

Financial stress and economic growth: the moderating role of trust

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Abstract

The literature suggests that trust can influence the behavior of economic agents and improve access to financing for both households and corporations. Subsequently, this might have implications for the consumption of households and the investments of corporations. Therefore, trust could mitigate the negative impact of financial stress on economic growth. To test this hypothesis, we use a sample of EU countries over the period 2002-2020 and examine the interaction of trust with financial stress in shaping GDP growth. The interaction term enters the estimations with a positive and statistically significant coefficient, and it therefore mitigates the negative impact of financial stress on economic growth. Furthermore, by disaggregating the GDP into its four main components, we find that the moderating effect of trust flows through the two main components of GDP mentioned above, namely households' consumption and firms' investments. Additionally, we observe that the interaction effect becomes weaker in countries with a higher economic freedom and is strengthened in centre and left-wing governments compared to right-wing economically-oriented ones.

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1 Introduction

The relationship between the functioning of financial systems and economic development has attracted considerable theoretical and empirical attention. For example, Levine (1997) and Levine et al. (2000) refer to work dating back to at least the 1700s and 1800s, asserting that the financial systems promote economic growth (Hamilton, 1781; Bagehot, 1873). Along the same lines, after an exhaustive review of the literature, Levine (2005, p.921) concludes that “the preponderance of evidence suggests that both financial intermediaries and markets matter for growth even when controlling for potential simultaneity bias”.¹ Yet, as discussed in Levine (1997, 2005) and Azariadis and Bucci (2019), others claim that the importance of financial markets in economic development is probably overstressed (Lucas, 1989). Furthermore, Alexiou et al. (2018) highlight that there exists evidence of significant discrepancies among countries due to structural or institutional issues.

Additionally, as discussed in Beck et al. (2014, p.51), “the belief that a big financial system is beautiful has been reconsidered against the backdrop of the Global Financial Crisis of 2008/9 and the sharp output declines brought about by this event”. Therefore, it is not surprising that the global financial crisis renewed the interest on the study of the aforementioned relationship (e.g. Breitenlechner et al., 2015; Alexiou et al., 2018; Nguyen et al., 2019; Asteriou and Spanos, 2019). However, it also motivated many researchers to shift their attention from the size of the banking, stock and bond markets, to the relationship between episodes of financial stress and economic activity.² In general, these studies capture financial stress with indices that cover various market segments, and examine either a group of countries (e.g. Cardarelli et al., 2011, Cevik et al., 2016), or specific countries like France (Aboura and Roye, 2017), the USA (Chau and Deesomsak, 2014; Hubrich and Tetlow, 2015; Ferrer et al., 2018), and Turkey (Polat and Ozkan, 2019).

Most of these studies document that the increase of financial stress dramatically reduces economic activity. However, this is not always the case. Some studies conclude that this association holds primarily during periods of high financial stress and it becomes less important during normal times (Hubrich and Tetlow, 2015; Ferrer et al., 2018; Lhuissier, 2017). Others find that not all countries are influenced in the same way. For example, Cardarelli et al. (2011) mention that out of 113 financial stress episodes identified for 17 advanced economies over the period 1980-2007, 29 were followed by an economic slowdown, and another 29 were followed by recessions. The remaining 55 financial stress episodes were not followed by an economic downturn. Similarly, Stolbov and Shchepeleva (2016) conclude that: (i) financial stress has an adverse effect

¹ For early studies see e.g. Goldsmith (1969), King and Levine (1993), Levine and Zervos (1998), Benhabib and Spiegel (2000), Calderón and Liu (2003) and Guiso et al. (2004). Most recent work includes Langfield and Pagano (2016), Jerzmanowski (2017), Durusu-Ciftci et al. (2017), Law et al. (2018). Others shed further light on this relationship by looking at specific characteristics of financial intermediaries. For example, Andrianova et al. (2012) focus on the impact of government ownership of banks on economic growth. A somewhat related group of studies examines the impact of financial development (Bena and Jurajda, 2011) and the quality of banking institutions (Mirzaei and Moore, 2019) on corporate growth, with existing evidence suggesting that such differences in firm growth could explain GDP differences across countries (Alam, 2017).

