

6.2. Development Effects Discussion

6.2.1. Economic Development Effect

There are three primary 'rational' justifications for this effect. One could be that countries with higher GDP per capita are perceived as being more stable and 'in control' of their economies, such that they are less likely to default. For example, one study found that central bank quality had a negative and significant impact on SCDS spreads even after controlling for multiple parameters (Ramlall, 2016). However, the statistical and economic insignificance of political stability estimates in Table 10 and throughout this study provides evidence against this interpretation. Alternatively, such countries may be viewed as so integral to global stability that the IMF, or other nations, would never allow them to fail. Accordingly, these countries would be 'bailed out' in the case of a default. A third potential reason is that there are less informational asymmetries with developed countries so that their government reported statistics are trusted more by investors.

However, there is also a behavioural interpretation which presents itself. The potential for familiarity bias[1] seems to be one of the stronger arguments in this vein. Developed countries dominate investment levels in international markets, including SCDS markets. Developed countries typically have more interactions with other developed countries, and thus are more likely to trust them, leading to lower SCDS spreads. Such biases can be related to prospect theory (Kahneman & Tversky, 1979) as decision weights that over-estimate the true probability and severity of default for countries that are trusted less and vice versa. One could argue that this is just a reflection of developed countries having more stable political systems, being more financially developed, or having more liquid SCDS markets. However, political factors are

[1] For information on behavioural finance and aspects of investor psychology such as familiarity bias, please read section 2.8. of the literature review.

already accounted for in the models, as is financial development. In addition, the liquidity argument is negated by the nature of SCDS markets, as will be discussed later in this section.

Another behavioural bias underlying these empirical observations could be a combination of regret aversion and worry. If it is the norm for their peers to charge large spreads on less trusted countries, institutional investors may be worried about potential career implications if they were to consider likelihood of default as lower than spreads imply for such nations. The fact that virtually all investment in SCDS is conducted by institutional investors lends credence to this argument. Furthermore, the links between these potential biases and regret theory introduced by Loomes & Sugden (1982) are clear.

Another potential explanation for the Economic Development effect could be the biases of credit rating agencies (CRAs) toward developed countries. Previous studies have evidenced that, ceteris paribus, developed countries receive more favourable ratings compared to developing countries (Gültekin-Karakaş, et al., 2011). Prior research has argued that part of this effect is due to the higher qualities of institutions in developed countries (Ozturk, 2014). However, this institutional quality was captured by the Governance Indicators provided by the World Bank, which are also considered in this thesis. Hence, any arguments of the Economic Development Effect captured in this thesis being explained by institutional quality is addressed. The issue of CRA biases toward developed countries is accentuated by evidence that emerging market sovereign spreads are particularly sensitive to ratings changes (Guillermo, et al., 1997; Ismailescu & Kazemi, 2010).

This concept can again have both a rational and behavioural interpretation. Firstly, due to asymmetrical information barriers investors may be more dependent on the assessments of CRAs. Secondly, investors may be subject to anchoring biases whereby they have a tendency

to have a belief and use it as a subjective reference point when making future judgement decisions. This leads to specific pieces of information, such as credit ratings, being overly relied on in cognitive decisions and is more likely to occur in situations where investors' knowledge of an investment is limited or skewed. Either way, the influence of biased CRAs on the prices which investors charge for sovereign credit can again be linked back to difference in the perceived trustworthiness of countries.

6.2.2. Financial Development Effect

The Financial Development Effect is less economically significant and robust than the Economic Development Effect. Additionally, it is seemingly more difficult to attribute toward rational sources of trust. It may be rationally argued that countries with more developed markets and institutions are more sophisticated financially and thus are less likely to default. It could also perhaps be that countries with more financial development have longer and more reliable historical data for investors to base their judgements off. However, these arguments appear to be weaker than for the economic counterpart. With respect to the behavioural side of the debate, similar lines of logic discussed earlier can be presented for biases such as familiarity, worry, regret aversion, and anchoring.

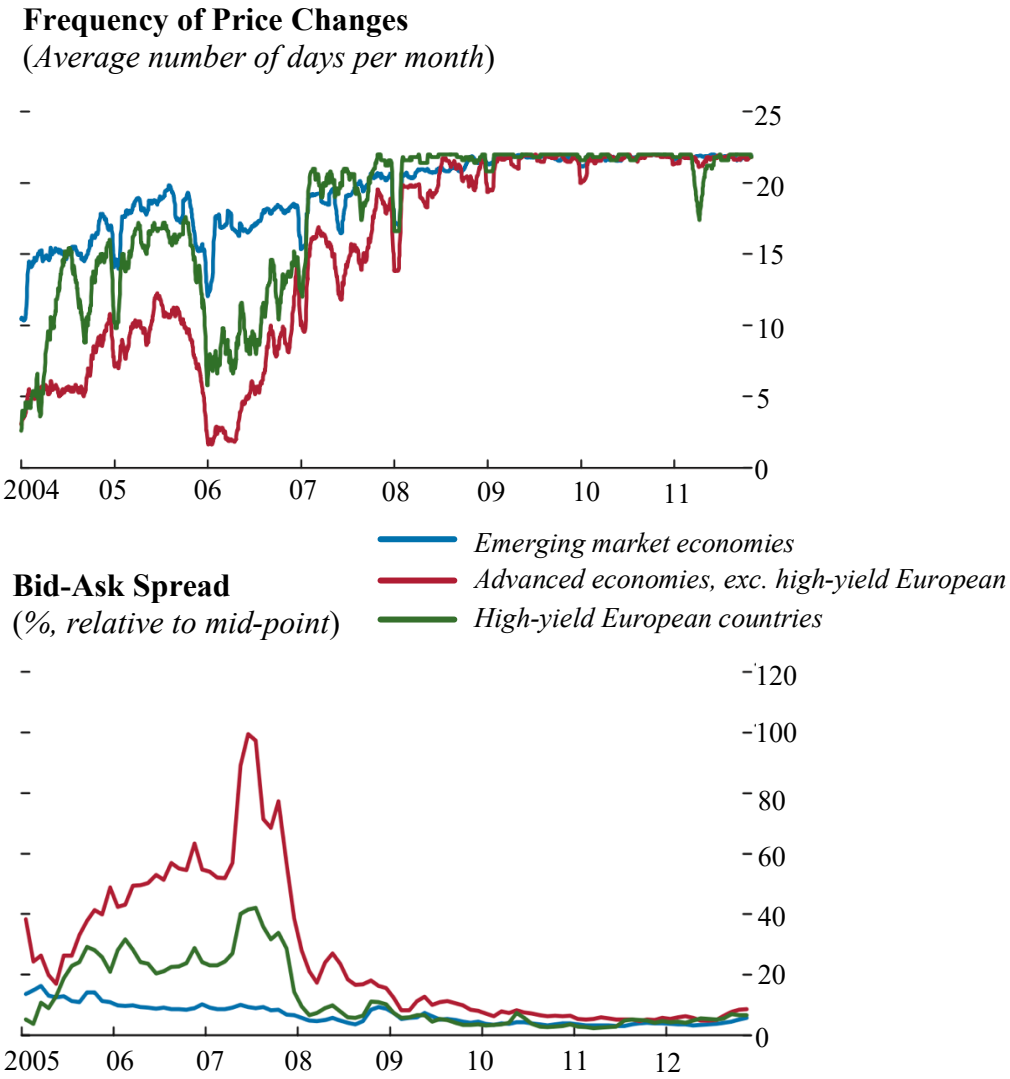
6.2.3. Potential Rebuttals

A potential counter-argument to these 'Development Effects' is that they are capturing liquidity premia which, due to data limitations, is not controlled for in the model. The negative association between liquidity and spreads in SCDS markets has been documented in multiple previous studies (Chen & Chen, 2018; Ferdinand Heinz & Sun, 2014, Bekaert, et al., 2016; International Monetary Fund, 2013; Martell, 2008). Despite this, one of the key advantages of

using SCDS is their high levels of liquidity (higher than the actual underlying bonds), particularly for emerging markets. The reason for this being that, as a generalisation, less developed economies are perceived as being more likely to default, and hence more protection against their default is purchased via SCDS. Furthermore, the originators of SCDS are not the countries themselves but rather large banks. Evidence of these liquidity differences in SCDS markets can be found in Figure 5 below. Thus, it could be argued that liquidity effects would counteract these Development Effects found, which further strengthens the findings.

Figure 5. SCDS Market Liquidity

These graphs are sourced from the International Monetary Fund (2013) and present two different liquidity indicators for the SCDS market. The top graph is the frequency of prices changes, whereas the bottom graph is the bid-ask spread. Blue lines represent emerging market economies, red represents advanced economies, and green represents high-yield European countries.



Another potential weakness is the lack of volatility variables for some of the country fundamentals. These should, theoretically, have a strong impact on spreads as higher volatility implies a higher probability of being forced into default. Perhaps the Development Effects are capturing countries with more volatile fundamentals. However, the Overall Economic Risk parameter provided by Oxford Economics seeks to capture all these factors. Furthermore, currency volatility is accounted for throughout this thesis, which is the variable whose volatility has been highlighted as influential for sovereign credit in previous literature (Reinhart, 2002; Hilscher & Nosbusch, 2010).

6.2.4. Hypotheses Assessment

It is clear that economic and financial development influence SCDS spreads beyond standard determinants. These effects are highly economically and statistically significant, robust, and certain potential criticisms have been addressed. Further, a multitude of reasons as to why these effects are capturing trustworthiness have been detailed. Therefore, given all the evidence we suggest that, for Hypothesis 1, the null hypothesis is rejected in favour of the alternative hypothesis. In simpler terms, there is sufficient evidence to empirically show that trust is a risk factor for SCDS spreads and that, as the trustworthiness of a nation declines, this is associated with an increase in SCDS spreads.

Additionally, the empirical results of Table 10, comparisons of Tables 6 and 7, and analysis of scatterplots in Figures 4 and A.1. together suggest that, as a risk factor, trust is associated with SCDS spreads in a non-linear fashion. Hence, for Hypothesis 2 the null hypothesis is also rejected in favour of the alternative hypothesis.

6.3. Trust Index Calculation

Next, these empirical results are used to calculate a Trust Index. From the model, it is clear that this index should capture the three main effects found: economic development, financial development, and unexplained country heterogeneity. The three equations considered for this are given below (i denotes nations and t denotes time/year):

Equation 1. Trust Score – Full Fixed Effects

$$-1.391\left(Financial\ Development_{i,t} - Max\{Financial\ Development_t\}\right) - 1.2\left(\ln GDP\ per\ capita_{i,t} - Max\{\ln GDP\ per\ capita\ _t\}\right) + Country\ FE_i$$

Equation 2. Trust Score – Half Fixed Effects

$$-1.391\left(Financial\ Development_{i,t} - Max\{Financial\ Development_t\}\right) - 1.2\left(\ln GDP\ per\ capita_{i,t} - Max\{\ln GDP\ per\ capita\ _t\}\right) + 0.5Country\ FE_i$$

Equation 3. Trust Score – No Fixed Effects

$$-1.391\left(Financial\ Development_{i,t} - Max\{Financial\ Development_t\}\right) - 1.2\left(\ln GDP\ per\ capita_{i,t} - Max\{\ln GDP\ per\ capita\ _t\}\right)$$

These equations are calculated for each year. The intuition for each equation is as follows. With respect to the Financial Development and GDP per capita components of the equations, the idea is to capture the full effect of development levels on SCDS spreads each year. Effectively, this calculates how much lower their spreads would be - in percentage terms due to the log transformation to SCDS - if they had the maximum level of development in the sample for that year. Thus, it is the estimated coefficient of the model, multiplied by the difference between the development of a country and the most developed country that year. The rankings produced

would be equivalent if means or medians were used instead of maximums, but these equations seek to generate the full impacts of trust on SCDS spreads.

The three equations differ in their treatment of country FE. We anticipate that country FE are capturing long-term differences in trust beyond that already captured by the economic and financial development measures. The logic behind this is that, as the FE are spanning for such a significant period of time and so many other variables are accounted for, these FE would be capturing underlying biases of investors. Despite this, the level of conviction is not nearly as strong as with the two other effects as, by nature, these country FE are capturing unobserved differences between nations. The three equations therefore reflect differing levels of conviction as to how much of the country FE can be attributed to trust, with Equation 1 having full conviction and Equation 3 having no conviction.

A limitation of these equations is that they do not account for potentially time-varying parameters. It is likely that, over time, investor preferences shift and the development of an economy becomes more or less important to them. To account for this a time-varying parameter model would be appropriate. This alludes to a more general limitation of this study's empirical design; the relative simplicity of modelling adopted. Linear regressions, even with transformations, FE, and interaction terms are somewhat limited and cannot capture potential variation across countries and through time beyond simple non-linearity considerations. For example, Bernoth & Erdogan (2012) found that, when studying determinants of sovereign bond spreads in the EMU, time-varying coefficient models were necessary. Similarly, Ferdinand Heinz & Sun (2014) found that the relative importance of factors influencing European SCDS spreads changed over time. Another study found high levels of variation in estimated risk premiums for SCDS contracts (Doshi, et al., 2017). More complicated models however are not

appropriate to apply in this thesis due to the low number of available observations and the large number of potential explanatory variables for sovereign entities.

These trust calculations with Equation 1 and the rankings they produce over the sample period are given below in Table 11. Table 12 additionally shows the 2018 score and average 2004-2018 score for all three equations. The trust scores and rankings for Equation 1 and 2 are captured in the Appendix under Table A.7. and Table A.8. respectively. It is important to reiterate that these results do not reflect our opinion. These are simply empirical outputs from this study which seek to capture the amalgamated perspectives of worldwide investors through their behaviour related to SCDS pricing. Comparing the positions of countries in 2018 relative to their 2004-2018 average is an interesting exercise to gauge recent trends. Alternatively, by looking at Table 11 one can directly observe how the rankings and scores of specific countries have evolved over time for Equation 1. Moving from Equation 1 through to 3, these rankings become increasingly dominated by GDP per capita levels.

The high ranking of the U.S. across all three equations is not surprising given its widespread acceptance as the ‘risk-free’ benchmark. Still, the results of Equation 1 and 2 indicate that Japan has consistently been the most ‘trusted’ country in the context of sovereign debt. This is not the first study to notice the abnormally low pricing of Japanese sovereign credit despite a stagnating economy and excessively high public debt levels. D'Agostino & Ehrmann (2014) highlighted that Japanese levels of debt has seemingly no impact on sovereign bond spreads, and that increasing inflation was actually associated with lower spreads. In addition, Japanese yields were consistently much lower than all the other countries. They also noted however that a large amount of Japanese debt is held nationally and thus their variables might not be capturing all the effects at play.

Table 11. Equation 1 Trust Scores and Rankings

This table presents the results from Equation 1 to calculate the trust index of countries. The left section is the outputs of Equation 1 over 2004-2018, whereas the right section is the rankings in each year.

	Score															Rank													
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Algeria	4.78	4.74	4.81	4.78	4.57	4.64	4.58	4.65	4.69	4.78	4.73	4.87	4.76	4.76	4.77	38	38	38	34	26	26	24	25	27	31	26	30	29	28	29
Angola	5.57	5.29	5.49	5.34	5.16	5.26	5.28	5.44	5.54	5.63	5.57	5.79	5.77	6.02	6.33	74	64	68	63	52	53	55	59	67	67	62	66	66	72	77
Argentina	6.00	5.65	5.85	5.74	5.98	5.94	5.99	6.13	6.20	6.32	6.43	6.56	6.54	6.60	6.66	78	76	77	74	78	78	78	78	79	80	79	79	80	81	81
Australia	4.57	4.51	4.60	4.64	4.56	4.56	4.45	4.47	4.48	4.68	4.89	4.76	4.74	4.68	4.62	32	31	30	27	25	24	21	21	22	24	31	25	27	25	25
Austria	3.73	3.80	3.87	3.96	3.88	3.95	3.97	3.89	3.80	3.68	3.72	3.74	3.67	3.63	3.53	12	13	12	15	14	14	14	13	12	10	9	11	11	11	10
Bahrain	5.39	5.39	5.55	5.56	5.49	5.58	5.53	5.67	5.59	5.64	5.63	5.61	5.42	5.33	5.34	69	69	70	69	68	68	66	70	69	69	64	61	53	48	50
Belgium	3.60	3.61	3.75	3.76	3.75	3.81	3.85	3.81	3.70	3.58	3.64	3.60	3.57	3.53	3.42	7	7	8	7	10	10	10	11	9	6	5	6	8	6	6
Brazil	4.73	4.60	4.79	4.78	4.53	4.59	4.55	4.53	4.53	4.79	4.97	5.09	5.19	5.33	5.50	37	33	37	33	24	25	23	22	23	32	35	37	42	47	54
Bulgaria	5.01	5.09	5.24	5.38	5.37	5.45	5.47	5.45	5.44	5.31	5.49	5.55	5.69	5.78	5.78	56	58	61	65	65	62	61	60	62	58	57	56	64	63	63
Canada	3.51	3.53	3.62	3.61	3.54	3.57	3.54	3.60	3.56	3.59	3.75	3.66	3.54	3.56	3.56	6	6	6	5	4	4	4	5	5	7	10	8	7	7	11
Chile	4.87	4.87	5.05	5.11	5.09	5.04	5.07	5.13	5.12	5.27	5.47	5.36	5.27	5.38	5.46	44	44	46	47	47	43	44	43	45	56	56	50	47	50	53
China	3.79	3.89	4.00	4.07	4.28	4.49	4.62	4.84	4.90	5.01	5.43	5.55	5.66	5.79	5.78	14	16	18	18	21	21	25	31	35	40	52	57	62	64	62
Colombia	5.00	5.02	5.14	5.13	4.93	4.98	4.97	5.16	5.15	5.26	5.46	5.52	5.53	5.53	5.62	54	52	50	49	42	42	38	44	48	53	55	55	58	58	60
Costa Rica	5.36	5.34	5.38	5.46	5.64	5.74	5.83	5.98	5.95	6.07	6.30	6.32	6.26	6.27	6.16	66	66	65	67	70	73	73	75	75	77	78	78	78	77	73
Croatia	4.99	5.05	5.17	5.30	5.22	5.29	5.29	5.23	5.12	4.99	5.11	5.10	5.11	5.18	5.10	53	55	59	61	56	54	56	48	46	36	38	38	39	42	42
Cyprus	5.43	5.46	5.70	5.81	5.73	5.75	5.58	5.45	5.25	5.05	5.26	5.18	5.14	5.17	5.03	70	72	75	77	76	74	69	61	52	43	44	41	41	41	39
Czech Republic	4.35	4.45	4.60	4.68	4.67	4.72	4.72	4.66	4.58	4.50	4.59	4.76	4.72	4.69	4.72	24	26	29	29	28	27	27	26	24	23	22	26	25	26	28
Denmark	3.95	3.95	4.06	4.10	4.02	4.11	4.12	4.15	3.95	3.88	4.09	4.02	3.90	3.85	3.70	18	18	20	19	17	16	16	17	16	14	17	16	15	14	13
Dominican Republic	5.49	5.51	5.59	5.69	5.89	6.03	6.04	6.16	6.01	6.05	6.29	6.25	6.16	6.08	6.44	73	73	72	73	77	79	79	79	76	76	77	77	77	74	79
Egypt	4.94	4.93	4.48	4.54	4.69	4.84	4.80	4.95	4.76	4.70	5.06	5.25	5.21	5.19	5.23	50	47	25	24	31	33	31	34	31	26	37	44	45	43	46
El Salvador	5.11	5.11	5.17	5.26	5.42	5.51	5.52	5.63	5.54	5.50	5.70	5.64	5.45	5.42	5.32	59	59	58	56	66	67	65	67	65	62	67	63	54	52	47
Estonia	4.92	5.02	5.15	5.26	5.20	5.32	5.38	5.42	5.42	5.34	5.31	5.28	5.38	5.51	5.51	48	53	54	57	55	56	58	57	61	59	48	45	52	57	55
Finland	3.61	3.63	3.71	3.76	3.69	3.75	3.78	3.79	3.68	3.61	3.79	3.73	3.66	3.62	3.48	8	8	7	8	9	9	8	10	7	9	11	10	10	10	8
France	3.66	3.67	3.79	3.84	3.77	3.87	3.86	3.76	3.68	3.59	3.69	3.66	3.51	3.58	3.40	10	9	9	10	11	11	11	7	8	8	8	7	5	8	5
Germany	3.30	3.36	3.45	3.47	3.43	3.55	3.55	3.53	3.43	3.32	3.49	3.41	3.30	3.25	3.09	4	4	3	3	3	3	5	4	3	3	2	3	3	3	3
Ghana	5.38	5.42	5.50	5.67	5.65	5.49	5.57	5.67	5.73	5.86	5.92	5.92	5.83	5.85	5.83	67	70	69	72	71	66	68	69	72	73	71	71	68	66	65
Greece	4.84	4.82	4.90	4.89	4.69	4.81	4.82	4.57	4.30	4.09	4.18	4.26	4.23	4.26	4.15	42	41	41	42	32	32	32	23	21	19	19	19	18	20	19
Guatemala	5.39	5.32	5.41	5.50	5.67	5.82	5.85	5.93	5.88	5.88	6.04	6.05	5.94	5.90	5.82	68	65	66	68	73	75	74	74	74	74	76	73	72	68	64
Hungary	4.90	4.94	5.09	5.19	5.16	5.22	5.26	5.10	4.95	4.86	4.95	4.92	4.94	4.85	4.85	46	48	48	51	51	52	50	41	39	33	33	33	34	32	32
Iceland	4.33	4.27	4.48	4.71	4.81	4.93	5.01	4.97	5.00	4.88	4.71	4.29	4.27	4.13	4.16	23	23	26	31	37	38	41	35	43	34	24	20	19	18	20
India	4.52	4.48	4.68	4.82	4.96	5.15	5.11	5.12	4.93	5.06	5.46	5.34	5.35	5.36	5.33	31	28	32	37	43	46	45	42	37	44	54	49	50	49	49
Indonesia	5.01	4.98	5.09	5.22	5.27	5.29	5.28	5.36	5.37	5.55	5.75	5.87	5.84	5.97	5.89	55	49	47	54	58	55	53	51	58	63	68	70	69	69	67
Ireland	4.49	4.56	4.74	4.79	5.01	5.14	5.19	5.19	4.97	4.77	4.83	4.70	4.61	4.56	4.46	29	32	33	35	45	45	47	46	41	30	28	24	24	24	24
Israel	4.39	4.39	4.52	4.56	4.64	4.75	4.83	4.79	4.69	4.75	4.86	5.04	4.97	4.93	4.82	26	25	27	25	27	28	33	29	26	29	29	35	35	33	31
Italy	4.17	4.16	4.28	4.33	4.26	4.37	4.34	4.26	4.13	3.97	4.15	4.08	3.97	3.91	3.76	22	21	21	21	20	20	20	19	18	16	18	17	17	15	14
Jamaica	5.05	5.07	5.15	5.19	5.33	5.38	5.28	5.36	5.29	5.25	5.34	5.30	5.12	5.11	5.06	58	56	53	52	62	58	54	52	53	52	50	48	40	37	41
Japan	2.14	2.11	2.17	2.35	2.37	2.37	2.16	2.21	2.10	2.12	2.42	2.37	2.11	1.94	1.80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jordan	5.14	5.12	5.15	5.19	5.31	5.37	5.37	5.41	5.20	5.11	5.29	5.49	5.35	5.32	5.23	62	60	52	50	59	57	57	56	50	47	45	53	49	46	45
Kazakhstan	5.34	5.39	5.59	5.28	5.17	5.15	5.24	5.38	5.50	5.63	5.67	5.75	5.80	6.16	6.32	64	68	73	60	53	47	49	53	63	68	66	65	67	76	75
Latvia	5.04	5.14	5.28	5.37	5.32	5.41	5.46	5.49	5.52	5.35	5.24	5.29	5.50	5.70	5.71	57	61	63	64	61	60	60	64	64	60	43	47	56	61	61
Lebanon	6.20	6.17	6.23	6.27	6.37	6.40	6.37	6.44	6.20	6.20	6.64	6.72	6.57	6.49	6.32	80	79	79	79	80	80	80	80	80	79	80	81	81	79	76
Lithuania	3.30	3.40	3.57	3.67	3.61	3.73	3.80	3.84	3.83	3.72	3.68	3.76	3.88	3.95	3.99	5	5	5	6	6	7	9	12	13	11	7	12	14	17	17
Malaysia	4.59	4.65	4.74	4.76	4.68	4.78	4.77	4.86	4.86	5.01	5.12	5.08	5.09	5.13	5.01	33	36	34	32	30	31	29	33	33	39	39	36	37	39	36
Malta	4.70	4.72	4.92	4.96	5.00	5.15	5.26	5.30	5.16	5.09	5.29	5.28	5.21	5.12	5.02	36	37	43	44	44	48	51	50	49	46	47	46	44	38	38
Mexico	4.82	4.80	4.88	4.84	4.81	4.86	4.92	4.98	4.88	4.99	4.95	4.86	4.76	4.70	4.65	40	40	40	39	38	34	34	37	34	37	34	29	28	27	26
Morocco	5.17	5.18	5.27	5.33	5.33	5.43	5.49	5.48	5.35	5.27	5.54	5.60	5.52	5.48	5.33	63	62	62	62	63	61	63	63	57	55	59	60	57	55	48
Netherlands	3.66	3.70	3.81	3.88	3.80	3.87	3.88	3.78	3.58	3.46	3.66	3.59	3.54	3.47	3.26	9	10	10	11	12	12	12	8	6	4	6	5	6	4	4
New Zealand	3.92	3.86	3.99	4.11	4.03	4.17	4.19	4.27	4.26	4.38	4.52	4.37	4.33	4.22	4.13	16	15	16	20	18	19	19	20	20	21	21	22	21	19	18
Nigeria	5.12	5.19	5.10	4.87	4.77	4.93	5.01	5.17	5.09	5.18	5.21	5.36	5.33	5.49	5.58	60	63	49	40	35	37	42	45	44	48	41	51	48	56	57
Norway	3.68	3.74	3.81	3.78	3.60	3.63	3.57	3.53	3.51	3.48	3.57	3.51	3.48	3.48	3.52	11	11	11	9	5	5	6	3	4	5	4	4	4	5	9
Oman	5.64	5.72	5.83	5.78	5.66	5.71	5.67	5.73	5.60	5.58	5.50	5.80	5.72	5.76	5.85	75	77	76	75	72	71	70	71	70	65	58	68	65	62	66
Pakistan	6.24	6.19	6.30	6.34	6.67	6.78	6.70	6.77	6.78	6.66	6.78	6.66	6.51	6.52	6.44	81	81	80	80	81	81	81	81	81	81	81	80	79	80	78
Panama	4.38	4.36	4.46	4.58	4.76	4.94	5.02	5.24	5.23	5.23	5.55	5.60	5.50	5.47	5.40	25	24	23	26	34	39	43	49	51	49	60	59	55	54	51
Peru	4.63	4.61	4.76	4.81	4.90	4.97	5.01	5.20	5.14	5.29	5.56	5.59	5.56	5.62	5.58	34	34	35	36	41	41	40	47	47	57	61	58	60	59	58
Philippines	4.82	4.80	4.85	4.92	5.05	5.15	5.21	5.40	5.33	5.44	5.64	5.63	5.62	5.66	5.59	41	39	39	43	46	49	48	55	55	61	65	62	61	60	59
Poland	4.46	4.50	4.68	4.70	4.67	4.77	4.80	4.75	4.71	4.73	4.71	4.88	4.93	4.97	5.03	28	30	31	30	29	30	30	27	29	27	25	31	33	35	40
Portugal	5.35	5.37	5.46	5.59	5.45	5.62	5.70	5.57	5.34	5.25	5.36	5.24	5.25	5.22	5.11	65	67	67	70	67	69	71	65	56	50	51	43	46	44	43
Qatar	3.98	4.04	4.04	3.99	3.68	3.74	3.48	3.66	3.78	4.06	3.97	4.00	3.76	3.78	3.91	19	20	19	17	8	8	3	6	11	18	12	15	12	12	16
Romania	4.89	4.99	5.16	5.27	5.26	5.39	5.49	5.44	5.40	5.26	5.29	5.46	5.69	5.85	6.05	45	50	56	58	57	59	64	58	59	54	46	52	63	67	70
Russia	4.99	5.02	5.23	5.28	4.87	4.77	4.76	4.81	4.94	5.05	4.97	5.11	5.19	5.41	5.58	52	51	60	59	39	29	28	30	38	42	36	39	43	51	56
Saudi Arabia	4.45	4.50	4.47	4.48	4.42	4.53	4.47	4.61	4.72	4.75	4.75	4.83	4.74	4.84	4.89	27	29	24	23	22	22	22	24	30	28	27	27	26	30	33
Serbia	5.45	5.57	5.69	5.78	5.69	5.73	5.87	5.76	5.79	5.59	5.62	5.72	5.89	5.98	5.98	71	75	74	76	74	72	75	72	73	66	63	64	71	70	69
Singapore	3.27	3.33	3.48	3.56	3.64	3.70	3.72	3.78	3.75	3.87	3.99	3.93	3.90	3.92	3.78	3	3	4	4	7	6	7	9	10	12	13	14	16	16	15
Slovakia	3.74	3.80	3.89	3.95	3.91	4.00	4.04	4.02	3.94	3.88	4.04	4.18	4.29	4.35	4.31	13	12	13	14	15	15	15	15	15	13	16	18	20	22	22
Slovenia	4.99	5.05	5.16	5.25	5.14	5.19	5.15	5.06	4.90	4.69	4.87	4.85	4.87	4.84	4.70	51	54	57	55	50	51	46	40	36	25	30	28	31	31	27
South Africa	4.93	4.93	5.14	5.12	5.11	5.13	5.00	4.97	4.84	5.02	5.32	5.15	5.02	4.95	4.93	49	46	51	48	49	44	39	36	32	41	49	40	36	34	34
South Korea	4.50	4.48	4.58	4.65	4.74	4.88	4.93	5.02	4.96	5.07	5.24	4.92	4.79	4.80	4.80	30	27	28	28	33	35	35	38	40	45	42	32	30	29	30
Spain	4.66	4.63	4.77	4.83	4.77	4.91	4.95	4.84	4.67	4.47	4.64	4.55	4.45	4.45	4.34	35	35	36	38	36	36	36	32	25	22	23	23	23	23	23
Sri Lanka	5.13	5.08	5.16	5.21	5.32	5.46	5.53	5.60	5.57	5.72	5.99	6.12	6.01	6.03	6.07	61	57	55	53	60	64	67	66	68	71	75	76	74	73	71
Sweden	3.90	3.86	3.91	3.94	3.87	3.91	3.95	3.93	3.90	3.97	4.03	3.92	3.84	3.84	3.69	15	14	14	13	13	13	13	14	14	15	15	13	13	13	12
Switzerland	3.99	3.99	3.99	3.99	4.08	4.17	4.18	4.10	4.14	4.11	4.30	4.30	4.41	4.34	4.20	20	19	17	16	19	18	18	16	19	20	20	21	22	21	21
Thailand	4.12	4.22	4.30	4.41	4.52	4.56	4.66	4.79	4.70	4.90	5.13	5.18	5.10	5.13	5.01	21	22	22	22	23	23	26	28	28	35	40	42	38	40	37
Trinidad and Tobago	4.92	4.91	4.92	4.87	4.88	4.94	4.97	5.02	4.97	5.00	4.90	4.99	4.92	4.97	4.96	47	45	42	41	40	40	37	39	42	38	32	34	32	36	35
Tunisia	5.48	5.43	5.38	5.38	5.37	5.49	5.45	5.47	5.29	5.25	5.45	5.49	5.37	5.29	5.13	72	71	64	66	64	65	59	62	54	51	53	54	51	45	44
Turkey	5.76	5.56	5.58	5.61	5.59	5.64	5.72	5.82	5.69	5.81	5.88	5.86	5.86	5.82	5.90	76	74	71	71	69	70	72	73	71	72	70	69	70	65	68
Ukraine	6.04	6.18	6.41	6.48	6.14	5.87	5.90	6.05	6.06	6.15	5.86	6.03	6.15	6.32	6.46	79	80	81	81	79	76	76	76	78	78	69	72	76	78	80
United Arab Emirates	5.78	5.78	5.92	5.89	5.71	5.89	5.97	6.07	6.03	5.97	5.94	5.79	5.53	5.44	5.44	77	78	78	78	75	77	77	77	77	75	74	67	59	53	52
United Kingdom	3.93	3.94	3.98	3.90	3.94	4.11	4.14	4.20	4.07	4.00	4.00	3.71	3.63	3.60	3.48	17	17	15	12	16	17	17	18	17	17	14	9	9	9	7
United States	3.01	3.01	3.08	3.14	3.30	3.42	3.43	3.52	3.34	3.29	3.56	3.39	3.17	3.08	2.96	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2
Uruguay	4.85	4.84	5.03	5.08	5.11	5.16	5.27	5.39	5.42	5.65	5.92	6.10	6.06	6.08	6.20	43	42	45	45	48	50	52	54	60	70	72	75	75	75	74
Vietnam	4.81	4.86	5.00	5.11	5.18	5.46	5.48	5.66	5.54	5.58	5.92	6.06	5.99	6.02	6.10	39	43	44	46	54	63	62	68	66	64	73	74	73	71	72

Table 12. Trust Rankings (2018 and Average)

This table presents the results from Equation 1-3 to calculate the trust index of countries. The left, middle, and right columns represent Equations 1, 2, and 3 respectively. Countries are ordered by their 2018 ranking, with their average ranking over 2004-18 given in brackets.

2018 (Average) Ranking	Equation 1	2018 (Average) Score	2018 (Average) Ranking	Equation 2	2018 (Average) Score	2018 (Average) Ranking	Equation 3	2018 (Average) Score
1 (1)	Japan	2.14 (2.18)	1 (1)	Japan	1.58 (1.62)	1 (1)	Switzerland	0 (0.16)
2 (2)	United States	3.01 (3.25)	2 (2)	United States	1.74 (1.98)	2 (4)	United States	0.47 (0.71)
3 (10)	Singapore	3.27 (3.71)	3 (10)	Singapore	1.94 (2.37)	3 (2)	Norway	0.49 (0.41)
4 (3)	Germany	3.3 (3.4)	4 (4)	Switzerland	2 (2.16)	4 (5)	Ireland	0.5 (0.81)
5 (11)	Lithuania	3.3 (3.72)	5 (3)	Norway	2.09 (2)	5 (12)	Singapore	0.6 (1.04)
6 (4)	Canada	3.51 (3.58)	6 (6)	Germany	2.17 (2.26)	6 (3)	Australia	0.63 (0.67)
7 (7)	Belgium	3.6 (3.67)	7 (5)	Canada	2.17 (2.24)	7 (6)	Sweden	0.83 (0.82)
8 (8)	Finland	3.61 (3.69)	8 (7)	Netherlands	2.28 (2.29)	8 (9)	Canada	0.83 (0.9)
9 (6)	Netherlands	3.66 (3.66)	9 (11)	Finland	2.3 (2.38)	9 (8)	Denmark	0.83 (0.87)
10 (9)	France	3.66 (3.69)	10 (9)	Sweden	2.36 (2.36)	10 (15)	Iceland	0.83 (1.1)
11 (5)	Norway	3.68 (3.59)	11 (12)	France	2.37 (2.39)	11 (11)	Netherlands	0.91 (0.91)
12 (12)	Austria	3.73 (3.79)	12 (15)	Belgium	2.37 (2.43)	12 (10)	United Kingdom	0.92 (0.9)
13 (17)	Slovakia	3.74 (4.02)	13 (14)	Denmark	2.39 (2.43)	13 (7)	Qatar	0.98 (0.86)
14 (32)	China	3.79 (4.81)	14 (16)	Austria	2.4 (2.45)	14 (13)	Finland	0.98 (1.06)
15 (14)	Sweden	3.9 (3.9)	15 (13)	United Kingdom	2.42 (2.4)	15 (14)	Japan	1.03 (1.07)
16 (20)	New Zealand	3.92 (4.18)	16 (8)	Qatar	2.48 (2.36)	16 (18)	Germany	1.03 (1.12)
17 (15)	United Kingdom	3.93 (3.91)	17 (19)	Ireland	2.5 (2.81)	17 (17)	Austria	1.06 (1.12)
18 (16)	Denmark	3.95 (3.99)	18 (20)	Iceland	2.58 (2.85)	18 (16)	France	1.07 (1.1)
19 (13)	Qatar	3.98 (3.86)	19 (17)	Australia	2.6 (2.64)	19 (19)	Belgium	1.14 (1.2)
20 (19)	Switzerland	3.99 (4.15)	20 (21)	New Zealand	2.64 (2.9)	20 (24)	South Korea	1.35 (1.67)
21 (27)	Thailand	4.12 (4.72)	21 (18)	Italy	2.77 (2.74)	21 (23)	New Zealand	1.35 (1.62)
22 (18)	Italy	4.17 (4.14)	22 (23)	Israel	2.9 (3.23)	22 (20)	Italy	1.36 (1.33)
23 (22)	Iceland	4.33 (4.6)	23 (24)	South Korea	2.92 (3.25)	23 (21)	Spain	1.39 (1.39)
24 (24)	Czech Republic	4.35 (4.63)	24 (22)	Spain	3.03 (3.03)	24 (25)	Israel	1.4 (1.74)
25 (43)	Panama	4.38 (5.05)	25 (26)	Lithuania	3.07 (3.48)	25 (22)	United Arab	1.56 (1.59)
26 (29)	Israel	4.39 (4.73)	26 (27)	Slovakia	3.22 (3.5)	26 (29)	Malta	1.78 (2.16)
27 (25)	Saudi Arabia	4.45 (4.63)	27 (32)	Malta	3.24 (3.62)	27 (26)	Cyprus	1.87 (1.84)
28 (30)	Poland	4.46 (4.75)	28 (29)	Czech Republic	3.3 (3.57)	28 (27)	Portugal	1.95 (1.99)
29 (31)	Ireland	4.49 (4.8)	29 (28)	Saudi Arabia	3.38 (3.56)	29 (31)	Bahrain	2.21 (2.33)
30 (33)	South Korea	4.5 (4.82)	30 (51)	China	3.41 (4.43)	30 (33)	Czech Republic	2.24 (2.51)
31 (42)	India	4.52 (5.05)	31 (36)	Poland	3.61 (3.9)	31 (30)	Slovenia	2.25 (2.25)
32 (23)	Australia	4.57 (4.61)	32 (25)	Greece	3.62 (3.3)	32 (32)	Saudi Arabia	2.31 (2.49)
33 (36)	Malaysia	4.59 (4.87)	33 (30)	Slovenia	3.62 (3.61)	33 (28)	Greece	2.39 (2.07)
34 (46)	Peru	4.63 (5.15)	34 (49)	Panama	3.64 (4.31)	34 (37)	Estonia	2.52 (2.9)
35 (26)	Spain	4.66 (4.66)	35 (31)	Cyprus	3.65 (3.62)	35 (34)	Oman	2.68 (2.74)
36 (45)	Malta	4.7 (5.08)	36 (33)	Portugal	3.65 (3.69)	36 (40)	Chile	2.69 (2.98)
37 (34)	Brazil	4.73 (4.83)	37 (34)	United Arab Emirates	3.67 (3.7)	37 (39)	Slovakia	2.69 (2.97)
38 (28)	Algeria	4.78 (4.73)	38 (47)	Thailand	3.7 (4.29)	38 (41)	Poland	2.75 (3.04)
39 (66)	Vietnam	4.81 (5.52)	39 (43)	Estonia	3.72 (4.1)	39 (36)	Hungary	2.75 (2.87)
40 (35)	Mexico	4.82 (4.85)	40 (39)	Malaysia	3.74 (4.03)	40 (38)	Croatia	2.76 (2.92)
41 (53)	Philippines	4.82 (5.27)	41 (42)	Chile	3.78 (4.08)	41 (48)	Uruguay	2.77 (3.4)
42 (21)	Greece	4.84 (4.52)	42 (37)	Bahrain	3.8 (3.92)	42 (35)	Trinidad and	2.79 (2.82)
43 (64)	Uruguay	4.85 (5.48)	43 (52)	Uruguay	3.81 (4.44)	43 (46)	Lithuania	2.83 (3.24)
44 (49)	Chile	4.87 (5.17)	44 (38)	Hungary	3.83 (3.94)	44 (44)	Latvia	2.87 (3.22)
45 (59)	Romania	4.89 (5.39)	45 (35)	Trinidad and Tobago	3.85 (3.88)	45 (42)	Malaysia	2.89 (3.18)
46 (40)	Hungary	4.9 (5.01)	46 (40)	Croatia	3.87 (4.03)	46 (51)	Panama	2.9 (3.57)
47 (38)	Trinidad and Tobago	4.92 (4.94)	47 (41)	Brazil	3.94 (4.04)	47 (59)	China	3.03 (4.05)
48 (54)	Estonia	4.92 (5.3)	48 (48)	Latvia	3.96 (4.3)	48 (43)	Russia	3.1 (3.18)
49 (41)	South Africa	4.93 (5.04)	49 (44)	Russia	4.04 (4.12)	49 (47)	Brazil	3.14 (3.25)
50 (37)	Egypt	4.94 (4.9)	50 (54)	Romania	4.07 (4.57)	50 (54)	Romania	3.24 (3.75)
51 (39)	Slovenia	4.99 (4.98)	51 (45)	Mexico	4.11 (4.14)	51 (45)	Turkey	3.25 (3.23)
52 (44)	Russia	4.99 (5.06)	52 (46)	Oman	4.16 (4.22)	52 (55)	Costa Rica	3.26 (3.77)
53 (47)	Croatia	4.99 (5.15)	53 (59)	Peru	4.22 (4.74)	53 (56)	Thailand	3.28 (3.87)
54 (51)	Colombia	5 (5.23)	54 (56)	Bulgaria	4.24 (4.66)	54 (50)	Argentina	3.29 (3.46)
55 (63)	Indonesia	5.01 (5.45)	55 (50)	South Africa	4.25 (4.36)	55 (49)	Mexico	3.4 (3.43)
56 (62)	Bulgaria	5.01 (5.43)	56 (62)	Costa Rica	4.31 (4.82)	56 (57)	Bulgaria	3.47 (3.89)
57 (57)	Latvia	5.04 (5.39)	57 (55)	Kazakhstan	4.41 (4.63)	57 (53)	Kazakhstan	3.48 (3.7)
58 (50)	Jamaica	5.05 (5.22)	58 (57)	Colombia	4.44 (4.66)	58 (52)	South Africa	3.57 (3.67)
59 (61)	El Salvador	5.11 (5.42)	59 (53)	Turkey	4.5 (4.49)	59 (58)	Lebanon	3.77 (3.94)
60 (48)	Nigeria	5.12 (5.16)	60 (60)	Jamaica	4.62 (4.79)	60 (62)	Peru	3.82 (4.33)
61 (69)	Sri Lanka	5.13 (5.6)	61 (61)	Argentina	4.64 (4.82)	61 (60)	Colombia	3.87 (4.1)
62 (52)	Jordan	5.14 (5.27)	62 (69)	Dominican Republic	4.69 (5.17)	62 (64)	Dominican Republic	3.88 (4.37)
63 (56)	Morocco	5.17 (5.38)	63 (65)	Serbia	4.71 (5)	63 (61)	Serbia	3.97 (4.26)
64 (67)	Kazakhstan	5.34 (5.56)	64 (78)	Vietnam	4.76 (5.47)	64 (63)	Jamaica	4.19 (4.36)
65 (58)	Portugal	5.35 (5.39)	65 (63)	Jordan	4.77 (4.89)	65 (65)	Jordan	4.39 (4.51)
66 (76)	Costa Rica	5.36 (5.87)	66 (71)	Indonesia	4.77 (5.21)	66 (70)	Indonesia	4.53 (4.97)
67 (70)	Ghana	5.38 (5.69)	67 (58)	Algeria	4.78 (4.73)	67 (73)	Sri Lanka	4.62 (5.08)
68 (74)	Guatemala	5.39 (5.76)	68 (72)	Philippines	4.79 (5.24)	68 (72)	Guatemala	4.65 (5.02)
69 (65)	Bahrain	5.39 (5.51)	69 (75)	Sri Lanka	4.88 (5.34)	69 (71)	El Salvador	4.67 (4.97)
70 (60)	Cyprus	5.43 (5.4)	70 (77)	India	4.89 (5.41)	70 (77)	Vietnam	4.72 (5.43)
71 (73)	Serbia	5.45 (5.74)	71 (70)	El Salvador	4.89 (5.2)	71 (69)	Morocco	4.73 (4.95)
72 (55)	Tunisia	5.48 (5.38)	72 (68)	Morocco	4.95 (5.17)	72 (76)	Philippines	4.75 (5.2)
73 (77)	Dominican Republic	5.49 (5.98)	73 (67)	Lebanon	4.98 (5.16)	73 (66)	Algeria	4.78 (4.73)
74 (68)	Angola	5.57 (5.57)	74 (76)	Guatemala	5.02 (5.39)	74 (67)	Tunisia	4.86 (4.76)
75 (71)	Oman	5.64 (5.7)	75 (64)	Egypt	5.03 (5)	75 (68)	Angola	4.95 (4.95)
76 (72)	Turkey	5.76 (5.74)	76 (66)	Tunisia	5.17 (5.07)	76 (75)	Ukraine	5.03 (5.13)
77 (75)	United Arab Emirates	5.78 (5.81)	77 (73)	Angola	5.26 (5.26)	77 (74)	Egypt	5.12 (5.09)
78 (79)	Argentina	6 (6.17)	78 (74)	Nigeria	5.27 (5.31)	78 (79)	India	5.25 (5.77)
79 (78)	Ukraine	6.04 (6.14)	79 (80)	Ghana	5.45 (5.76)	79 (78)	Nigeria	5.42 (5.46)
80 (80)	Lebanon	6.2 (6.37)	80 (79)	Ukraine	5.53 (5.64)	80 (80)	Ghana	5.53 (5.84)
81 (81)	Pakistan	6.24 (6.55)	81 (81)	Pakistan	6.03 (6.35)	81 (81)	Pakistan	5.82 (6.14)