² A related strand of the literature proposes the construction of financial stress indices without relating them to economic activity (Illing and Liu, 2006; Lo Duca and Peltonen (2011), Louzis and Vouldis, 2012; Oet et al., 2011; Duprey et al., 2017). The construction of a new index is outside the scope of the present study.

on economic activity in 9 out of the 14 countries in their sample, and (ii) for some major economies (Russia, Brazil, Turkey) this impact is quite sizeable. Claessens et al. (2010) also highlight that the magnitude of the impact of financial stress on economic activity differed greatly among countries, and they refer for example to the cases of Romania's and Latvia's GDPs, which decreased by more than 25% between 2008 and 2009, while at the same time Egypt and Lebanon continued recording brisk growth rates.

A question that naturally emerges is: what drives such differences among countries? In the present study, we attempt to shed further light on the impact of financial stress on economic growth. In more detail, we examine, to the best of our knowledge, for the first time in the literature whether country-level informal institutional factors -such as trust- have a moderating role in this relationship. Our investigation is further motivated by related studies that focus on bank stability and reveal that certain country-specific factors play a moderating role (Fernández et al., 2016; Neanidis, 2019).³

Within this context, our work also relates to recent studies that reveal the moderating role of trust in economic phenomena. For example, James Jr (2015) concludes that the effect of generalized morality on economic growth appears to be manifested through generalized trust when economic institutions are weak. Furthermore, Engelhardt et al. (2021) conclude that stock market volatility in reaction to the announcements of COVID 19 cases is significantly lower in high-trust countries. Similarly, but in a broader way, our work also relates to recent studies that examine the moderating role of formal institutions (Mullings, 2017; Qiang and Jian, 2020; Catrinescu et al., 2009; Zergawu et al., 2020).⁴ However, to the best of our knowledge, no study has examined whether trust has a moderating role in the relationship between financial stress and economic growth, and we aim to fill this gap in the literature.

As we discuss in more detail in Section 2, the impact of financial stress on economic growth may depend on the expectations and behavior of market participants, which are shaped by trust. In other words, we expect that, due to differences in the level of trust, market participants will react differently under different levels of financial stress, amplifying or mitigating its impact on economic growth. We consider two different aspects of trust, namely *social trust* and *trust to politicians*.

Our analysis is based on the use of quarterly data on GDP growth and the financial stress index of Duprey et al. (2017) for a sample of EU countries over the period 2002 - 2020. To avoid issues of reverse causality and confounding effects, further to a dynamic fixed effects baseline setting and controls for typical drivers of economic growth, we make use of generalised method of moments (GMM) estimators. The fact that our

³ For example, Fernandez et al. (2016) underline that the contribution of banking stability in the reduction of economic volatility is higher in countries with lower bank market competition. In a somehow related context, Neanidis (2019) finds that banking regulation mitigates the adverse effects of capital flows volatility on economic growth. On a similar note, Ahlin and Pang (2008) show that financial development and corruption interact in shaping economic growth.

⁴ For example, Mullings (2017) examine whether the globalization's effect on growth is moderated by institutional quality. While he finds evidence of direct effects of institutional quality on economic growth, he fails to conclude that institutions moderate the effect of economic globalization on real GDP per capita growth. Qiang and Jian (2020) reveal that institutions play a role in the relationship between natural resource endowment and economic growth. Catrinescu et al. (2009) conclude that the effect of remittances on growth depends on whether countries' institutions are conducive to a productive use of remittances. Zergawu et al. (2020) find a positive correlation between infrastructure capital and economic growth in countries with good institutional quality; however, this relationship weakens as institutional quality deteriorates.

sample is solely comprised of EU countries conveniently permits us to focus on the moderation effects for the following reason. EU countries have different trust values; however, at the same time they share various regulatory aspects of the financial markets (e.g. EU Directives). Additionally, most of the countries in our sample have a common monetary policy under the European Central Bank, and they are all members of the European System of Central Banks. Therefore, it might be easier overall to isolate the role of trust, without worrying much about substantial differences in formal institutions and the regulatory environment of the financial markets.