The case of Japan highlights a potential drawback of this study in using 'blunt instruments' for the financial risk of countries. Gross Debt-to-GDP and other variables included may not be rigorous enough as a measure to account for many of the complexities of a sovereign's financial position. Although Debt-to-GDP is used commonly in previous literature, its appropriateness as a measure of fiscal sustainability for an economy has been questioned (Hilscher & Nosbusch, 2010). As an example of this issue, Maltritz (2012) found when studying sovereign spreads in the Eurozone that the probability of inclusion, using a Bayesian Model Averaging approach, of Budget Balance-to-GDP was 100, whereas it was only 27.6 for Government Debt-to-GDP. A financial risk metric[1] similar to the economic risk variable used throughout this study was attempted to be collected to alleviate these issues, but our request to the company which produces it was declined. Hence, this remains the largest data limitation of this study.

6.4. Interaction Term Analysis

The final step of this analysis is to assess Hypothesis 3. That is, the degree of non-linearity for risk factors other than trust is larger for less trusted countries. The results in Table 13 below contradict this prediction as some evidence indicates that the opposite is true. This can be seen by the positive estimated coefficient interaction term for Financial Development and Overall Economic Risk (increasing Financial Development is a positive) and the negative estimated interactions of the Trust Score and Scaled Trust Rank[2] with Overall Economic Risk (increasing Trust Score and Rank is a negative). Hence, the evidence suggests that, as the Overall Economic Risk factor gets more severe, biases in SCDS pricing favouring more trusted countries begin to dissipate. It appears that, as risk factors become more extreme, international

[1] The PRS Group Financial Risk measure. This has additionally been mentioned in the literature review section.
[2] Trust Ranking divided by 8.1, so that their ranking is on a scale of 0 to 10.

Table 13. Interaction Regression Outputs

This table presents the outputs of linear regressions of log(SCDS Spreads) against the explanatory variables in the left column, and other explanators omitted from the table. These omitted variables are: 3m LIBOR-OIS Spread, High Yield Spread, ln Banks CDS Spread, OECD CC & LEI, US T 5yt1y, Current Account, FX Real Return Indicator, FX Return Volatility, Real GDP Growth, Reserves-to-Gross Debt, CR, MM, and MR. These regressions were run on the > 5 observations database. The symbol x represents multiplication, OER stands for Overall Economic Risk, and GD represents Gross Debt/GDP. (1) means that the Trust Score/Rank was calculated using equation 1. Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors.

ln SCDS	**(1)**	**(2)**	**(3)**
No. Obvs	996	996	996
Adj R^2	0.892	0.891	0.872
Root MSE	0.422	0.423	0.459
cons	81.172 ***	58.194 ***	62.134 ***
	(7.936)	(6.931)	(7.465)
Gross Debt/GDP	-.015	.014 ***	.007 ***
	(.01)	(.001)	(.001)
Financial Development	-6.461 ***		
	(1.112)		
Sovereign Default Indicator	.005	.016	.028 ***
	(.016)	(.011)	(.012)
ln GDP per capita	-1.314 ***		
	(.218)		
Political Stability	-.144	-.068 **	-.149 ***
	(.097)	(.03)	(.032)
Overall Economic Risk	-.428	.488 ***	.417 ***
	(.324)	(.085)	(.038)
Financial Development x OER	1.068 ***		
	(.213)		
Economic Development x OER	.029		
	(.04)		
Financial Development x GD	.01 *		
	(.006)		
Economic Development x GD	.002 *		
	(.001)		
Trust Score(1)		1.175 ***	
		(.074)	
Trust Score(1) x OER		-.04 **	
		(.016)	
Trust Score(1) x GD		-4.91E-04	
		(.)	
Scaled Trust Rank(1)			.305 ***
			(.022)
Scaled Trust Rank(1) x OER			-.027 ***
			(.005)
Scaled Trust Rank(1) x GD			.001 ***
			(.)
Country FE	Y		

investors become increasingly focused on the fundamentals of a country, rather than their perception of its trustworthiness amongst other factors. Interpreting these interaction term regressions can be aided by mathematical derivations. The chain rule gives that:

$$\frac{dy}{dx} = \frac{dy}{du} \times \frac{du}{dx}$$

Hence,

$$\frac{dSCDS}{dx} = \frac{dSCDS}{dln(SCDS)} \times \frac{dln(SCDS)}{dx} = \frac{1}{\frac{dln(SCDS)}{dSCDS}} \times \frac{dln(SCDS)}{dx} = SCDS \times \frac{dln(SCDS)}{dx}$$

The middle regression equation in Table 13 gives:

$$\ln(SCDS) = 58.194 + \cdots + .014GD + .488OER + 1.175TS - .04TS \times OER$$
$$- .000491TS \times GD$$

Therefore,

$$\frac{dSCDS}{dTS} = SCDS(1.175 - .04OER - .000491GD) \quad -(1)$$

$$\frac{dSCDS}{dGD} = SCDS(.014 - .000491TS) \quad -(2)$$

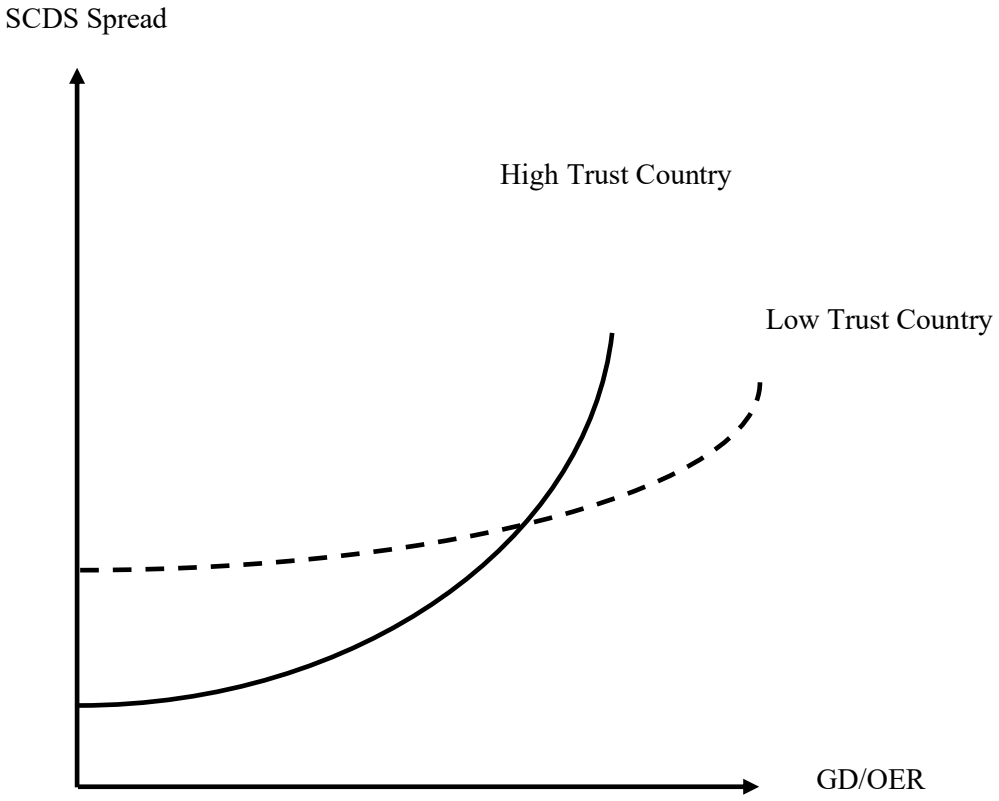
$$\frac{dSCDS}{dOER} = SCDS(.488 - .04TS) \quad -(3)$$

Derivation 1 above implies that, as Overall Economic Risk and/or Gross Debt-to-GDP increase (worsen), then increases in the Trust Score (worsening of trust) result in less of an increase in

SCDS spreads. Derivations 2 and 3 imply that, as the Trust Score increases, rises in Overall Economic Risk/Gross Debt-to-GDP have less of a positive impact on SCDS spreads. Note that a positive impact on spreads is a worsening of credit for a nation. More simply, as Debt-to-GDP and Overall Economic Risk become more extreme, trust has less of a beneficial impact on spreads. This implies a relationship like in Figure 6 below.

Figure 6. Interaction Term Empirical Relationship

This figure graphs an illustration of the empirical relationship implied by the interaction term regressions in Table 13.



Interactions are only run on these two factors as more variables would result in too many regressors and additionally they are thought to be the 'core' variables for the creditworthiness of a nation. Evaluation of the standard deviation-scaled estimates in Table 10 confirms that they are the most economically significant country-specific variables other than the trust-related parameters.

The positive interaction term estimates in the left regression equation of Table 13 also implies the same relationship. The sign of the interaction term estimates are positive, which carries the same interpretation as an increase in financial or economic development is a benefit for a country (increase in trustworthiness), whereas an increase in the Trust Score is a negative. These interactions however are only highly statistically significant between Financial Development and Overall Economic Risk and are significant at the 10% level for both Gross Debt interactions. Additionally, when using the Scaled Trust Rankings of countries rather than their score, the interaction term with Gross Debt is not of the anticipated sign and, when using the Trust Score, the interaction is statistically insignificant. Thus, while some of the evidence around interactions is mixed, overall the results suggest the relationship detailed in Figure 6 above. Additionally, the same regressions in Table 13 but with Equations 2 and 3 used for the trust score and rankings calculations are given in Table A.9.

This section disproves Hypothesis 3. In other words, the results fail to reject the null hypothesis of Hypothesis 3. It appears that more developed nations have a 'buffer' of preferential SCDS pricing but that this dissipates when their debt and economic risk increases in severity. In other words, risk of default during 'good times' for developed nations is under-priced, and this under-pricing is partially corrected as risk of default starts to increase. This result may also be linked to the impacts of the GFC and the Eurozone sovereign credit crisis in the sample period as discussed earlier where, for a couple of years, sovereign spreads were increased for developed countries as a result of distressed economies. The high statistical significance of the interaction terms with Overall Economic Risk lends support to this explanation.

6.5. High Trust vs Low Trust Country Comparison

This section conducts a simple comparison of some of the parameters of interest across more trusted and less trusted nations, as identified by Equation 1. Figure 7 below graphs the averages of these variables over the sample period for the top and bottom ten trusted countries.

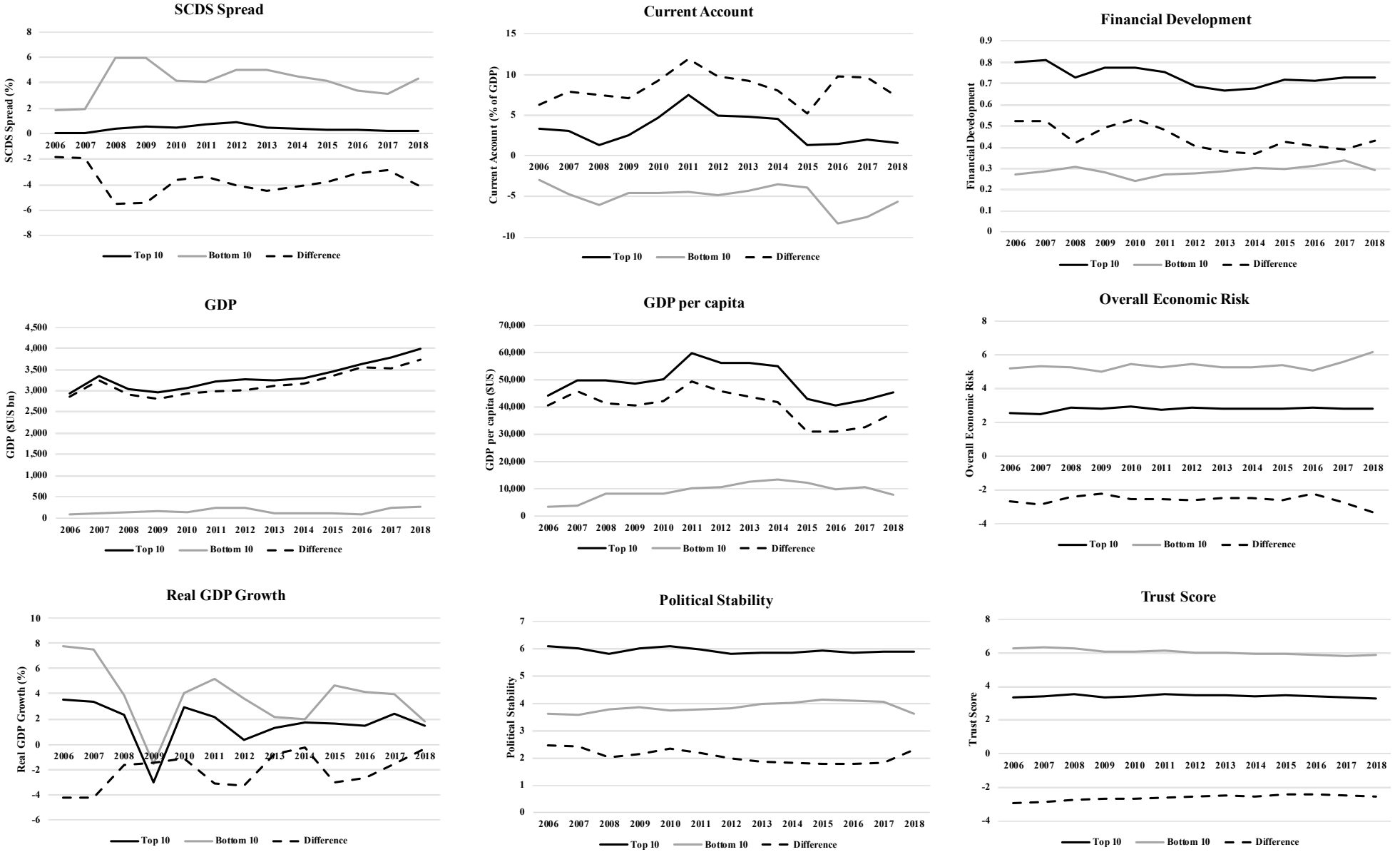
These graphs show that the more trusted group has higher Current Accounts, Financial Development, GDP, GDP per capita, and Political Stability, and lower SCDS spreads, Overall Economic Risk, and Real GDP Growth. It can also be seen that, over the sample period, there has been a slight convergence of Trust Scores between the two groups. Explanations of this can be drawn from recent themes of globalisation and the development of emerging economies. It can also be empirically ascertained from the decreasing difference lines in the GDP per capita and Financial Development graphs, as these are the two variables that change over time in the Trust Score calculations. Moreover, the impacts of the GFC and Eurozone sovereign debt crisis can be seen in the graph of SCDS spreads. It appears that, since 2012, SCDS spreads for highly trusted countries have been gradually returning to pre-2007 levels. The same cannot be said for the less trusted group.

6.6. Further Discussion

The overall premise of this thesis is that 'trust' plays an important and complex role in financial markets. This is especially pertinent in international SCDS markets where the potential for information asymmetries are higher and there is no local repudiation for not honouring ones commitments. Further, trust dictates how willing investors are to participate in markets more generally. This notion has been previously alluded to in a study which found that "a 1% point reduction in the political risk spreads [was] associated with a 12% increase in net-inflows of FDI" (Bekaert, et al., 2014, p. 471). The difficulty lies in the fact that trust is a hard concept to

Figure 7. Top 10 vs Bottom 10 Trusted Countries Comparison (Equation 1)

The figures below graph the changes of variables of nation over the sample period of 2004-2018. Country groups are segregated by the rankings of Equation 1, with the grey and black lines representing the averages of the top 10 and bottom 10 trusted nations respectively each year. The dashed line represents the difference (i.e. top 10 average – bottom 10 average).



define in markets and is even more difficult to accurately measure. The approach we have taken has been to predict patterns of behaviour and a set of trust proxies which are anticipated to empirically demonstrate this behaviour in SCDS markets. There is however the potential that these relationships found are being driven by some other, unobserved, factors. Perhaps more developed nations possess some other common factor that makes them genuinely less likely to default on their debt.

In an attempt to alleviate this issue we have sought to analyse a whole range of variables that explain SCDS spreads, and to show that these Development Effects and Country FE impact spreads above and beyond standard determinants. The biggest potential weakness which we have identified is the rather blunt tools used to assess the fiscal position of nations. Gross Debt-to-GDP, Current Account, Reserves, and Real GDP Growth may not be able to precisely measure the true fiscal position of an economy. However, given the large amounts of countries being analysed and the fact that many less developed economies have limited data (hence the informational asymmetries for international investors), these are the best set of variables available. Despite this, given the very strong economic and statistical relationships found, we are confident that, at a minimum, some of these effects are attributable to the theory underlying our hypotheses.

The theory of this thesis can also be applied to other findings in previous literature as a possible explanatory factor. Multiple studies have found that the influence of certain variables are not constant across countries and/or through time. For example, it has been found that countries with lower credit ratings are more sensitive to international market movements (Kaminsky & Schmukler, 2002). Additionally, Huang, et al. (2015) found that, during international political crises, the adverse impact on sovereign bond yields was reduced in economies with strong investor protection, stable political systems, and common law origins. The reason for this being

that countries with such characteristics are perceived as being more likely to honour their debt obligations. This thesis is a potential explanation for these observations, with fluctuations in trust over time and between countries possibly explaining these phenomena and interaction terms explaining different sensitivities. These ideas are supported by the findings that, in emerging markets, fiscal and political factors influence credit risk but that "lower levels of political risk are associated with tighter spreads, particularly during financial turmoil" (Baldacci, et al. , 2011, p.251).

It should also be noted that, unlike most markets, the investors in SCDS are almost entirely large institutional investors. These investments are typically made for the purpose of hedging, speculation, or basis trading (International Monetary Fund, 2013). Even though essentially all investors in SCDS are large, sophisticated investors, it does not imply that these biases are any less prevalent. A study of global credit rating agencies found that there was a significant home bias in their ratings, as well as biases towards more economically, geopolitically, and culturally aligned countries (Fuchs & Gehring, 2017). The culturally aligned aspect was measured through linguistic similarity. If such biases exist for experts in credit assessment, then it is likely that such biases also exist for the global investor base of SCDS. Moreover, a behavioural paper explored whether investor sophistication and trading experience eliminated the Disposition Effect[1] and found that, while it could reduce it, it could not be eliminated. Therefore, the concept of sophisticated investors carrying systematic biases has been evidenced both generally and specifically in SCDS markets within previous literature.

[1] The tendency for investors to be reluctant to realise losses but propensity to realise gains.

6.7. Implications

It is important to discuss some of the key implications of these results. The first is the identification of clear and significant preferential treatment of developed nations in sovereign credit markets. Whether the underlying cause is predominantly due to rational or irrational aspects of asset pricing is contentious, but it is clear that the beliefs and preferences of global institutional investors lead to significantly lower sovereign spreads for more developed countries.

Secondly, the construction of the Trust Index may provide useful advice to poorer countries on how to lower their borrowing prices beyond, for example, improving their Debt-to-GDP ratio. The evidence suggests that focusing on development or superficial aspects such as public image may be as equally or more influential on the prices that investors charge for their credit.

Thirdly, these tendencies should be checked by investors in order to prevent potential future losses. In the aftermath of the GFC, the false security of 'too big to fail' was exposed in relation to the large banks of the time. There was an underlying mentality before the crisis that these large banks were too sophisticated, too important, and too integral to the structure of financial systems to fail. These results indicate that such biases may also be present today, but for nations rather than corporations. Do investors think that certain countries are too developed to fail? Are they perceived as too advanced and important to global stability such that they could not possibly default? In an environment with record-high global public debt levels, these are important questions for investors and regulators to be asking of themselves. These issues are particularly salient due to the central role that the credit market plays in economies (Longstaff & Wang, 2012), as was seen in the GFC.

Chapter 7. Conclusion

This chapter consolidates the thesis by outlining the key conclusions, limitations, and areas for future research.

7.1. Conclusions

This thesis investigates the determinants of SCDS spreads through a behavioural finance lens in an attempt to create a forward-looking and market driven index of trust for nations in the sample. By isolating the portions of these spreads which can be attributed to trust-related variables, three key effects are found which influence spread variation beyond standard asset pricing models.

Firstly, the Economic Development Effect: countries with higher levels of GDP per capita have favourable pricing of their SCDS. Second, the Financial Development Effect: countries with higher levels of Financial Development are treated preferentially by SCDS market participants. We argue that both of these effects are due to their elevated trust levels in the eyes of international investors. The interpretation of such trust differences can be related to both rational and irrational aspects of investor decision making. It may be due to considerations such as political stability, government doctrines, and informational asymmetries. Alternatively, it could be due to behavioural biases such as the familiarity effect, peer regret, worry, and anchoring (Baker & Ricciardi, 2014).

The third, unexplained effect is potentially the most important. The results show that a significant portion of SCDS spreads are dictated by a time-invariant effect which is not

explained by the model. While this could be capturing multiple effects, we argue that it is mostly representative of biases in trust of countries beyond the two other effects. This unexplained component leaves an exciting avenue for future research which can hopefully explore these aspects with the aid of more sophisticated data points.

The outputs also indicate that the hypothesis of non-linear effects of risk factors on SCDS spreads is correct, and that the impacts of a certain type of risk become more pronounced as they are accentuated. However, the third hypothesis that less trusted countries would be more sensitive to increases in other risk factors is contradicted. The findings suggest that, as the Overall Economic Risk and/or Gross Debt-to-GDP of a nation increases, biases in SCDS pricing favouring more trusted countries begin to dissipate. Though, the results around this concept are mixed and not as robust as the three primary effects identified.

7.2. Limitations

Data restrictions are a clear limitation which is expected when dealing with such a large number of countries. For this study specifically, the lack of data on SCDS market liquidity, more rigorous financial risk measures, and volatility variables are of particular concern. The reasons as to why the impacts of these limitations are minimal has already been discussed throughout this thesis.

There is also a potential endogeneity issue of fiscal positions to the business cycle. Gruber & Kamin (2012) dealt with this when analysing bond yields for the OECD by using projected fiscal positions rather than current fiscal positions. These were not available for all the sample countries in this thesis. However, potential reverse causality has been directly studied by Uribe

& Yue (2006) for emerging market sovereign bonds. They found that there was some impact of country bond spreads on business cycles, but that it was economically insignificant.

Relating to the study design, the identification of the 'trust-related variables' is a limiting factor. We assume that several variables are related to the level of trust that international investors have in a country, and that these variables are not also directly related to other standard determinants of SCDS spreads. This assumption is necessary due to the intangibility of trust but is nonetheless a clear limitation. There may be other reasons behind the empirical results found other than our predictions, and much of the interpretation may be viewed as speculative. We are however attempting to construct new theory in the area of sovereign behavioural finance, and as such, a degree of speculation is unavoidable.

Additionally, an issue with the empirical design is the relative simplicity of modelling adopted. OLS regressions are somewhat limited and cannot capture potential variation across countries and through time beyond simple non-linearity considerations. More sophisticated models would be difficult to apply in this study of annual data due to the low number of observations and large number of potential explanators, but this nevertheless presents a limitation. Some examples of alternative modelling approaches adopted when analysing sovereign credit in previous literature are given in Table 14 below.

Table 14. Alternative Models in Previous Literature

This table lists several different types of empirical models adopted in previous sovereign credit studies.

Model	Study
Bayesian Model Averaging	Maltritz, 2012
Stata's General Estimating Equation	Moser, 2007
Semiparametric Time-Varying Coefficient Model	Bernoth & Erdogan, 2012
Multivariate Latent Factor Decomposition	Dungey, et al., 2000
Vector Autoregressive Model	Martell, 2008
Ordered Response Models	Ozturk, 2014
Generalised Moments Method	Baltaci & Akyol, 2016
Quantile Regression Model	Naifar, 2020
Factor Model	Badaoui, et al., 2013
Panel Cointegration Estimation	Hoa Ho, 2016
Panel GLS Error Correction Framework	Ferdinand Heinz & Sun, 2014
Non-linear Gaussian Pricing Models	Realdon, 2019

7.3. Future Research

Other than studies addressing the limitations outlined in the previous section, this thesis leaves open the potential for future research on the concept of trust in markets. As far as we have been able to discern, there is minimal literature on the characteristics of nations and the influence of such characteristics on the willingness of investors to participate in their markets. Such studies may be able to identify ways to promote global financial integration and openness. For instance, a questionnaire of international investors enquiring around the trustworthiness of nations and their systems or markets could be informative.

Similar studies to this may also be applied to other global markets, such as equity markets. Although such markets are not directly related to governments, there likely still exists indirect biases of international investors which influence willingness to participate and risk premia. Such studies may provide valuable insights into the behavioural patterns of investors.

Finally, there is an opportunity for theoretical models to complement the theory discussed and empirical results of this thesis. Formal modelling of the impacts of trust on SCDS spreads, lending rates, or asset pricing more generally could be an informative avenue to extend the work of this study. Liquidity is an intangible aspect of asset pricing that has been explored in-depth both theoretically and empirically yet trust, despite its arguably greater importance, has not received nearly as much attention. Ultimately, it is our hope that this study will help spur a new stream of research into this fundamental aspect of international markets and transactions.

Appendix

A. Variable Reduction Process

Observing some of the high correlation magnitudes in Table 5, certain variables are accounting for similar factors and thus, to a large extent, are substitutable. If such variables are not related to the hypotheses of this study, then they should be excluded from the analysis to create simplified and more concise results. Such variables and their alternatives are given in Table A.1. below. Alternatives are identified from correlations in Table 5 and also from an understanding of the underlying influences which variables are seeking to account for.

Table A. 1. Substitutable Variables Identification

This table lists several explanatory variables that have been identified as substitutable for the purposes of this study. The column on the left lists the selected variable, and the right column lists the variable(s) which were considered as alternatives but not selected.

Selected Variable	Alternative(s)
3 Month LIBOR-OIS Spread	TED Spread
US Corporate Bonds High Yield Spread	Baa-AAA US Corporate Bonds Spread, VIX Index
S&P500 Return	MSCI World Equities Return
OECD Consumer Confidence & Leading Economic Indicators	US Consumer Confidence and Leading Economic Indicators
FX Real Return Indicator	Commodity TOT Return
FX Return Volatility	Commodity TOT Volatility

The selections above are based on a sequence of regressions. The variables and their alternatives are substituted into eight regressions - including all variables - with and without economic risk, country FE, and log transformations. The alternative variable which produces the highest adjusted R squared sum across these eight regressions is selected. Whilst this process is far removed from directly testing the hypothesis, it is completed to avoid duplication of risk factors. Additionally, it ensures adequate rebuttal of any potential criticisms that certain variables found to be important in previous literature are not considered.

The exclusion of the VIX index[1] may appear surprising as it has been found to be a highly economically and statistically significant determinant of sovereign credit pricing in a large amount of previous literature (International Monetary Fund, 2013; Moser, 2007; Hilscher & Nosbusch, 2010; D'Agostino & Ehrmann, 2014; Hansen & Zegarra, 2016; Chen & Chen, 2018; Jeanneret, 2018; Ferdinand Heinz & Sun, 2014; Doshi, et al., 2017). This is likely due to that the general risk-aversion which the VIX seeks to capture is already represented by the High Yield Spread, Consumer Confidence, and Banks SCDS variables.[2]

Additionally, several other studies have suggested that both the level and volatility of terms of trade (TOT) has an influence on sovereign credit (Baldacci, et al., 2011; Hilscher & Nosbusch, 2010; Maltritz, 2012). Complete TOT data is not available for the breadth of countries in this study nor for the time period required. Commodity TOT data and FX movements are considered as alternatives, with FX being the superior parameter for the purpose of this study as identified by the selection process.

Now that superfluous variables have been eliminated, the next step is to remove variables not of interest which have no statistically significant impact on SCDS spreads. Such variables only confound analysis and should be removed.

This selection process is conducted by 16 baseline regressions for both linear regressions and regressions with a log transformation applied. These 16 regressions are created by including and not including 'toggles': log(GDP), Economic Risk, Country FE, and a 'political stability

[1] The implied future volatility on the S&P500 Index.
[2] It is also probable that the movements of the VIX are not as powerful in influencing spreads for annualised data. Previous studies have predominantly used month-end SCDS spreads or bond yields, which are more prone to volatile fluctuations.

breakdown'.[1] The variables not related to the hypotheses which are never significant at the 10% level in any of the 16 regressions are identified. Then, for Model 16 (including all of the 'toggles'), the least significant of these variables are iteratively removed until all the remaining variables are significant. The variables which are not significant in any of the 16 baseline regressions or in the iteratively created model 16 are removed from further analysis. The results of this procedure are in Table A.2. below.

Table A. 2. Statistically Insignificant Variables Identification

This table lists several explanatory variables of SCDS Spreads considered for study. The middle column indicates whether they are selected for analysis in linear regressions, whereas the right column indicates whether they are selected for analysis in log regressions. "Yes" indicates that they are selected whereas a grey shading indicates that they are not selected.

Variables Considered	Linear Variables Selected	Log Variables Selected
3 month LIBOR-OIS Spread		Yes
High Yield Spread	Yes	Yes
Banks CDS Spread	Yes	Yes
Global Liquidity Indicator	Yes	Yes
SP500 Return	Yes	
OECD CC		Yes
OECD LEI	Yes	Yes
US T 1m		Yes
US T 3mt1m		
US T 1yt3m	Yes	
US T 5yt1y		Yes
US T 10yt5y	Yes	
Current Account	Yes	Yes
FX Real Return Indicator	Yes	Yes
FX Return Volatility	Yes	Yes
FX Pegged Dummy	Yes	Yes
Gross Debt/GDP	Yes	Yes
Inflation	Yes	Yes
Hyperinflation Dummy	Yes	Yes
MSCI Country/Region Return	Yes	Yes
Net Lending/GDP	Yes	
Real GDP Growth	Yes	Yes
Reserves/Gross Debt	Yes	Yes
ln Reserves	Yes	Yes

This process is designed to eliminate variables not integral to the purpose of this study for which, as a result of this analysis, we are confident will have no statistically significant impact

[1] Political Stability breakdown comprises of Control of Corruption, Government Effectiveness, Rule of Law, and Voice & Accountability.

on SCDS spreads across any model specifications being considered. Again, this step is not directly related to the hypotheses of this study, but rather, is imperative to ensure that all variables which are associated with standard aspects of SCDS spreads have been considered. This is a common theme of this thesis and a necessary condition to enable inferences that results carry any implications of investor preferences and beliefs.

B. Additional Literature – CDS Variable Decision

B.1. CDS Spreads vs Bond Spreads

One of the important decisions for this thesis is what financial instrument to use to represent sovereign credit pricing as the dependent variable. The three candidates are bond yields, SCDS spreads, or even sovereign credit ratings, although the inadequacy of sovereign credit ratings is discussed in the next section. Hence, a contended area relevant to this study is whether CDS or bond spreads more accurately and efficiently reflect market sentiment and sovereign risks. In 2013 the IMF found that "spreads of both SCDS and sovereign bonds reflect[ed] economic fundamentals, and other relevant market factors, in a similar fashion" (International Monetary Fund, 2013, p. 1), but that during periods of stress SCDS tended to adjust more rapidly. It is also true that, typically, SCDS markets are more liquid than the sovereign bond market for a country (Longstaff, et al., 2011), implying more accurate estimated spreads. In general, "since 2004, the CDS market has become more liquid than the underlying bond markets" (Amstad, et al., 2016, p. 4).

Supportive of the accuracy of SCDS spreads, Rodriquez, et al. (2019) found that CDS spread movements were more effective at predicting sovereign events than sovereign credit ratings. It has also been noted in the literature that CDS data is a more direct measure of sovereign credit

risk as “sovereign debt spreads are driven not only by sovereign credit risk, but also by interest rate movements, changes in the supply of the underlying bond, illiquidity effects in sovereign debt prices, and other factors” (Ang & Longstaff, 2013, p. 494).

Theoretically CDS and bond spreads should be equal, however, it was evidenced that a basis between the two can exist and persist in a study of Euro area sovereign debt (Fontana & Schiecher, 2016). In this paper it was found that SCDS spreads were more strongly correlated with country-specific credit risk drivers, and that differences between the two often occur due to ‘flight to quality/liquidity’ effects in the government bond markets. Similarly, a study into SCDS and bond pricing dynamics in emerging markets found that spreads can differ considerably in the short run due to liquidity and contract specifics differences (Ammer & Cai, 2011). They also found that CDS premiums often lead the bond market, which corroborates the findings of the International Monetary Fund (2013).

B.2. Credit Rating Agencies (CRAs)

CRAs are paid for their expertise in assessing the creditworthiness of sovereigns and as such their literature provides a valuable source of information for this study. Their sovereign rating methodology papers (Fitch Ratings, 2020; Moodys, 2020; S&P Global Ratings, 2017) outlined the wide variety of variables which are taken into account when providing their ratings. Yet, these ratings are just from the perspective of one party, unlike this thesis which seeks to determine the combined perspectives of worldwide investors. With this comes natural biases, which much academic literature has explored. Yalta & Yalta (2018) displayed a large home bias towards the U.S., and Fuchs & Gehring (2017) found that this bias also extended to countries aligned with the U.S. culturally, economically, and geopolitically.

Furthermore, Reinhart (2002) found that after a banking or currency crisis, the agencies downgraded emerging economies more severely. Gültekin-Karakaş, et al. (2011) similarly found that developed countries were treated differently and favourably by the agencies. However, Ozturk (2014) argued that these differences in treatment could be partly explained by quality of institutions. More specifically, Ozturk found that of the six tested governance indicators, government effectiveness and regulatory quality were the main reasons for disproportionately low credit ratings. This aligns with the methodologies outlined by the ratings agencies, which discuss the importance of several qualitative factors such as political instability and flexibility in their assessments.

An additional limitation of credit ratings is that they are assessed on a 'through-the-cycle' basis and as such are often slow to adapt with markets (Altman & Rijken, 2006). Furthermore, if considering sovereign ratings as a variable there is also the issue of which ratings agency to use as divergences in ratings are quite common (Cantor & Packer, 1995). Another well documented issue with CRAs is the potential for conflicts of interest arising (Bolton, et al., 2012; Gavras, 2010; Johansson, 2010), especially in the wake of the financial crisis. In contrast, Bernal, et al. (2016) found empirical evidence against such conflicts for modern sovereign ratings and suggested that CRAs value their reputation highly. Despite this, the issues discussed lead us to conclude that sovereign ratings are not an appropriate dependant variable to examine the impacts of trust on sovereign credit.

C. Tables

Table A. 3. Baseline Linear Regression Output – Without GDP

This table presents the outputs of linear regressions of SCDS Spreads against the explanatory variables in the left column and Document Clause Dummy Variables which have been omitted from the table. The eight specifications in each column vary by including/not including Overall Economic Risk, Country FE, and a 'political stability breakdown'. Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors.