Our results reveal a robust moderating impact of trust upon the relationship between financial stress and the real economy. We find that this effect becomes weaker in magnitude during the global financial crisis, or vanishes if trust to politicians is used as a proxy in particular. The decomposition of GDP into its main components reveals that the moderating role of trust is present in the case of consumption, government spending and investments. Motivated by the results of Williamson and Mathers (2011) we also consider the role of economic freedom. By interacting the moderation effect with the economic freedom index, we find that the moderation effect becomes weaker in magnitude as the economic freedom index increases. Furthermore, based on the findings of Galasso (2014) we consider the role of the economic orientation of the political parties. The results remain invariant in statistically significant terms; however, we find that in centre and left-wing governments the moderation effect increases in magnitude compared to right-wing ones.

The rest of the paper is organized as follows. In Section 2, we provide a background discussion of the literature and outline how trust could play a moderating role in the relationship between financial stress and economic growth. Section 3 presents the data and methodology. Section 4 presents the empirical results and additional/robustness analyses, and Section 5 concludes the paper.

2 Theoretical considerations

Several studies suggest that episodes of financial stress lead to economic downturns and considerable losses in terms of GDP (Cecchetti et al., 2009; Cardarelli et al., 2011; Polat and Ozkan, 2019; Ferrer et al., 2018). At the same time, cross-country work by Knack and Keefer (1997) reveals a statistically significant and positive effect of trust on growth, an association that was confirmed in follow up studies (Zak and Knack, 2001; Beugelsdijk et al., 2004; Bjornskov, 2012; Agénor and Dinh, 2015).⁵ This provides a first indication that trust could somehow mitigate the negative effect of financial crisis on GDP growth. A question that emerges concerns the mechanisms through which trust could impact the transmission of a financial shock into the real economy. As we discuss in more detail below: (i) the literature suggests that trust has various implications for the behavior, decisions, and outcomes of individuals and firms, (ii) this relationship between trust and financial

⁵ Roth (2009) obtains somewhat mixed results. When examining the relationship between interpersonal trust and economic growth in a cross-section of countries using either a cross-section, pooled panel, or random-effects design, he confirms the positive results of the aforementioned studies. However, using a panel data setting with a fixed-effects estimation he finds that economic growth is negatively related to an increase in trust.

decisions might become more important during the crisis, and (iii) all these have implications for the main components of GDP, like household consumption and gross capital formation (i.e. firm investments).⁶

To be more specific, there is no doubt that economic growth is driven by “real” factors, like the quantity and quality of capital stock, the state of technical knowledge, the creativity and skills of entrepreneurs (Bernanke, 2007). However, as Bernanke (2007) argues, the transformation of an entrepreneurship idea into a profitable commercial enterprise, the expansion and modernization of corporate plants, the purchase of a house or the financing of the education of family member, they all require having access to financial markets that provide the necessary funds. Thus, he highlights that healthy financial conditions are a prerequisite for a modern economy to realize its full potential, and at the same time he mentions that adverse financial conditions may prevent an economy from reaching its potential. These arguments appear to be consistent with past theoretical work showing that: (i) business downturns lower net worth, enhance agency costs, and decrease investment, which amplifies the downturn (Bernanke and Gertler, 1989), and (ii) endogenous developments in credit markets work to amplify and propagate shocks to the macroeconomy (Bernanke et al., 1999).⁷ Indeed, follow up studies confirm that one of the main problems that firms and individuals face during the crisis is that there is a shortage of financing and at the same time investors demand higher risk premiums to provide financing (Zubair et al., 2020; Meng and Yin, 2019). This has implications for individuals’ consumption (Gerlach-Kristen et al., 2013) as well as for firms’ tech spending, employment and capital spending (Campello et al., 2010; Zubair et al., 2020), all of which could lead to a reduction in GDP growth (Andersen et al., 2016; De Nardi et al., 2011).⁸