SCDS Spread	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. Obvs	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015
Adj R^2	0.485	0.494	0.561	0.561	0.709	0.711	0.721	0.721
Root MSE	1.470	1.458	1.358	1.359	1.106	1.102	1.083	1.083
cons	-2.745	-.493	9.793	8.919	56.314 **	56.228 **	58.091 **	58.241 **
	(28.84)	(28.78)	(26.661)	(26.821)	(23.845)	(23.829)	(23.346)	(23.412)
High Yield Spread	.169	.113	-.203	-.193	-.444 **	-.559 ***	-.603 ***	-.665 ***
	(.241)	(.24)	(.225)	(.225)	(.199)	(.2)	(.196)	(.198)
Banks CDS Spread	.53 **	.501 **	.699 ***	.689 ***	.527 ***	.5 ***	.605 ***	.574 ***
	(.209)	(.208)	(.193)	(.194)	(.163)	(.164)	(.16)	(.162)
Global Liquidity Indicator	-.029	-.02	-.003	-.004	.08 **	.092 **	.084 **	.093 ***
	(.044)	(.044)	(.04)	(.041)	(.036)	(.036)	(.036)	(.036)
SP500 Return	.008	.005	-.018	-.017	-.015	-.027	-.028	-.034 *
	(.022)	(.022)	(.021)	(.021)	(.018)	(.018)	(.017)	(.018)
OECD LEI	.106	.044	-.097	-.091	-.538 **	-.588 **	-.594 **	-.629 **
	(.3)	(.3)	(.278)	(.28)	(.249)	(.249)	(.243)	(.245)
US T 1yt3m	-.607	-.766	1.167	1.063	.645	.695	1.712 **	1.649 **
	(.883)	(.878)	(.827)	(.831)	(.716)	(.715)	(.721)	(.722)
US T 10yt5y	.227	.428	.887	.884	1.49 ***	1.881 ***	1.746 ***	1.983 ***
	(.599)	(.597)	(.556)	(.558)	(.488)	(.494)	(.479)	(.486)
Current Account	-.01	-.014 *	.016 **	.013 *	.014	.016 *	.032 ***	.033 ***
	(.007)	(.008)	(.007)	(.007)	(.009)	(.009)	(.009)	(.009)
FX Real Return Indicator	-.414 ***	-.415 ***	-.322 ***	-.323 ***	-.13	-.181 *	-.116	-.152
	(.116)	(.116)	(.108)	(.108)	(.095)	(.096)	(.093)	(.094)
FX Return Volatility	-.072	-.04	-.142 ***	-.128 **	.068	.085 *	.023	.036
	(.058)	(.058)	(.054)	(.055)	(.051)	(.051)	(.051)	(.051)
FX Pegged Dummy	-.583 ***	-.79 ***	-.426 **	-.526 ***	-.881	-.734	-.683	-.58
	(.192)	(.21)	(.178)	(.197)	(1.167)	(1.165)	(1.143)	(1.145)
Gross Debt/GDP	.007 ***	.008 ***	.004 ***	.005 ***	.023 ***	.021 ***	.02 ***	.019 ***
	(.002)	(.002)	(.001)	(.001)	(.004)	(.004)	(.004)	(.004)
Inflation	.093 ***	.091 ***	.019	.02	.031	.033 *	.007	.009
	(.017)	(.017)	(.017)	(.017)	(.019)	(.019)	(.019)	(.019)
Hyperinflation Dummy	.241	.284	.396	.397	.213	.231	.163	.189
	(.432)	(.428)	(.399)	(.399)	(.359)	(.358)	(.351)	(.352)
MSCI Country/Region Return	-.005	-.005	-.006 **	-.006 **	-.009 ***	-.009 ***	-.009 ***	-.008 ***
	(.003)	(.003)	(.003)	(.003)	(.002)	(.002)	(.002)	(.002)
Net Lending/GDP	.019 *	.022 **	.022 **	.024 **	.029 **	.026 **	.033 ***	.031 ***
	(.01)	(.01)	(.009)	(.009)	(.012)	(.012)	(.011)	(.011)
Real GDP Growth	-.054 ***	-.054 ***	-.045 ***	-.046 ***	-.041 ***	-.047 ***	-.043 ***	-.046 ***
	(.016)	(.016)	(.015)	(.015)	(.015)	(.015)	(.014)	(.015)
Reserves/Gross Debt	-0.0004	-3E-04	0.00018	0.00019	.001	.001	.001	.001
	(.)	(.)	(.)	(.)	(.001)	(.001)	(.001)	(.001)
ln Reserves	-.323 ***	-.385 ***	-.307 ***	-.331 ***	-.076	-.044	-.077	-.054
	(.04)	(.042)	(.037)	(.04)	(.104)	(.104)	(.102)	(.102)
Overall Economic Risk			1.033 ***	.999 ***			.741 ***	.698 ***
			(.079)	(.081)			(.117)	(.121)
Financial Development	-.145	.091	.185	.276	-2.648 *	-2.151	-2.032	-1.828
	(.573)	(.574)	(.53)	(.535)	(1.536)	(1.543)	(1.506)	(1.517)
Financial Markets Efficiency	.223	.391 *	.53 **	.554 **	-.088	-.164	-.035	-.074
	(.235)	(.237)	(.218)	(.221)	(.447)	(.447)	(.438)	(.439)
Sovereign Default Indicator	.132 ***	.126 ***	.137 ***	.135 ***	-.023	-.056	-.03	-.051
	(.037)	(.037)	(.034)	(.034)	(.043)	(.043)	(.042)	(.043)
GDP per capita	2E-06	2E-06	9.1E-06 **	9.3E-06 **	-4E-05 ***	-4E-05 ***	-4E-05 ***	-4E-05 ***
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Political Stability	-.939 ***		-.129		-.97 ***		-.687 ***	
	(.102)		(.113)		(.246)		(.245)	
Control of Corruption		.594 ***		.178		-.053		.013
		(.201)		(.191)		(.34)		(.334)
Government Effectiveness		-.773 ***		-.085		-.578		-.416
		(.229)		(.22)		(.351)		(.346)
Rule of Law		-.954 ***		-.263		-1.301 ***		-.897 **
		(.242)		(.232)		(.433)		(.431)
Voice and Accountability		-.139		-.086		-.18		.043
		(.1)		(.094)		(.356)		(.352)
Country FE					Y	Y	Y	Y

Table A. 4. Baseline Log Regression Output – Without GDP

This table presents the outputs of linear regressions of log(SCDS Spreads) against the explanatory variables in the left column and Document Clause Dummy Variables which have been omitted from the table. The eight specifications in each column vary by including/not including Overall Economic Risk, Country FE, and a 'political stability breakdown'. Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors.

ln SCDS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. Obvs	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015
Adj R^2	0.768	0.779	0.796	0.800	0.872	0.874	0.877	0.878
Root MSE	0.620	0.605	0.582	0.575	0.461	0.456	0.451	0.449
cons	28.635 *	33.198 **	27.892 *	28.662 **	41.912 ***	48.1 ***	34.828 ***	40.188 ***
	(15.391)	(15.126)	(14.449)	(14.378)	(12.568)	(12.547)	(12.367)	(12.414)
3m LIBOR-OIS Spread	.557 **	.512 **	.7 ***	.661 ***	.467 ***	.425 **	.578 ***	.534 ***
	(.219)	(.214)	(.206)	(.204)	(.172)	(.171)	(.169)	(.169)
High Yield Spread	-.124	-.16 *	-.158 *	-.166 *	-.201 **	-.234 ***	-.199 ***	-.223 ***
	(.096)	(.095)	(.091)	(.09)	(.078)	(.078)	(.076)	(.076)
Banks CDS Spread	.657 ***	.636 ***	.675 ***	.663 ***	.605 ***	.563 ***	.63 ***	.594 ***
	(.15)	(.147)	(.141)	(.14)	(.115)	(.114)	(.112)	(.112)
Global Liquidity Indicator	-.02	-.012	-.017	-.015	.006	.015	.005	.013
	(.023)	(.022)	(.021)	(.021)	(.018)	(.018)	(.018)	(.018)
OECD CC	-.137	-.162	-.11	-.115	-.195 **	-.233 ***	-.129	-.16 *
	(.108)	(.106)	(.101)	(.101)	(.084)	(.084)	(.083)	(.083)
OECD LEI	-.101	-.146	-.15	-.162	-.208 *	-.247 **	-.22 **	-.25 **
	(.136)	(.134)	(.128)	(.127)	(.109)	(.108)	(.107)	(.107)
US T 1m	-.098	-.117	-.109	-.118	-.127 **	-.14 **	-.135 **	-.143 **
	(.079)	(.077)	(.074)	(.073)	(.06)	(.059)	(.058)	(.058)
US T 5yt1y	.373 ***	.373 ***	.361 ***	.355 ***	.323 ***	.329 ***	.319 ***	.326 ***
	(.136)	(.134)	(.128)	(.127)	(.104)	(.104)	(.102)	(.102)
Current Account	.002	-.001	.012 ***	.009 ***	.014 ***	.015 ***	.022 ***	.022 ***
	(.003)	(.003)	(.003)	(.003)	(.004)	(.004)	(.004)	(.004)
FX Real Return Indicator	-0.160 ***	-0.164 ***	-0.110 **	-0.117 **	-0.094 **	-0.113 ***	-0.077 **	-0.091 **
	0.049	0.048	0.046	0.046	0.039	0.039	0.039	0.039
FX Return Volatility	.056 **	.081 ***	.036	.056 **	.061 ***	.067 ***	.047 **	.051 **
	(.024)	(.024)	(.023)	(.023)	(.021)	(.021)	(.021)	(.021)
FX Pegged Dummy	.139 *	.013	.211 ***	.117	-.432	-.362	-.346	-.295
	(.081)	(.087)	(.076)	(.083)	(.486)	(.483)	(.477)	(.475)
Gross Debt/GDP	.004 ***	.004 ***	.003 ***	.003 ***	.017 ***	.017 ***	.016 ***	.016 ***
	(.001)	(.001)	(.001)	(.001)	(.002)	(.002)	(.002)	(.002)
Inflation	.039 ***	.038 ***	.012	.0137 . *	.018 **	.017 **	.01	.01
	(.007)	(.007)	(.007)	(72387.)	(.008)	(.008)	(.008)	(.008)
Hyperinflation Dummy	-.252	-.237	-.198	-.203	-.104	-.081	-.137	-.109
	(.181)	(.178)	(.17)	(.169)	(.149)	(.148)	(.147)	(.146)
MSCI Country/Region Return	.001	.001	.001	.001	-0.0004	-5E-05	-8E-05	0.00015
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Real GDP Growth	-.012 *	-.012 *	-.008	-.009	-.005	-.008	-.005	-.006
	(.007)	(.007)	(.006)	(.006)	(.006)	(.006)	(.006)	(.006)
Reserves/Gross Debt	0.00016	0.00025	0.00039 **	0.00039 **	.001 ***	.001 ***	.001 ***	.001 ***
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
ln Reserves	-.132 ***	-.171 ***	-.125 ***	-.151 ***	-.067	-.057	-.072 *	-.064
	(.017)	(.018)	(.016)	(.017)	(.043)	(.043)	(.042)	(.042)
Overall Economic Risk			.386 ***	.35 ***			.295 ***	.277 ***
			(.033)	(.034)			(.048)	(.049)
Financial Development	.271	.394 *	.363	.433 *	-2.677 ***	-2.507 ***	-2.573 ***	-2.498 ***
	(.24)	(.237)	(.225)	(.225)	(.63)	(.627)	(.617)	(.617)
Financial Markets Efficiency	-.243 **	-.157	-.122	-.094	.426 **	.414 **	.483 ***	.479 ***
	(.099)	(.098)	(.093)	(.094)	(.184)	(.183)	(.181)	(.18)
Sovereign Default Indicator	.056 ***	.052 ***	.059 ***	.057 ***	.025	.014	.024	.017
	(.016)	(.015)	(.015)	(.014)	(.018)	(.018)	(.017)	(.018)
GDP per capita	-1E-05 ***	-9E-06 ***	-9E-06 ***	-7E-06 ***	-1E-05 ***	-1E-05 ***	-1E-05 ***	-1E-05 **
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Political Stability	-.559 ***		-.255 ***		-.257 **		-.14	
	(.043)		(.048)		(.102)		(.102)	
Control of Corruption		.181 **		.033		-.121		-.097
		(.084)		(.081)		(.141)		(.139)
Government Effectiveness		-.373 ***		-.129		-.103		-.042
		(.095)		(.093)		(.145)		(.143)
Rule of Law		-.5 ***		-.257 ***		-.634 ***		-.461 **
		(.101)		(.098)		(.179)		(.178)
Voice and Accountability		-.093 **		-.076 *		.228		.329 **
		(.041)		(.039)		(.147)		(.145)
Country FE					Y	Y	Y	Y

Table A. 5. Log Regressions – With Continent/Region and Classification FE

This table presents the outputs of linear regressions of log(SCDS Spreads) against the explanatory variables in the left columns, continent/region FE and classification FE. Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors.

ln SCDS			ln SCDS		
No. Obvs	1,015		No. Obvs	1,015	
Adj R^2	0.810		Adj R^2	0.805	
Root MSE	0.560		Root MSE	0.568	
cons	35.765	***	cons	69.333	***
	(10.844)			(9.42)	
3m LIBOR-IS Spread	.809	***	3m LIBOR-IS Spread	.066	
	(.192)			(.147)	
High Yield Spread	-.238	***	High Yield Spread	-.24	***
	(.042)			(.037)	
Banks CDS Spread	.729	***	ln Banks CDS Spread	.485	***
	(.136)			(.062)	
OECD CC	-.09		OECD CC	-.394	***
	(.093)			(.077)	
OECD LEI	-.249	***	OECD LEI	-.264	***
	(.054)			(.047)	
US T 1m	-.131	**			
	(.057)				
US T 5yt1y	.407	***	US T 5yt1y	.291	***
	(.123)			(.056)	
Current Account	.009	***	Current Account	.008	**
	(.003)			(.003)	
FX Real Return Indicator	-.104	**	FX Real Return Indicator	-.105	**
	(.041)			(.041)	
FX Return Volatility	.04	*	FX Return Volatility	.048	**
	(.022)			(.023)	
Gross Debt/GDP	.004	***	Gross Debt/GDP	.004	***
	(.001)			(.001)	
Real GDP Growth	-.008		Real GDP Growth	-.007	
	(.006)			(.006)	
Reserves/Gross Debt	-1.14E-04		Reserves/Gross Debt	-2.19E-06	
	(.)			(.)	
CR	-1.242	***	CR	-.676	***
	(.224)			(.123)	
CR14	-.869	***			
	(.216)				
MM	-1.209	***	MM	-.656	***
	(.284)			(.2)	
MR	-.748	**	MR	-.198	
	(.295)			(.212)	
Overall Economic Risk	.362	***	Overall Economic Risk	.336	***
	(.031)			(.033)	
Financial Development	.639	***	Financial Development	.698	***
	(.2)			(.206)	
Sovereign Default Indicator	.075	***	Sovereign Default Indicator	.082	***
	(.014)			(.014)	
GDP per capita	-6.48E-06	***	ln GDP per capita	-.148	***
	(.)			(.04)	
ln GDP	-.203	***	ln GDP	-.207	***
	(.021)			(.021)	
Political Stability	-.369	***	Political Stability	-.379	***
	(.05)			(.05)	
Classification			Classification		
Neither	.122		Neither	.097	
OECD	.131		OECD	.108	
Continent/Region			Continent/Region		
Asia	.346	***	Asia	.382	***
Europe	.249	***	Europe	.324	***
Latin America	.094		Latin America	.179	**
North America	.171		North America	.185	
Oceania	-.127		Oceania	.091	

Table A. 6. Trust Model Time Period Robustness Checks

This table presents the outputs of linear regressions of log(SCDS Spreads) against the explanatory variables in the left column, and country FE. These regressions were run on the > 5 observations database and the time periods used are given in row four. Symbols of *, ** and *** represent statistical significance of 10%, 5% and 1% respectively. Figures in brackets represent standard errors

ln SCDS	(1)	(2)	(3)	(4)
No. Obvs	996	841	768	689
Adj R^2	0.884	0.885	0.886	0.916
Root MSE	0.436	0.347	0.450	0.397
Time Period	2004-18	2008-18	2004-15	2004-08 & 2012-18
cons	80.555 ***	64.503 ***	94.743 ***	62.865 ***
	(8.048)	(8.474)	(10.199)	(11.812)
3m LIBOR-IS Spread	.254 **	-.001	.12	-.014
	(.121)	(.316)	(.154)	(.386)
High Yield Spread	-.274 ***	-.194 ***	-.312 ***	-.25 ***
	(.032)	(.051)	(.039)	(.04)
ln Banks CDS Spread	.55 ***	.54 ***	.54 ***	.681 ***
	(.052)	(.18)	(.067)	(.121)
OECD CC	-.448 ***	-.436 ***	-.563 ***	-.23 **
	(.063)	(.085)	(.091)	(.103)
OECD LEI	-.254 ***	-.165 ***	-.259 ***	-.285 ***
	(.039)	(.057)	(.047)	(.06)
US T 5yt1y	.286 ***	.194	.275 ***	.226 ***
	(.044)	(.135)	(.05)	(.066)
Current Account	.022 ***	.011 ***	.022 ***	.027 ***
	(.003)	(.003)	(.004)	(.004)
FX Real Return Indicator	-.065 *	-.065 **	-.055	-.104 **
	(.036)	(.031)	(.046)	(.041)
FX Return Volatility	.058 ***	.012	.173 ***	.003
	(.02)	(.017)	(.037)	(.02)
Gross Debt/GDP	.012 ***	.01 ***	.013 ***	.01 ***
	(.001)	(.001)	(.002)	(.002)
Real GDP Growth	-.007	-.008	-.009	-.021 ***
	(.006)	(.005)	(.006)	(.007)
Reserves/Gross Debt	.001 **	.001 ***	3.91E-04	.001 **
	(.)	(.)	(.)	(.)
CR	-.757 ***	-.78 ***	-.91 ***	-.524 ***
	(.105)	(.099)	(.14)	(.136)
MM	-.231	-.505 ***	-.371 *	-.575 *
	(.173)	(.168)	(.194)	(.304)
MR	-.627 ***	-.608 ***	-.599 ***	.003
	(.174)	(.167)	(.195)	(.275)
Overall Economic Risk	.278 ***	.405 ***	.338 ***	.206 ***
	(.045)	(.044)	(.06)	(.049)
Financial Development	-1.391 ***	.307	-1.605 ***	-2.614 ***
	(.461)	(.449)	(.565)	(.524)
Sovereign Default Indicator	.01	-.035 **	.026	.046 **
	(.017)	(.017)	(.023)	(.018)
ln GDP per capita	-1.2 ***	-.668 ***	-1.414 ***	-1.271 ***
	(.116)	(.118)	(.151)	(.126)
Political Stability	-.075	-.177 *	-.097	-.031
	(.098)	(.091)	(.128)	(.104)
Country FE	Y	Y	Y	Y

Table A. 7. Equation 2 Trust Scores and Ranks

This table presents the results from Equation 2 to calculate the trust index of countries. The left section is the outputs of Equation 2 over 2004-2018, whereas the right section is the rankings in each year.

	Score														
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Algeria	4.78	4.74	4.81	4.78	4.57	4.64	4.58	4.65	4.69	4.78	4.73	4.87	4.76	4.76	4.77
Angola	5.26	4.98	5.18	5.03	4.85	4.95	4.97	5.13	5.23	5.32	5.26	5.48	5.46	5.71	6.02
Argentina	4.64	4.30	4.50	4.38	4.62	4.58	4.63	4.78	4.84	4.97	5.07	5.21	5.19	5.24	5.31
Australia	2.60	2.54	2.63	2.67	2.59	2.59	2.48	2.50	2.51	2.71	2.92	2.79	2.77	2.71	2.65
Austria	2.40	2.47	2.53	2.62	2.54	2.61	2.63	2.56	2.47	2.34	2.39	2.40	2.33	2.30	2.19
Bahrain	3.80	3.80	3.96	3.97	3.90	3.99	3.94	4.08	4.00	4.05	4.04	4.02	3.83	3.74	3.75
Belgium	2.37	2.38	2.52	2.53	2.52	2.58	2.62	2.58	2.47	2.35	2.41	2.37	2.34	2.30	2.19
Brazil	3.94	3.81	4.00	3.99	3.73	3.79	3.76	3.74	3.74	3.99	4.18	4.30	4.39	4.54	4.71
Bulgaria	4.24	4.32	4.47	4.60	4.60	4.68	4.70	4.68	4.66	4.54	4.72	4.78	4.92	5.01	5.01
Canada	2.17	2.19	2.28	2.27	2.19	2.23	2.19	2.26	2.21	2.24	2.41	2.32	2.20	2.22	2.21
Chile	3.78	3.77	3.96	4.02	3.99	3.95	3.98	4.04	4.02	4.18	4.38	4.26	4.18	4.28	4.37
China	3.41	3.51	3.62	3.69	3.90	4.11	4.24	4.46	4.52	4.63	5.05	5.17	5.28	5.41	5.40
Colombia	4.44	4.46	4.58	4.56	4.36	4.42	4.41	4.60	4.58	4.69	4.90	4.96	4.96	4.97	5.05
Costa Rica	4.31	4.29	4.33	4.41	4.59	4.69	4.78	4.93	4.90	5.02	5.25	5.27	5.21	5.22	5.11
Croatia	3.87	3.94	4.06	4.18	4.11	4.17	4.17	4.11	4.01	3.87	4.00	3.98	3.99	4.07	3.99
Cyprus	3.65	3.68	3.92	4.03	3.94	3.97	3.80	3.67	3.47	3.27	3.48	3.39	3.36	3.39	3.24
Czech Republic	3.30	3.39	3.54	3.63	3.61	3.66	3.66	3.61	3.53	3.44	3.54	3.70	3.66	3.63	3.67
Denmark	2.39	2.39	2.51	2.54	2.46	2.55	2.56	2.59	2.39	2.32	2.53	2.46	2.34	2.29	2.14
Dominican Republic	4.69	4.70	4.78	4.89	5.09	5.23	5.23	5.36	5.21	5.24	5.48	5.44	5.35	5.27	5.63
Egypt	5.03	5.03	4.57	4.63	4.78	4.93	4.89	5.04	4.85	4.79	5.15	5.34	5.30	5.28	5.32
El Salvador	4.89	4.89	4.95	5.03	5.19	5.29	5.30	5.40	5.32	5.28	5.48	5.42	5.23	5.20	5.09
Estonia	3.72	3.83	3.96	4.06	4.00	4.12	4.18	4.22	4.22	4.14	4.11	4.08	4.18	4.31	4.32
Finland	2.30	2.31	2.40	2.45	2.37	2.44	2.47	2.48	2.37	2.30	2.48	2.42	2.35	2.31	2.17
France	2.37	2.37	2.49	2.55	2.47	2.57	2.57	2.47	2.38	2.30	2.40	2.36	2.21	2.29	2.11
Germany	2.17	2.22	2.31	2.34	2.30	2.41	2.41	2.40	2.30	2.19	2.35	2.27	2.16	2.11	1.95
Ghana	5.45	5.50	5.58	5.75	5.72	5.57	5.65	5.74	5.81	5.93	5.99	5.99	5.91	5.93	5.91
Greece	3.62	3.59	3.67	3.67	3.47	3.58	3.59	3.34	3.08	2.86	2.96	3.03	3.00	3.03	2.93
Guatemala	5.02	4.95	5.04	5.13	5.30	5.45	5.48	5.57	5.51	5.51	5.67	5.69	5.57	5.53	5.45
Hungary	3.83	3.87	4.02	4.12	4.09	4.15	4.19	4.03	3.88	3.79	3.88	3.85	3.87	3.78	3.78
Iceland	2.58	2.52	2.73	2.96	3.06	3.18	3.26	3.22	3.25	3.13	2.96	2.54	2.52	2.38	2.41
India	4.89	4.85	5.05	5.18	5.32	5.51	5.48	5.48	5.30	5.42	5.82	5.70	5.71	5.72	5.70
Indonesia	4.77	4.73	4.84	4.97	5.03	5.05	5.03	5.12	5.13	5.31	5.51	5.63	5.60	5.73	5.65
Ireland	2.50	2.57	2.74	2.80	3.02	3.15	3.19	3.20	2.98	2.78	2.83	2.71	2.61	2.57	2.47
Israel	2.90	2.90	3.03	3.06	3.14	3.25	3.34	3.30	3.19	3.26	3.37	3.55	3.48	3.44	3.33
Italy	2.77	2.76	2.88	2.92	2.86	2.96	2.94	2.86	2.73	2.56	2.74	2.67	2.57	2.50	2.36
Jamaica	4.62	4.64	4.72	4.77	4.90	4.95	4.86	4.93	4.86	4.82	4.91	4.87	4.70	4.68	4.63
Japan	1.58	1.55	1.61	1.79	1.81	1.81	1.60	1.66	1.54	1.56	1.86	1.81	1.55	1.38	1.24
Jordan	4.77	4.74	4.77	4.81	4.93	4.99	4.99	5.03	4.82	4.73	4.91	5.12	4.97	4.94	4.85
Kazakhstan	4.41	4.46	4.66	4.35	4.25	4.22	4.31	4.45	4.57	4.70	4.74	4.82	4.87	5.23	5.39
Latvia	3.96	4.05	4.19	4.29	4.24	4.33	4.38	4.41	4.43	4.26	4.16	4.20	4.42	4.61	4.63
Lebanon	4.98	4.95	5.01	5.05	5.16	5.18	5.15	5.22	4.98	4.98	5.42	5.50	5.35	5.28	5.11
Lithuania	3.07	3.16	3.33	3.43	3.37	3.49	3.56	3.60	3.59	3.48	3.44	3.52	3.64	3.71	3.75
Malaysia	3.74	3.80	3.89	3.91	3.83	3.93	3.92	4.01	4.01	4.16	4.27	4.23	4.24	4.28	4.16
Malta	3.24	3.26	3.46	3.50	3.54	3.69	3.80	3.84	3.70	3.63	3.83	3.82	3.75	3.66	3.56
Mexico	4.11	4.09	4.17	4.13	4.10	4.15	4.21	4.27	4.17	4.29	4.24	4.15	4.05	3.99	3.95
Morocco	4.95	4.96	5.05	5.11	5.12	5.21	5.27	5.26	5.14	5.05	5.32	5.38	5.30	5.26	5.11
Netherlands	2.28	2.32	2.43	2.50	2.43	2.50	2.50	2.40	2.20	2.09	2.29	2.22	2.16	2.09	1.89
New Zealand	2.64	2.58	2.70	2.82	2.75	2.89	2.91	2.99	2.98	3.09	3.23	3.09	3.05	2.94	2.85
Nigeria	5.27	5.34	5.25	5.02	4.92	5.08	5.16	5.32	5.24	5.33	5.36	5.51	5.48	5.64	5.73
Norway	2.09	2.14	2.22	2.19	2.01	2.03	1.98	1.94	1.91	1.88	1.97	1.92	1.88	1.89	1.93
Oman	4.16	4.24	4.35	4.30	4.18	4.23	4.19	4.25	4.12	4.10	4.02	4.32	4.24	4.28	4.37
Pakistan	6.03	5.98	6.09	6.13	6.46	6.57	6.49	6.57	6.57	6.45	6.57	6.45	6.30	6.31	6.23
Panama	3.64	3.62	3.72	3.84	4.02	4.20	4.28	4.50	4.49	4.49	4.81	4.86	4.76	4.73	4.65
Peru	4.22	4.20	4.35	4.40	4.49	4.56	4.60	4.79	4.74	4.89	5.15	5.18	5.15	5.22	5.17
Philippines	4.79	4.76	4.82	4.88	5.01	5.12	5.18	5.36	5.30	5.40	5.60	5.60	5.58	5.62	5.55
Poland	3.61	3.65	3.82	3.85	3.81	3.92	3.95	3.89	3.85	3.88	3.86	4.03	4.07	4.12	4.17
Portugal	3.65	3.67	3.75	3.89	3.75	3.92	4.00	3.87	3.64	3.54	3.65	3.54	3.55	3.52	3.40
Qatar	2.48	2.54	2.54	2.49	2.18	2.24	1.98	2.16	2.28	2.56	2.47	2.50	2.26	2.28	2.41
Romania	4.07	4.17	4.34	4.45	4.44	4.57	4.67	4.62	4.58	4.44	4.47	4.64	4.87	5.03	5.23
Russia	4.04	4.07	4.28	4.33	3.92	3.83	3.82	3.87	4.00	4.10	4.03	4.16	4.25	4.47	4.63
Saudi Arabia	3.38	3.43	3.40	3.41	3.35	3.46	3.40	3.55	3.65	3.68	3.68	3.76	3.67	3.77	3.82
Serbia	4.71	4.83	4.94	5.04	4.95	4.99	5.13	5.02	5.05	4.85	4.87	4.98	5.15	5.24	5.24
Singapore	1.94	1.99	2.15	2.22	2.30	2.36	2.39	2.45	2.41	2.54	2.65	2.60	2.57	2.58	2.45
Slovakia	3.22	3.28	3.37	3.43	3.38	3.48	3.51	3.50	3.41	3.36	3.51	3.66	3.76	3.82	3.78
Slovenia	3.62	3.68	3.79	3.88	3.78	3.82	3.79	3.69	3.53	3.32	3.50	3.49	3.51	3.47	3.34
South Africa	4.25	4.25	4.46	4.43	4.43	4.45	4.32	4.29	4.16	4.33	4.64	4.47	4.33	4.27	4.25
South Korea	2.92	2.91	3.00	3.07	3.16	3.30	3.35	3.44	3.38	3.49	3.66	3.34	3.21	3.22	3.23
Spain	3.03	2.99	3.14	3.20	3.14	3.27	3.31	3.20	3.04	2.84	3.01	2.91	2.82	2.81	2.70
Sri Lanka	4.88	4.82	4.90	4.95	5.06	5.20	5.28	5.34	5.31	5.47	5.73	5.87	5.75	5.77	5.81
Sweden	2.36	2.32	2.38	2.41	2.33	2.37	2.41	2.39	2.37	2.43	2.49	2.38	2.31	2.30	2.15
Switzerland	2.00	2.00	2.00	2.00	2.08	2.17	2.19	2.10	2.14	2.11	2.30	2.30	2.41	2.34	2.20
Thailand	3.70	3.79	3.87	3.99	4.10	4.14	4.24	4.37	4.28	4.48	4.71	4.76	4.68	4.71	4.59
Trinidad and Tobago	3.85	3.85	3.86	3.81	3.82	3.88	3.91	3.96	3.91	3.94	3.84	3.93	3.86	3.91	3.90
Tunisia	5.17	5.11	5.07	5.06	5.06	5.17	5.13	5.15	4.98	4.93	5.14	5.18	5.06	4.98	4.82
Turkey	4.50	4.31	4.33	4.35	4.34	4.38	4.46	4.57	4.44	4.56	4.63	4.60	4.61	4.56	4.65
Ukraine	5.53	5.67	5.90	5.97	5.64	5.37	5.40	5.55	5.56	5.65	5.36	5.52	5.65	5.81	5.95
United Arab Emirates	3.67	3.68	3.81	3.78	3.61	3.79	3.86	3.96	3.92	3.86	3.84	3.69	3.42	3.33	3.33
United Kingdom	2.42	2.44	2.47	2.40	2.43	2.61	2.63	2.69	2.57	2.50	2.49	2.20	2.12	2.10	1.97
United States	1.74	1.74	1.81	1.87	2.03	2.15	2.16	2.25	2.07	2.02	2.29	2.12	1.90	1.81	1.69
Uruguay	3.81	3.80	3.99	4.04	4.07	4.12	4.23	4.35	4.38	4.61	4.88	5.05	5.02	5.04	5.16
Vietnam	4.76	4.82	4.96	5.06	5.14	5.41	5.44	5.62	5.50	5.54	5.88	6.01	5.94	5.98	6.06

	Rank														
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Algeria	67	65	65	63	58	59	56	57	58	59	53	55	53	53	53
Angola	77	75	77	70	63	63	64	67	71	72	67	70	71	74	79
Argentina	61	56	58	54	61	58	58	59	61	65	62	64	63	64	66
Australia	19	18	17	17	17	15	11	13	16	18	19	20	20	20	20
Austria	14	15	15	16	16	17	16	14	14	11	7	12	11	11	11
Bahrain	42	42	43	39	38	41	38	42	40	40	41	38	35	33	33
Belgium	12	12	14	13	15	14	15	15	15	12	10	10	12	12	12
Brazil	47	43	45	40	32	32	30	32	34	39	44	46	47	47	52
Bulgaria	54	58	57	60	60	60	60	58	57	52	52	52	56	57	56
Canada	7	6	6	6	6	5	6	6	6	7	9	8	7	7	14
Chile	41	38	42	42	42	39	40	41	43	45	47	45	42	44	44
China	30	30	30	31	39	42	48	52	53	55	61	61	66	70	69
Colombia	58	59	60	59	54	54	54	55	55	56	58	57	57	55	57
Costa Rica	56	55	52	56	59	61	61	61	64	67	66	65	64	62	61
Croatia	46	47	47	48	49	48	42	43	41	36	38	37	38	39	39
Cyprus	35	36	40	43	41	40	32	30	27	25	26	25	25	26	25
Czech Republic	28	28	29	29	31	29	29	29	28	28	29	32	31	30	31
Denmark	13	13	13	14	13	12	13	16	12	10	15	14	13	10	8
Dominican Republic	62	62	64	66	72	74	72	74	70	69	72	69	69	67	72
Egypt	75	76	59	61	62	62	63	65	62	60	65	66	68	69	67
El Salvador	71	71	70	71	76	75	75	75	76	70	73	68	65	60	58
Estonia	39	44	41	45	43	43	43	44	47	43	42	40	41	45	43
Finland	9	8	9	10	10	10	10	12	10	9	12	13	14	14	10
France	11	11	12	15	14	13	14	11	11	8	8	9	8	9	7
Germany	6	7	7	7	7	9	9	8	8	6	6	6	6	6	5
Ghana	79	79	79	79	80	80	80	80	80	80	80	79	79	79	77
Greece	32	31	31	30	28	28	28	24	22	21	20	22	22	23	23
Guatemala	74	72	73	77	77	78	79	78	78	77	76	76	73	71	70
Hungary	44	46	46	46	46	46	44	40	36	34	37	35	37	35	34
Iceland	18	16	19	21	21	21	21	22	24	23	21	16	16	16	17
India	70	70	74	78	78	79	78	76	73	75	78	77	77	75	74
Indonesia	66	63	67	68	69	67	66	66	68	71	74	75	75	76	73
Ireland	17	19	20	18	20	20	20	20	19	19	18	19	19	18	19
Israel	22	22	23	22	23	22	23	23	23	24	24	29	27	27	26
Italy	21	21	21	20	19	19	19	18	18	17	17	18	17	17	15
Jamaica	60	61	62	62	64	64	62	62	63	61	60	56	51	50	48
Japan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jordan	65	64	63	64	66	66	65	64	60	58	59	60	58	54	55
Kazakhstan	57	60	61	52	52	50	51	51	54	57	54	53	55	63	68
Latvia	48	48	49	49	51	52	53	50	50	46	43	43	48	49	47
Lebanon	73	73	72	73	75	71	69	69	66	66	71	71	70	68	59
Lithuania	25	25	25	27	26	27	27	28	30	29	25	27	30	32	32
Malaysia	40	41	39	38	37	38	37	39	42	44	46	44	44	43	40
Malta	27	26	28	28	29	30	33	33	33	32	33	34	33	31	30
Mexico	51	50	48	47	48	47	46	46	46	47	45	41	39	38	38
Morocco	72	74	75	76	73	73	73	70	69	68	68	67	67	66	60
Netherlands	8	9	10	12	11	11	12	9	5	4	3	5	5	4	3
New Zealand	20	20	18	19	18	18	18	19	20	22	23	23	23	22	22
Nigeria	78	78	78	69	65	68	70	71	72	73	69	72	72	73	75
Norway	5	5	5	4	2	2	2	2	2	2	2	2	2	3	4
Oman	52	53	54	50	50	51	45	45	44	42	39	47	43	42	45
Pakistan	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81
Panama	34	32	32	34	44	49	50	53	52	51	55	54	52	52	51
Peru	53	52	55	55	57	56	57	60	59	63	64	63	62	61	63
Philippines	68	66	66	65	68	69	71	73	74	74	75	74	74	72	71
Poland	31	33	36	35	35	36	39	36	35	37	36	39	40	40	41
Portugal	36	34	33	37	33	37	41	35	31	31	30	28	29	29	29
Qatar	16	17	16	11	5	6	3	4	7	16	11	15	9	8	16
Romania	50	51	53	58	56	57	59	56	56	49	48	50	54	58	64
Russia	49	49	50	51	40	34	34	34	39	41	40	42	45	46	49
Saudi Arabia	29	29	27	25	25	25	25	27	32	33	32	33	32	34	36
Serbia	63	69	69	72	67	65	67	63	67	62	56	58	61	65	65
Singapore	3	3	4	5	8	7	7	10	13	15	16	17	18	19	18
Slovakia	26	27	26	26	27	26	26	26	26	27	28	30	34	36	35
Slovenia	33	37	34	36	34	33	31	31	29	26	27	26	28	28	28
South Africa	55	54	56	57	55	55	52	47	45	48	50	48	46	41	42
South Korea	23	23	22	23	24	24	24	25	25	30	31	24	24	24	24
Spain	24	24	24	24	22	23	22	21	21	20	22	21	21	21	21
Sri Lanka	69	68	68	67	71	72	74	72	75	76	77	78	78	77	76
Sweden	10	10	8	9	9	8	8	7	9	13	13	11	10	13	9
Switzerland	4	4	3	3	4	4	5	3	4	5	5	7	15	15	13
Thailand	38	39	38	41	47	45	49	49	48	50	51	51	50	51	46
Trinidad and Tobago	45	45	37	33	36	35	36	37	37	38	35	36	36	37	37
Tunisia	76	77	76	74	70	70	68	68	65	64	63	62	60	56	54
Turkey	59	57	51	53	53	53	55	54	51	53	49	49	49	48	50
Ukraine	80	80	80	80	79	76	76	77	79	79	70	73	76	78	78
United Arab Emirates	37	35	35	32	30	31	35	38	38	35	34	31	26	25	27
United Kingdom	15	14	11	8	12	16	17	17	17	14	14	4	4	5	6
United States	2	2	2	2	3	3	4	5	3	3	4	3	3	2	2
Uruguay	43	40	44	44	45	44	47	48	49	54	57	59	59	59	62
Vietnam	64	67	71	75	74	77	77	79	77	78	79	80	80	80	80

Table A. 8. Equation 3 Trust Scores and Ranks

This table presents the results from Equation 3 to calculate the trust index of countries. The left section is the outputs of Equation 3 over 2004-2018, whereas the right section is the rankings in each year.