Within this context, trust can play a vital role in mitigating the negative effects of the crisis. This is because trust and social capital can reduce transaction costs, improve the flow and credibility of information in the market, and mitigate agency problems (Uzzi, 1996; Hilary and Huang, 2015; Hoi et al., 2019; DuPont and Karpoff, 2019), with implications for the perceived creditworthiness of economics agents and the availability of funds in the market. For example, the theoretical model of Sangnier (2013) predicts that trust relaxes credit constraints and favors long-term investment, which in turn diminishes investment procyclicality and lowers macroeconomic volatility. Empirical studies also show that trust may influence the behavior of economic agents and improve the conditions in the financial markets in numerous ways. Many of these studies

⁶ Data from the World Bank for 2019 show that a global level, the household and NPISH final consumption expenditure - as a percentage of GDP- equals 57.82%, while the corresponding percentage for Gross capital formation equals 25.38%. In the case of the EU-28, according to Eurostat, the 2019 figures were 54.87% and 21.78%, respectively. Thus, in both cases, these two components of GDP account collectively for over two thirds of GDP. The other two components are General government expenditures (16.89% of GDP at a global level in 2019; 20.39% at the EU-28 level) and Net exports (0.77% of GDP at a global level in 2019; 2.96% at the EU-28 level).

⁷ Bernanke (2007) also mentions that the financial accelerator effects, discussed in Bernanke et al. (1999), are not constrained to firms and capital spending, but they may operate through household spending decisions as well.

⁸ The survey of Cambello et al. (2010) reveals that during the financial crisis, 86% of constrained U.S. firms bypassed attractive investments due to difficulties in raising external finance. Turning to consumption, De Nardi et al. (2011) highlight that not only the financial crisis marked the most severe and persistent decline in aggregate consumption since WWII. It took nearly three years for total consumption to return to its level just prior to the recession. Similarly, Andersen et al. (2016) refer to aggregate consumption of Danish households during the crisis, mentioning that after the 1st quarter of 2008, it dropped by more than six percent within a single year, this being followed by an extremely slow recovery in the subsequent years.

document that social trust improves the availability of various types of financing. This includes the availability of trade credit (Wu et al., 2014), the success rates of crowdfunding campaigns (Lin and Pursiainen, 2020), the availability of venture capital financing (Bottazzi et al., 2016), and the availability of bank financing (Chen et al., 2016).⁹ At the same time, social trust lowers the cost of financing, regardless of whether this is measured in terms of bank loan spreads (Chen et al., 2016; Hasan et al., 2017; Alvarez-Botas and Gonzalez, 2021), bond spreads (Hasan et al., 2017; Meng and Yin, 2019), or the cost of equity (Gupta et al., 2018). Most importantly, existing evidence also suggests that when financial crises impede the financing through the bank-lending channel, greater social trust enables access to informal financing through trade credit, moderating the effects of the crises on corporate profits and employment (Levine et al., 2018).