	Score															Rank													
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Algeria	4.78	4.74	4.81	4.78	4.57	4.64	4.58	4.65	4.69	4.78	4.73	4.87	4.76	4.76	4.77	73	72	73	72	67	67	65	65	67	67	65	67	66	65	65
Angola	4.95	4.66	4.87	4.72	4.54	4.63	4.66	4.82	4.92	5.01	4.95	5.17	5.15	5.40	5.71	75	70	75	67	65	66	67	67	70	70	69	70	71	73	76
Argentina	3.29	2.94	3.15	3.03	3.27	3.23	3.28	3.42	3.49	3.61	3.72	3.85	3.83	3.89	3.96	54	45	48	41	49	47	47	49	51	50	50	51	50	50	52
Australia	0.63	0.57	0.66	0.70	0.62	0.62	0.51	0.53	0.54	0.74	0.95	0.82	0.80	0.73	0.68	6	4	4	4	3	3	4	3	3	4	5	6	11	9	10
Austria	1.06	1.13	1.20	1.29	1.20	1.28	1.29	1.22	1.13	1.00	1.05	1.06	1.00	0.96	0.85	17	18	18	18	16	17	17	16	16	14	11	13	15	14	14
Bahrain	2.21	2.21	2.37	2.38	2.31	2.40	2.35	2.49	2.41	2.46	2.45	2.43	2.24	2.15	2.16	29	29	30	30	31	31	30	32	31	32	31	31	30	30	31
Belgium	1.14	1.15	1.28	1.30	1.29	1.35	1.39	1.35	1.23	1.11	1.18	1.14	1.11	1.07	0.96	19	19	19	19	18	18	18	18	18	17	15	17	18	18	19
Brazil	3.14	3.02	3.21	3.19	2.94	3.00	2.97	2.95	2.94	3.20	3.39	3.51	3.60	3.75	3.92	49	48	49	47	39	40	38	38	40	44	46	48	48	49	51
Bulgaria	3.47	3.55	3.69	3.83	3.82	3.90	3.93	3.90	3.89	3.76	3.95	4.01	4.15	4.24	4.24	56	57	56	59	59	59	59	56	58	54	53	53	56	56	57
Canada	0.83	0.84	0.93	0.93	0.85	0.89	0.85	0.92	0.87	0.90	1.07	0.97	0.86	0.87	0.87	8	10	8	9	7	7	5	6	9	9	12	11	12	13	16
Chile	2.69	2.68	2.86	2.93	2.90	2.86	2.88	2.94	2.93	3.09	3.29	3.17	3.08	3.19	3.27	36	35	37	38	38	36	37	37	39	41	44	41	39	39	41
China	3.03	3.13	3.24	3.31	3.52	3.74	3.86	4.08	4.14	4.25	4.67	4.80	4.90	5.03	5.02	47	51	50	50	53	55	58	60	60	61	63	65	67	68	69
Colombia	3.87	3.89	4.01	4.00	3.80	3.85	3.84	4.03	4.02	4.13	4.33	4.39	4.39	4.40	4.48	61	61	62	61	58	58	56	59	59	60	60	60	60	60	61
Costa Rica	3.26	3.24	3.28	3.36	3.54	3.64	3.73	3.88	3.85	3.97	4.20	4.22	4.16	4.17	4.06	52	52	51	51	54	53	54	55	56	57	58	56	57	54	53
Croatia	2.76	2.82	2.94	3.06	2.99	3.05	3.05	3.00	2.89	2.76	2.88	2.86	2.88	2.95	2.87	40	42	39	44	43	41	41	41	38	36	37	36	37	37	36
Cyprus	1.87	1.90	2.14	2.25	2.16	2.19	2.01	1.89	1.69	1.49	1.69	1.61	1.58	1.61	1.46	27	27	28	28	28	26	26	26	22	22	22	23	23	23	23
Czech Republic	2.24	2.34	2.48	2.57	2.55	2.60	2.61	2.55	2.47	2.38	2.48	2.65	2.61	2.58	2.61	30	31	33	33	33	33	33	33	32	31	32	32	33	32	32
Denmark	0.83	0.83	0.95	0.98	0.90	0.99	1.00	1.03	0.84	0.77	0.97	0.90	0.78	0.73	0.58	9	9	9	10	8	8	8	9	8	6	7	10	10	8	7
Dominican Republic	3.88	3.90	3.98	4.09	4.28	4.42	4.43	4.56	4.41	4.44	4.68	4.64	4.55	4.47	4.83	62	62	61	62	63	63	64	64	63	64	64	62	62	61	66
Egypt	5.12	5.12	4.66	4.72	4.87	5.03	4.99	5.13	4.94	4.89	5.25	5.43	5.40	5.37	5.41	77	76	68	68	71	73	71	73	71	69	71	74	74	72	72
El Salvador	4.67	4.66	4.73	4.81	4.97	5.07	5.08	5.18	5.10	5.05	5.26	5.20	5.00	4.97	4.87	69	69	70	73	74	74	74	74	74	71	72	71	68	67	67
Estonia	2.52	2.63	2.76	2.86	2.80	2.92	2.98	3.02	3.02	2.94	2.91	2.88	2.98	3.11	3.12	34	34	34	36	36	38	39	42	42	39	38	38	38	38	38
Finland	0.98	1.00	1.09	1.14	1.06	1.12	1.16	1.17	1.06	0.99	1.17	1.11	1.04	1.00	0.86	14	14	15	13	13	12	13	12	12	10	14	15	17	17	15
France	1.07	1.08	1.19	1.25	1.18	1.27	1.27	1.17	1.09	1.00	1.10	1.07	0.92	0.99	0.81	18	16	17	17	15	16	15	13	15	13	13	14	13	16	13
Germany	1.03	1.08	1.17	1.20	1.16	1.27	1.27	1.26	1.16	1.05	1.21	1.13	1.02	0.98	0.81	16	17	16	14	14	15	16	17	17	15	17	16	16	15	12
Ghana	5.53	5.57	5.65	5.82	5.80	5.64	5.72	5.82	5.88	6.01	6.07	6.07	5.99	6.00	5.98	80	80	80	80	80	79	79	79	80	80	79	80	79	79	78
Greece	2.39	2.37	2.45	2.44	2.24	2.36	2.37	2.11	1.85	1.64	1.73	1.81	1.78	1.81	1.70	33	33	32	31	29	29	31	27	27	23	24	26	26	26	27
Guatemala	4.65	4.58	4.67	4.76	4.93	5.08	5.11	5.20	5.14	5.14	5.30	5.32	5.20	5.16	5.09	68	68	69	71	73	76	75	75	75	73	74	72	72	70	70
Hungary	2.75	2.80	2.95	3.05	3.02	3.08	3.12	2.95	2.81	2.72	2.81	2.78	2.80	2.71	2.71	39	41	41	42	44	43	44	39	35	35	36	34	35	34	33
Iceland	0.83	0.77	0.98	1.21	1.31	1.43	1.51	1.46	1.50	1.38	1.21	0.79	0.77	0.63	0.66	10	7	11	15	19	19	19	20	21	21	16	5	8	6	9
India	5.25	5.21	5.41	5.54	5.68	5.87	5.84	5.84	5.66	5.79	6.18	6.07	6.07	6.08	6.06	78	78	79	79	79	80	80	80	79	79	80	79	80	80	81
Indonesia	4.53	4.49	4.60	4.73	4.79	4.81	4.79	4.88	4.89	5.07	5.26	5.39	5.36	5.49	5.41	66	66	66	69	69	68	68	69	68	72	73	73	73	74	71
Ireland	0.50	0.58	0.75	0.81	1.02	1.15	1.20	1.20	0.98	0.78	0.84	0.72	0.62	0.58	0.47	4	5	5	5	11	13	14	15	10	7	3	4	3	4	5
Israel	1.40	1.40	1.53	1.57	1.65	1.76	1.84	1.80	1.70	1.76	1.87	2.05	1.98	1.94	1.83	24	24	24	24	25	25	25	23	23	25	25	28	28	28	28
Italy	1.36	1.35	1.47	1.52	1.45	1.56	1.53	1.45	1.32	1.16	1.33	1.27	1.16	1.10	0.95	22	22	22	21	20	20	20	19	19	18	20	20	19	19	18
Jamaica	4.19	4.21	4.29	4.34	4.48	4.52	4.43	4.51	4.43	4.40	4.48	4.45	4.27	4.25	4.20	64	64	64	64	64	64	63	63	64	63	61	61	59	57	56
Japan	1.03	0.99	1.05	1.23	1.25	1.25	1.05	1.10	0.98	1.00	1.30	1.25	0.99	0.83	0.69	15	13	13	16	17	14	9	10	11	12	18	18	14	12	11
Jordan	4.39	4.36	4.39	4.43	4.55	4.62	4.62	4.65	4.44	4.35	4.53	4.74	4.59	4.56	4.47	65	65	65	65	66	65	66	66	65	62	62	63	63	63	60
Kazakhstan	3.48	3.53	3.74	3.42	3.32	3.29	3.38	3.52	3.64	3.77	3.82	3.89	3.94	4.31	4.46	57	56	57	53	51	50	50	50	52	56	51	52	51	59	59
Latvia	2.87	2.97	3.10	3.20	3.15	3.24	3.29	3.32	3.35	3.18	3.07	3.11	3.33	3.53	3.54	44	47	47	49	48	48	48	47	47	43	41	39	43	47	46
Lebanon	3.77	3.74	3.80	3.83	3.94	3.97	3.93	4.00	3.77	3.76	4.20	4.28	4.13	4.06	3.89	59	59	59	58	60	60	60	58	55	55	57	58	55	53	49
Lithuania	2.83	2.92	3.10	3.20	3.13	3.25	3.32	3.36	3.35	3.24	3.20	3.28	3.40	3.47	3.51	43	44	46	48	47	49	49	48	48	45	43	44	47	45	45
Malaysia	2.89	2.95	3.04	3.06	2.98	3.08	3.08	3.16	3.16	3.31	3.42	3.38	3.39	3.43	3.31	45	46	44	43	42	45	42	44	44	46	47	46	46	44	42
Malta	1.78	1.80	2.00	2.04	2.08	2.23	2.34	2.38	2.24	2.16	2.37	2.36	2.29	2.20	2.10	26	26	26	26	27	28	29	30	30	30	30	30	31	31	30
Mexico	3.40	3.38	3.47	3.42	3.39	3.44	3.50	3.56	3.46	3.58	3.53	3.44	3.34	3.28	3.24	55	55	54	54	52	51	51	51	49	49	48	47	44	41	39
Morocco	4.73	4.75	4.83	4.89	4.90	4.99	5.05	5.04	4.92	4.83	5.10	5.17	5.08	5.05	4.89	71	73	74	75	72	72	73	70	69	68	70	69	69	69	68
Netherlands	0.91	0.95	1.06	1.13	1.05	1.12	1.13	1.02	0.83	0.71	0.91	0.84	0.78	0.72	0.51	11	12	14	12	12	11	12	8	7	3	4	7	9	7	6
New Zealand	1.35	1.29	1.42	1.54	1.47	1.61	1.62	1.70	1.70	1.81	1.95	1.80	1.77	1.65	1.56	21	20	20	22	21	21	21	22	24	26	26	25	25	25	24
Nigeria	5.42	5.49	5.40	5.17	5.07	5.23	5.32	5.47	5.39	5.48	5.51	5.66	5.63	5.79	5.88	79	79	77	77	76	77	77	77	77	77	76	77	77	77	77
Norway	0.49	0.55	0.62	0.60	0.41	0.44	0.39	0.34	0.32	0.29	0.38	0.33	0.29	0.30	0.33	3	3	3	2	2	2	2	2	2	2	2	2	1	1	2
Oman	2.68	2.76	2.87	2.82	2.70	2.75	2.71	2.77	2.64	2.62	2.54	2.84	2.76	2.80	2.89	35	38	38	35	34	34	34	34	34	34	33	35	34	35	37
Pakistan	5.82	5.77	5.88	5.92	6.25	6.36	6.28	6.36	6.36	6.24	6.36	6.24	6.09	6.10	6.02	81	81	81	81	81	81	81	81	81	81	81	81	81	81	80
Panama	2.90	2.88	2.98	3.10	3.28	3.46	3.54	3.76	3.75	3.75	4.07	4.12	4.02	3.99	3.91	46	43	43	46	50	52	52	53	53	53	55	55	53	51	50
Peru	3.82	3.80	3.94	3.99	4.09	4.16	4.19	4.38	4.33	4.48	4.74	4.78	4.74	4.81	4.77	60	60	60	60	61	61	61	62	62	65	66	64	64	66	64
Philippines	4.75	4.72	4.78	4.84	4.98	5.08	5.14	5.32	5.26	5.36	5.56	5.56	5.55	5.59	5.51	72	71	72	74	75	75	76	76	76	76	77	75	76	76	74
Poland	2.75	2.79	2.97	2.99	2.96	3.06	3.09	3.04	3.00	3.02	3.01	3.17	3.22	3.26	3.32	38	40	42	39	40	42	43	43	41	40	40	42	40	40	43
Portugal	1.95	1.96	2.05	2.18	2.05	2.22	2.30	2.17	1.94	1.84	1.95	1.84	1.85	1.82	1.70	28	28	27	27	26	27	27	28	28	27	27	27	27	27	26
Qatar	0.98	1.04	1.04	1.00	0.68	0.74	0.48	0.66	0.78	1.06	0.97	1.01	0.76	0.78	0.91	13	15	12	11	4	4	3	4	4	16	8	12	6	11	17
Romania	3.24	3.35	3.52	3.63	3.62	3.75	3.85	3.80	3.76	3.62	3.65	3.82	4.04	4.21	4.41	50	53	55	56	55	56	57	54	54	51	49	50	54	55	58
Russia	3.10	3.13	3.34	3.39	2.98	2.88	2.88	2.92	3.05	3.16	3.08	3.22	3.31	3.53	3.69	48	50	52	52	41	37	36	36	43	42	42	43	42	46	48
Saudi Arabia	2.31	2.36	2.33	2.34	2.28	2.39	2.33	2.48	2.58	2.61	2.61	2.69	2.60	2.70	2.75	32	32	29	29	30	30	28	31	33	33	34	33	32	33	34
Serbia	3.97	4.09	4.20	4.30	4.21	4.25	4.39	4.28	4.30	4.11	4.13	4.24	4.41	4.50	4.50	63	63	63	63	62	62	62	61	61	59	56	57	61	62	62
Singapore	0.60	0.66	0.81	0.88	0.97	1.03	1.05	1.11	1.08	1.20	1.32	1.26	1.23	1.24	1.11	5	6	6	7	10	9	10	11	14	20	19	19	21	22	21
Slovakia	2.69	2.75	2.84	2.90	2.86	2.95	2.99	2.97	2.89	2.83	2.98	3.13	3.24	3.30	3.26	37	36	36	37	37	39	40	40	37	37	39	40	41	42	40
Slovenia	2.25	2.32	2.43	2.51	2.41	2.45	2.42	2.32	2.17	1.96	2.14	2.12	2.14	2.10	1.97	31	30	31	32	32	32	32	29	29	29	29	29	29	29	29
South Africa	3.57	3.57	3.78	3.75	3.75	3.77	3.64	3.61	3.48	3.65	3.95	3.78	3.65	3.59	3.56	58	58	58	57	57	57	53	52	50	52	54	49	49	48	47
South Korea	1.35	1.33	1.42	1.49	1.58	1.73	1.77	1.86	1.80	1.92	2.09	1.76	1.63	1.64	1.65	20	21	21	20	24	24	24	25	25	28	28	24	24	24	25
Spain	1.39	1.35	1.50	1.56	1.50	1.64	1.67	1.57	1.40	1.20	1.37	1.28	1.18	1.18	1.06	23	23	23	23	23	22	22	21	20	19	21	21	20	20	20
Sri Lanka	4.62	4.56	4.64	4.69	4.80	4.95	5.02	5.08	5.05	5.21	5.47	5.61	5.49	5.51	5.55	67	67	67	66	70	71	72	72	73	75	75	76	75	75	75
Sweden	0.83	0.78	0.84	0.87	0.80	0.83	0.87	0.85	0.83	0.89	0.96	0.85	0.77	0.76	0.61	7	8	7	6	6	5	6	5	6	8	6	8	7	10	8
Switzerland	0.00	0.00	0.00	0.00	0.08	0.17	0.19	0.11	0.14	0.11	0.30	0.31	0.41	0.35	0.21	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1
Thailand	3.28	3.37	3.45	3.57	3.68	3.72	3.82	3.94	3.85	4.06	4.29	4.34	4.26	4.29	4.17	53	54	53	55	56	54	55	57	57	58	59	59	58	58	55
Trinidad and Tobago	2.79	2.79	2.79	2.75	2.76	2.82	2.85	2.90	2.85	2.88	2.78	2.87	2.80	2.85	2.84	42	39	35	34	35	35	35	35	36	38	35	37	36	36	35
Tunisia	4.86	4.80	4.76	4.75	4.74	4.86	4.82	4.84	4.67	4.62	4.83	4.87	4.75	4.67	4.51	74	75	71	70	68	69	69	68	66	66	67	66	65	64	63
Turkey	3.25	3.06	3.08	3.10	3.09	3.13	3.21	3.31	3.19	3.31	3.37	3.35	3.36	3.31	3.40	51	49	45	45	46	46	46	46	45	47	45	45	45	43	44
Ukraine	5.03	5.17	5.40	5.47	5.13	4.86	4.90	5.05	5.05	5.15	4.85	5.02	5.14	5.31	5.45	76	77	78	78	78	70	70	71	72	74	68	68	70	71	73
United Arab Emirates	1.56	1.57	1.70	1.67	1.50	1.68	1.75	1.85	1.82	1.75	1.73	1.58	1.31	1.22	1.22	25	25	25	25	22	23	23	24	26	24	23	22	22	21	22
United Kingdom	0.92	0.94	0.97	0.89	0.93	1.11	1.13	1.19	1.07	1.00	0.99	0.70	0.62	0.60	0.47	12	11	10	8	9	10	11	14	13	11	9	3	4	5	4
United States	0.47	0.47	0.54	0.60	0.76	0.88	0.88	0.98	0.80	0.75	1.02	0.85	0.63	0.54	0.42	2	2	2	3	5	6	7	7	5	5	10	9	5	3	3
Uruguay	2.77	2.76	2.95	3.00	3.03	3.08	3.19	3.31	3.34	3.57	3.84	4.01	3.98	4.00	4.12	41	37	40	40	45	44	45	45	46	48	52	54	52	52	54
Vietnam	4.72	4.77	4.91	5.02	5.09	5.37	5.39	5.57	5.45	5.49	5.83	5.97	5.90	5.93	6.01	70	74	76	76	77	78	78	78	78	78	78	78	78	78	79

Table A. 9. Interaction Term Regressions (Equations 2 and 3)

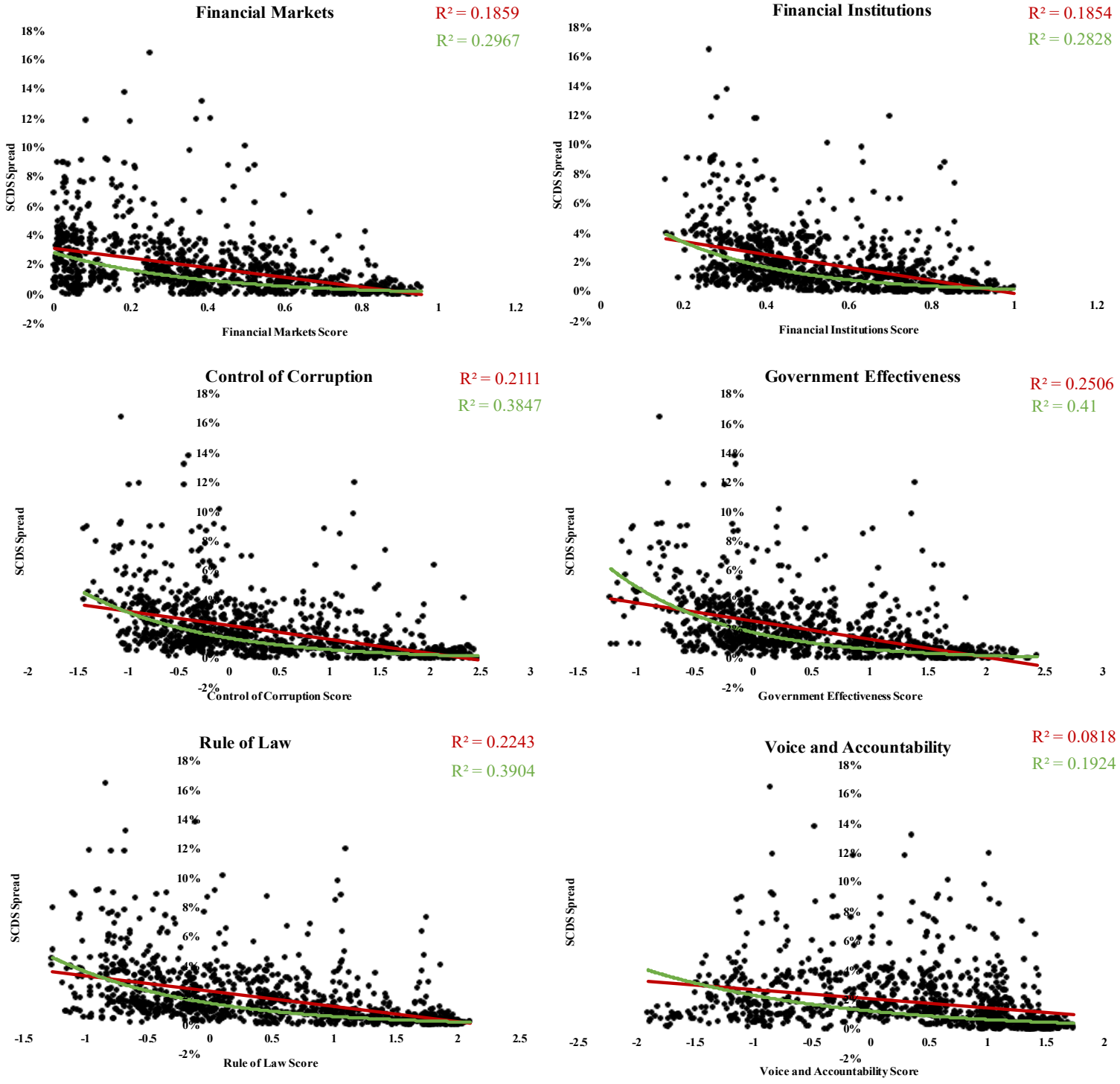
This table presents the outputs of linear regressions of log(SCDS Spreads) against the explanatory variables in the left column, and other explanators omitted from the table. These omitted variables are: 3m LIBOR-OIS Spread, High Yield Spread, ln Banks CDS Spread, OECD CC & LEI, US T 5yt1y, Current Account, FX Real Return Indicator, FX Return Volatility, Real GDP Growth, Reserves/Gross Debt, CR, MM and MR. These regressions were run on the > 5 observations database. The symbol x represents multiplication, OER stands for Overall Economic Risk and GD represents Gross Debt/GDP. (2) & (3) means that the Trust Score/Rank was calculated using equations 2 and 3 respectively . Symbols of *, **, and *** represent statistical significance of 10%, 5%, and 1% respectively. Figures in brackets represent standard errors.

ln SCDS				
No. Obvs	996	996	996	996
Adj R^2	0.827	0.808	0.888	0.876
Root MSE	0.534	0.563	0.429	0.451
cons	49.197 ***	50.7 ***	55.593 ***	54.506 ***
	(8.796)	(9.223)	(7.604)	(7.94)
Gross Debt/GDP	.006 ***	.004 ***	.018 ***	.023 ***
	(.001)	(.001)	(.002)	(.002)
Sovereign Default Indicator	.054 ***	.057 ***	.008 ***	.023 ***
	(.013)	(.014)	(.016)	(.017)
Political Stability	.115 ***	.026 ***	-.206 ***	-.329 ***
	(.042)	(.044)	(.098)	(.102)
Overall Economic Risk	.673 ***	.609 ***	.831 ***	.82 ***
	(.07)	(.048)	(.097)	(.098)
Trust Score(2)	1.036 ***			
	(.072)			
Trust Score(2) x OER	-.092 ***			
	(.014)			
Trust Score(2) x GD	2.17E-04 ***			
	(.)			
Scaled Trust Rank(2)		.382 ***		
		(.03)		
Scaled Trust Rank(2) x OER		-.048 ***		
		(.006)		
Scaled Trust Rank(2) x GD		2.92E-04 ***		
		(.)		
Trust Score(3)			1.688 ***	
			(.137)	
Trust Score(3) x OER			-.163 ***	
			(.025)	
Trust Score(3) x GD			-.002 ***	
			(.001)	
Scaled Trust Rank(3)				.542 ***
				(.079)
Scaled Trust Rank(3) x OER				-.088 ***
				(.014)
Scaled Trust Rank(3) x GD				-.002 ***
				(.)
Country FE			Y	Y

D. Figures

Figure A. 1. Additional Scatterplots

Scatterplots of variables from the samples and their associated SCDS spread (matched by country and year). Two lines of best fit and their R Squared are presented in the top right of each plot. Red represents a linear line of best fit and green an exponential line of best fit.



References

Acharya, V., Drechsler, I. & Schnabl, P., 2014. A Pyrrhic Victory? Bank Bailouts and Sovereign Credit Risk. *The Journal of Finance,* 69(6), pp. 2689-2739.

Altman, E. & Rijken, H., 2006. A Point-in-Time Perspective on Through-the-Cycle Ratings. *Financial Analysts Journal,* 62(1), pp. 54-70.

Ammer, J. & Cai, F., 2011. Sovereign CDS and Bond Pricing Dynamics in Emerging Markets: Does the Cheapest-to-Deliver Option Matter?. *Journal of International Financial Markets, Institutions & Money,* 21(3), pp. 369-387.

Amstad, M., Remolona, E. & Shek, J., 2016. How do Global Investors Differentiate Between Sovereign Risks? The New Normal Versus the Old. *Journal of International Money and Finance,* Volume 66, pp. 32-48.

Ang, A. & Longstaff, F. A., 2013. Systemic Sovereign Credit Risk: Lessons From the U.S. and Europe. *Journal of Monetary Economics,* 60(5), pp. 493-510.

Ardagna, S., Caselli, F. & Lane, T., 2007. Fiscal Discipline and the Cost of Public Debt Service: Some Estimates for OECD Countries. *The B.E. Journal of Macroeconomics,* 7(1), pp. 1-35.

Asteriou, D. & Sarantidis, A., 2016. Political Instability and Stock Market Returns: Evidence From OECD Countries. *Economics and Business Letters,* 5(4), pp. 113-124.

Avino, D. & Cotter, J., 2014. Sovereign and Bank CDS Spreads: Two Sides of the Same Coin?. *Journal of International Financial Markets, Institutions & Money,* Volume 32, pp. 72-85.

Badaoui, S., Cathcart, L. & El-Jahel, L., 2013. Do Sovereign Credit Default Swaps Represent a Clean Measure of Sovereign Default Risk? A Factor Model Approach. *Journal of Banking and Finance,* 37(7), pp. 2392-2407.

Baker, K. H. & Ricciardi, V., 2014. How Biases Affect Investor Behaviour. *The European FInancial Review*, February-March, pp. 7-10.

Baker, S., Bloom, N. & Davis, S., 2016. Measuring Economic Policy Uncertainty. *The Quarterly Journal of Economics,* 131(4), pp. 1593-1636.

Baldacci, E., Gupta, S. & Mati, A., 2011. Political and Fiscal Risk Determinants of Sovereign Spreads in Emerging Markets. *Review of Development Economics,* 15(2), pp. 251-263.

Baltaci, N. & Akyol, H., 2016. Examination of the Macroeconomic Variables Affecting Credit Default Swaps. *Journal of Economics Bibliography,* 3(4), pp. 610-625.

Barberis, N., Huang, M. & Santos, T., 2001. Prospect Theory and Asset Prices. *The Quarterly Journal of Economics,* 116(1), pp. 1-53.

Barberis, R. & Thaler, R., 2003. A Survey of Behavioral Finance. In: G. Constantinides & M. S. R. Harris, eds. *Handbook of the Economics of Finance.* Amsterdam: Elsevier, pp. 1053-1128.

Bekaert, G., Harvey, C., Lundblad, C. & Siegel, S., 2014. Political Risk Spreads. *Journal of International Business Studies,* Volume 45, pp. 471-493.

Bekaert, G., Harvey, C., Lundblad, C. & Siegel, S., 2016. Political Risk and International Valuation. *Journal of Corporate Finance,* Volume 37, pp. 1-23.

Bergh, A. & Bjørnskov, C., 2021. Trust Us to Repay: Social Trust, Long-Term Interest Rates, and Sovereign Credit Ratings. *Journal of Money, Credit and Banking,* 53(5), pp. 1151-1174.

Bernal, O., Girard, A. & Gnabo, J.-Y., 2016. The Importance of Conflicts of Interest in Attributing Sovereign Credit Ratings. *International Review of Law and Economics,* Volume 47, pp. 48-66.

Bernoth, K. & Erdogan, B., 2012. Sovereign Bond Yield Spreads: A Time-Varying Coefficient Approach. *Journal of International Money and Finance,* 31(3), pp. 639-656.

Bernoth, K., von Hagen, J. & Schuknecht, L., 2012. Sovereign Risk Premiums in the European Government Bond Market. *Journal of International Money and Finance,* 31(5), pp. 975-995.

Bolton, P., Freixas, X. & Shapiro, J., 2012. The Credit Ratings Game. *The Journal of Finance,* 67(1), pp. 85-111.

Borgy, V., Laubach, T., Mésonnier, J.-S. & Renne, J.-P., 2011. Fiscal Sustainability, Default Risk and Euro Area Sovereign Default Spreads Markets. *Banque de France Working Paper No. 350.*

Boucher, C. & Tokpavi, S., 2019. Stocks and Bonds: Flight-to-Safety for Ever?. *Journal of International Money and Finance,* Volume 95, pp. 27-43.

Bouri, E., de Boyrie, M. E. & Pavlova, I., 2017. Volatility Transmission From Commodity Markets to Sovereign CDS Spreads in Emerging and Frontier Countries. *International Review of Financial Analysis,* Volume 49, pp. 155-165.

Cantor, R. & Packer, F., 1995. Sovereign Credit Ratings. *Current Issues in Economics and Finance,* 1(3), pp. 1-6.

Chen, H.-Y. & Chen, S.-S., 2018. Quality of Government Institutions and Spreads on Sovereign Credit Default Swaps. *Journal of International Money and Finance,* Volume 87, pp. 82-95.

Click, R., 2005. Financial and Political Risks in US Direct Foreign Investment. *Journal of International Business Studies,* 36(5), pp. 559-575.

Codogno, L., Favero, C., Missale, A. & Thum, M., 2003. Yield Spreads on EMU Government Bonds. *Economic Policy,* 18(37), pp. 503-532.

Coronado, M., Corzo, T. & Lazcano, L., 2012. A Case for Europe: the Relationship Between Sovereign CDS and Stock Indexes. *Frontiers in Finance and Economics,* 9(2), pp. 32-63.

D'Agostino, A. & Ehrmann, M., 2014. The Pricing of G7 Sovereign Bond Spreads – The Times, They are a-changin. *Journal of Banking & Finance,* Volume 47, pp. 155-176.

Daniel, K., Hirshleifer, D. & Subrahmanyam, A., 1998. Investor Psychology and Security Market Under- and Overreactions. *The Journal of Finance,* 53(6), pp. 1839-1885.

Daniel, K., Hirshleifer, D. & Teoh, S. H., 2002. Investor Psychology in Capital Markets: Evidence and Policy Implications. *Journal of Monetary Economics,* 49(1), pp. 139-209.

Das, S. D. & Tufano, P., 1995. Pricing Credit-Sensitive Debt When Interest Rates, Credit Ratings and Credit Spreads are Stochastic. *Journal of Financial Engineering,* Volume 5, pp. 161-198.

Dearmon, J. & Grier, K., 2009. Trust and Development. *Journal of Economic Behavior & Organisation,* 71(2), pp. 210-220.

Dieckmann, S. & Plank, T., 2012. Default Risk of Advanced Economies: An Empirical Analysis of Credit Default Swaps During the Financial Crisis. *Review of Finance,* 16(4), pp. 903-934.

Doshi, H., Jacobs, K. & Zurita, V., 2017. Economic and Financial Determinants of Credit Risk Premiums in the Sovereign CDS Market. *Review of Asset Pricing Studies,* 7(1), pp. 43-80.

Duffie, D., 1999. Credit Swap Valuation. *Financial Analyst Journal,* 55(1), pp. 73-87.

Duffie, D., Pedersen, L. & Singleton, K., 2003. Modeling Sovereign Yield Spreads: A Case Study of Russian Debt. *The Journal of Finance,* 58(1), pp. 119-159.

Duffie, D. & Singleton, K. J., 2003. Chapter 8: Credit Swaps. In: *Credit Risk: Pricing, Measurement, and Management.* New Jersey: Princeton University Press, pp. 173-193.

Dungey, M., Martin, L. & Pagan, A., 2000. A Multivariate Latent Factor Decomposition of International Bond Yield Spreads. *Journal of Applied Econometrics,* 15(16), pp. 697-715.

Duyvesteyn, J., Martens, M. & Verwijmeren, P., 2016. Political Risk and Expected Government Bond Returns. *Journal of Empirical Finance,* Volume 38, pp. 498-512.

Eaton, J. & Gersovitz, M., 1981. Debt with Potential Repudiation: Theoretical and Empirical Analysis. *The Review of Economic Studies,* 48(2), pp. 289-309.
Edwards, S., 1986. The Pricing of Bonds and Bank Loans in International Markets: An Empirical Analysis of Developing Countries' Foreign Borrowing. *European Economic Review,* 30(3), pp. 565-589.

Favero, C., Missale, A. & Beck, T., 2012. Sovereign Spreads in the Eurozone: Which Propsects for a Eurobond?. *Economic Policy,* 27(70), pp. 231-273.

Feng, L. & Seasholes, M. S., 2005. Do Investor Sophistication and Trading Experience Eliminate Behavioral Biases in Financial Markets?. *Review of Finance,* 9(3), pp. 305-351.

Ferdinand Heinz, F. & Sun, Y., 2014. *Sovereign CDS Spreads in Europe—The Role of Global Risk Aversion, Economic Fundamentals, Liquidity, and Spillovers,* s.l.: IMF Working Paper.

Fitch Ratings, 2020. *Sovereign Rating Criteria - Effective from 26 October 2020 to 26 April 2021*. [Online]
Available at: https://www.fitchratings.com/research/sovereigns/sovereign-rating-criteria-26-10-2020
[Accessed 30 June 2021].

Fontana, A. & Schiecher, M., 2016. An Analysis of Euro Area Sovereign CDS and Their Relation with Government Bonds. *Journal of Banking & Finance,* Volume 62, pp. 126-140.

Fuchs, A. & Gehring, K., 2017. The Home Bias in Sovereign Ratings. *Journal of the European Economic Association,* 15(6), pp. 1386-1423.

Gültekin-Karakaş, D., Hisarciklilar, M. & Öztürk, H., 2011. Sovereign Risk Ratings: Biased Toward Developed Countries?. *Emerging Markets Finance & Trade,* 47(2), pp. 69-87.

Gavras, P., 2010. Regulatory Abdication as Public Policy: Government Failure and the Real Conflicts of Interest of Credit Rating Agencies. *Southeast European and Black Sea Studies,* 10(4), pp. 475-488.

Glaeser, E. L., Laibson, D. I., Scheinkman, J. A. & Soutter, C. L., 2000. Measuring Trust. *The Quarterly Journal of Economics,* 115(2), pp. 811-846.

Graham, J. R., Harvey, C. R. & Huang, H., 2009. Investor Competence, Trading Frequency, and Home Bias. *Management Science,* 55(7), pp. 1094-1106.

Gruber, J. & Kamin, S., 2012. Fiscal Positions and Government Bond Yields in OECD Countries. *Journal of Money, Credit and Banking,* 44(8), pp. 1563-1587.

Guillermo, L., Reisen, H. & von Maltzan, J., 1997. *Emerging Market Risk and Sovereign Credit Ratings,* Paris: OECD Publishing.

Hansen, E. & Zegarra, J., 2016. Political Risk and Sovereign Spreads in Latin America. *Academia ,* 29(2), pp. 165-180.

Harrison, M. J. & Kreps, D. M., 1978. Speculative Investor Behavior in a Stock Market with Heterogeneous Expectations. *The Quarterly Journal of Economics,* 92(2), pp. 323-336.

Heinze, G., Wallisch, C. & Dunkler, D., 2018. Variable Selection – A Review and Recommendations for the Practicing Statistician. *Biometrical Journal,* 60(3), pp. 431-449.

Hilscher, J. & Nosbusch, Y., 2010. Determinants of Sovereign Risk: Macroeconomic Fundamentals and the Pricing of Sovereign Debt. *Review of Finance,* 14(2), pp. 235-262.

Hirshleifer, D., 2001. Investor Psychology and Asset Pricing. *The Journal of Finance,* 56(4), pp. 1533-1597.

Hoa Ho, S., 2016. Long and Short-Runs Determinants of the Sovereign CDS Spread in Emerging Countries. *Research in International Business and Finance,* Volume 36, pp. 579-590.

Huang, T., Wu, F. & Zhang, B., 2015. International Political Risk and Government Bond Pricing. *Journal of Banking & Finance,* Volume 55, pp. 393-405.

Huang, W., Lin, S. & Yang, J., 2019. Institutional Quality and Sovereign Credit Default Swap Spreads. *The Journal of Futures Markets,* 39(6), pp. 686-703.

IBM, 2016. *Linear Regression Variable Selection Methods.* [Online] Available at: https://www.ibm.com/docs/en/spss-statistics/24.0.0?topic=regression-linear-variable-selection-methods
[Accessed 04 June 2021].

International Monetary Fund, 2013. A New Look at the Role of Sovereign Credit Default Swaps. In: *Global Financial Stability Report.* s.l.:s.n., pp. 1-35.

Ismailescu, I. & Kazemi, H., 2010. The Reaction of Emerging Market Credit Default Swap Spreads to Sovereign Credit Rating Changes. *Journal of Banking and Finance,* 34(12), pp. 2861-2873.

Jarrow, R. A. & Turnbull, S. M., 1995. Pricing Derivatives on Financial Securities Subject to Credit Risk. *The Journal of Finance,* 50(1), pp. 53-85.

Jeanneret, A., 2018. Sovereign Credit Spreads Under Good/Bad Governance. *Journal of Banking and Finance,* Volume 93, pp. 230-246.

Johansson, T., 2010. Regulating Credit Rating Agencies: The Issue of Conflicts of Interest in the Rating of Structured Finance Products. *Journal of Banking Regulation,* 12(1), pp. 1-23.

Jong-A-Pin, R., 2009. On the Measurement of Political Instability and its Impact on Economic Growth. *European Journal of Political Economy,* 25(1), pp. 15-29.

Kahneman, D. & Riepe, M. W., 1998. Aspects of Investor Psychology. *Journal of Portfolio Management,* 24(4), pp. 52-65.

Kahneman, D. & Tversky, A., 1979. Prospect Theory: An Analysis of Decision Under Risk. *Econometrica,* Volume 47, pp. 263-291.

Kaminsky, G. L. & Schmukler, S., 2002. Emerging Market Instability: Do Sovereign Ratings Affect Country Risk and Stock Returns?. *World Bank Economic Review,* 16(2), pp. 171-195.

Lehkonen, H. & Heimonen, K., 2015. Democracy, Political Risks and Stock Market Performance. *Journal of International Money and Finance,* Volume 59, pp. 77-99.

Longstaff, F. A., Mithal, S. & Neis, E., 2005. Corporate Yield Spreads: Default Risk or Liquidity? New Evidence from the Credit Default Swap Market. *The Journal of Finance,* 60(5), pp. 2213-2253.

Longstaff, F. A., Pan, J., Pedersen, L. & Singleton, K., 2011. How Sovereign Is Sovereign Credit Risk?. *American Economic Journal: Macroeconomics,* 3(2), pp. 75-103.

Longstaff, F. A. & Wang, J., 2012. Asset Pricing and the Credit Market. *The Review of Financial Studies,* 25(11), pp. 3169-3215.

Loomes, G. & Sugden, R., 1982. Regret Theory: An Alternative Theory of Rational Choice Under Uncertainty. *The Economic Journal,* 92(368), pp. 805-824.

Malek, M. ,. B. D. ,. C. J., 2007. On the Inappropriateness of Stepwise Regression Analysis for Model Building and Testing. *European Journal of Applied Physiology,* Volume 101, pp. 263-264.

Maltritz, D., 2012. Determinants of Sovereign Yield Spreads in the Eurozone: A Bayesian Approach. *Journal of International Money and Finance,* 31(3), pp. 657-672.

Manganelli, S. & Wolswijk, G., 2009. What Drives Spreads in the Euro Area Government Bond Market?. *Economic Policy,* 24(58), pp. 191-240.

Martell, R., 2008. Understanding Common Factors in Domestic and International Bond Spreads. *Review of Finance,* 12(2), pp. 365-389.

Moodys, 2020. *How Moodys Rates Sovereigns and Supranational Entities.* [Online] Available at: https://www.moodys.com/Pages/HowMoodysRatesSovereigns.aspx?stop_mobi=yes [Accessed 30 June 2021].

Moro, A. & Fink, M., 2013. Loan Managers' Trust and Credit Access for SMEs. *Journal of Banking and Finance,* 37(3), pp. 927-936.

Moser, C., 2007. *The Impact of Political Risk on Sovereign Bond Spreads - Evidence from Latin America.* Göttingen , German Development Economics Conference.

Naifar, N., 2020. What Explains the Sovereign Credit Default Swap Spreads Changes in the GCC Region?. *Journal of Risk and Financial Management,* 13(10), pp. 245-267.

OECD, 2019. *OECD Business and Finance Outlook 2019: Strengthening Trust in Business,* Paris: OECD Publishing.

Ozturk, H., 2014. The Origins of Bias in Sovereign Credit Ratings: Reconciling Agency Views with Institutional Quality. *The Journal of Developing Areas,* 48(4), pp. 161-188.

Pan, J. & Singleton, K. J., 2008. Default and Recovery Implicit in the Term Structure of Sovereign CDS Spreads. *The Journal of Finance,* 63(5), pp. 2345-2384.

Ramlall, I., 2016. Does Central Bank Quality Determine Sovereign Ratings and Credit Default Swap Spreads: Evidence from the World?. *Journal of Central Banking Theory and Practice,* 5(3), pp. 5-29.

Realdon, M., 2019. Non-Linear Gaussian Sovereign CDS Pricing Models. *Quantitative Finance,* 19(2), pp. 191-210.

Reinhart, C., 2002. Sovereign Credit Ratings Before and After Financial Crises. In: *Ratings, Ratings Agencies and the Global Financial System.* New York: Kluwer Academic Press, pp. 251-268.

Reinhart, C. M., 2002. Default, Currency Crises, and Sovereign Credit Ratings. *The World Bank Economic Review,* 16(2), pp. 151-170.

Reinhart, C. M., Rogoff, K. S. & Savastano, M. A., 2003. Debt Intolerance. *Brookings Papers on Economic Activity,* Volume 1, pp. 1-74.

Rodríguez, I., Dandapani, K. & Lawrence, E., 2019. Measuring Sovereign Risk: Are CDS Spreads Better than Sovereign Credit Ratings?. *Financial Management,* 48(1), pp. 229-256.

S&P Global Ratings, 2017. *Sovereign Rating Methodology.* [Online] Available at: 58. https://www.spratings.com/documents/20184/4432051/Sovereign+Rating+Methodology/5f8c852c-108d-46d2-add1-4c20c3304725
[Accessed 30 June 2021].

Sarwar, G., 2017. Examining the Flight-to-Safety with the Implied Volatilities. *Finance Research Letters,* Volume 20, pp. 118-124.

Smith, G., 2018. Step Away From Stepwise. *Journal of Big Data,* 5(32), pp. 1-12.

Tversky, A. & Kahneman, D., 1992. Advances in Prospect Theory: Cumulative Representation of Uncertainty. *Journal of Risk and Uncertainty,* 5(4), pp. 297-323.

Uribe, M. & Yue, V., 2006. Country Spreads and Emerging Countries: Who Drives Whom?. *Journal of International Economics,* 69(1), pp. 6-36.

Vaaler, P., Schrage, B. & Block, S., 2005. Counting the Investor Vote: Political Business Cycle Effects on Sovereign Bond Spreads in Developing Countries. *Journal of International Business Studies ,* 36(1), pp. 62-88.

Weitzman, M. L., 2007. Subjective Expectations and Asset-Return Puzzles. *The American Economic Review,* 97(4), pp. 1102-1130.

Yalta, A. & Yalta, A., 2018. Are Credit Rating Agencies Regionally Biased?. *Economic Systems,* 42(4), pp. 682-694.

Zak, P. J. & Knack, S., 2001. Trust and Growth. *The Economic Journal,* 111(470), pp. 295-321.