Another channel through which social trust may influence credit constraints and economic activity is through its ability to serve as social collateral. For example, Kiyotaki and Moore (1997) propose a theoretical model that illustrates the role of collateral in the interaction of credit constraints with aggregate economic activity over the business cycle. Their model assumes that credit limits are influenced by the prices of the collateralized assets, and hence during an economic downturn, agents are affected by the depreciation of assets used as collateral. Being unable to borrow more, firms are forced to decrease their investments, which results in less revenue, lower net worth, further constraints, and additional reductions in their investments during the next period. They conclude that the interaction between credit limits and asset prices works as a transmission mechanism that amplifies and spillovers the effects of shocks. Along the same lines, Karlan et al. (2009) develop a theoretical model where network-based trust can be used as social collateral to secure informal borrowing, a projection that they confirm using Peruvian data. Follow up empirical studies, confirm this finding in other settings. For example, Chen et al. (2016) find that privately controlled firms in trust-intensive regions in China obtain loans with fewer collateral requirements. Hasan et al. (2017) reach a similar conclusion for firms headquartered in US counties with higher levels of social capital, and Papadimitri et al. (2020) confirm these findings in a cross-country setting. Thus, by serving as a substitute to collateral trust may allow firms and individuals to continue borrowing during the crisis. Therefore, drawing upon the work of Kiyotaki and Moore (1997) and upon studies that illustrate that trust and social capital can be a substitute to collateral, we hypothesize that this is another mechanism through which trust can play a moderating role in the relationship between financial distress and economic output.

Studies also show that trust has an impact on the stock market, which is another source of funds for corporations. In more detail, the literature suggests that trust is positively associated with stock market participation, depth and liquidity (Guiso et al., 2004, 2008; Ng et al., 2016), and negatively associated with crash risks and stock market volatility (Li et al., 2017; Engelhardt et al., 2021). More importantly, existing studies also reveal that trust might become even more important during periods of crisis. For example, Mazumder (2020) shows that, during the COVID-19 crisis period, firms headquartered in high social trust US

⁹ Duffner et al. (2009) also document the role of trust for venture capital financing. However, their study focuses on trust levels in individual relationships between venture capital firms and their respective portfolio companies and examines their relationship with investment success.

states perform better (in terms of stock returns) than their counterparts from the low social trust states. This reliability becomes more important when the macro-level trust in the country deteriorates due to the sudden emergence of a crisis. Engelhardt et al. (2021) confirm this finding in a cross-country setting showing that the reaction of stock markets in terms of volatility, is significantly lower in high-trust countries.

Another implication of all the above is that trust appears to lower the probability of default of both individuals and corporations. This is important because default on mortgages has been regarded as central to the great recession. While certain borrowers decided not to honor their loan obligations, even if they could afford to make the payments, others chose to remain current. The literature suggests that social trust is one of the reasons explaining this behavior. For example, Lopes (2008) concludes that small decreases in the utility cost associated with the social embarrassment of filing for personal bankruptcy can lead to significant increases in the default rate. Similarly, Li et al. (2020) show that social capital significantly affects the likelihood of mortgage delinquency, an effect that is more pronounced when the default is more likely to be strategic. Furthermore, they find that the impact of social capital to mortgage delinquency increased after the recent financial crisis. Clark et al. (2021) also conclude that borrowers in communities with greater social capital are significantly less likely to default on loans. These observations seem to extend to corporations as well, with both country-specific and cross-country studies showing that the probability of firm default is significantly higher in regions with lower trust (Chen et al., 2016; Ho et al., 2020). Apparently, higher corporate default rates could translate into lower investments, higher unemployment rates, and lower GDP growth.

The majority of the existing studies focus on the role of social trust. However, political trust (i.e. trust in Government or politicians), may also have implications for the behavior of individuals and corporations during the crisis. For example, a post-crisis report by the Organization for Economic Cooperation and Development (2013, p.20) mentions that *“As governments search for a path to economic recovery, the challenge they face is not only knowing what policies to choose, but also how to implement those policies. Yet, capacity to implement depends crucially on trust. Without trust in governments, markets and institutions, support for necessary reforms is difficult to mobilise, particularly where short-term sacrifices are involved and long-term gains might be less tangible [. . .]. A decline in trust can lead to lower rates of compliance with rules and regulations. Citizens and businesses can also become more risk-averse, delaying investment, innovation and employment decisions that are essential to regain competitiveness and jump-start growth. Nurturing trust represents an investment in economic recovery and social well-being for the future”*. Although they approach the issue of trust in government from a different perspective, Camussi et al. (2018) also discuss its importance, mentioning that voters are more willing to pay taxes to finance welfare programs if they believe that tax receipts will not be wasted due to an inefficient bureaucracy or to influence peddling. Their empirical results show a positive association between trust in government and the social expenditure (% of total expenditure) in Italian municipalities. Along the same lines, Bergh and Bjørnskov (2011) find that countries with higher historical trust levels have significantly higher public expenditure as a share of GDP. The benefits of trust in Government is also supported in the work of Engelhardt et al. (2021). They find that stock market volatility - in relation to COVID announcements - is lower in countries with higher trust to the government. Taken together with their results on interpersonal trust, they conclude that trust in a government’s actions during

the pandemic as well as trust in fellow citizens obeying the government's orders significantly reduces uncertainty among investors.

Based on the above discussion, we formulate our hypothesis as follows: *Social trust and political trust have a moderating effect on the negative impact of financial crisis on economic growth.*

3 Samples, Variables and Methodology

In order to measure the moderating effects of trust (Trust) on the association between the financial stress index (FSI) and real per capita GDP growth (RGG), we follow Buch and Neugebauer (2011) and employ a dynamic fixed effects (Within Group) estimation (Bond, 2002) of the following linear unobserved effects model:

$$RGG_{i,t} = a_0 + a_1RGG_{i,t-1} + \beta_1Trust_{i,t-1} + \beta_2FSI_{i,t-1} + \beta_3Trust_{i,t-1} \times FSI_{i,t-1} + \gamma X_{i,t-1} + \delta T_t + \zeta C_i + \varepsilon_{i,t} \quad (1)$$

where \mathbf{X} is a vector of control covariates -discussed below- saturating the model, \mathbf{T} denotes yearly and quarterly fixed effects that capture cyclical patterns across time and unobserved macroeconomic developments similar across countries (e.g. global demand and supply shocks). \mathbf{C} denotes country fixed effects that capture the individual time-constant individual heterogeneity across countries and $\varepsilon_{i,t}$ is the idiosyncratic error.

To empirically test this specification, we employ quarterly data from 23 EU countries over the period 2002-2020. We focus on these countries for a number of reasons. First, as discussed in the introduction, it allows us to consider a group of countries that are heterogenous in terms of trust, as well as, financial stress and economic growth, but at the same time they have numerous similarities in terms of the monetary and the financial services' regulatory environment. Second, it allows us to adopt a well-known Financial Stress Index from the European Central Bank's statistical Warehouse. Third, it allows us to use data from the European Social Survey and update trust indicators in relatively frequent time intervals.

The dependent variable ($RGG_{i,t}$) measures the real per capita GDP growth (log differences) in country i and time t , elaborated on data obtained from Eurostat. The financial stress index from the European Central Bank's statistical Warehouse is based on the methodology of Duprey et al. (2017). For the construction of this index, Duprey et al. (2017) follow the approach of the composite indicator of systemic stress proposed by Hollo et al. (2012) that relies on the correlation of stress across different market segments for the euro area. In particular, the index captures the conditions in the following three financial market segments: (i) equity markets, (ii) bond markets, and (iii) foreign exchange markets.¹⁰ In each case, Duprey et al. (2017) use two indicators that capture volatility and large losses.¹¹ Then, to capture the overall systemic risk, they aggregate

¹⁰ Duprey et al. (2017) mention that the decision to leave out of their main financial stress index indicators for the banking and housing sector is driven by data limitations across both time and cross-section dimensions.

¹¹ In the case of the equity market stress, they use: (i) the monthly realized volatility that is computed as the monthly average of absolute daily log-returns of the real stock price index, and (ii) the cumulative maximum loss that corresponds to the maximum loss compared to the highest level of the stock market over two years. In the case of bond market stress they use: (i) the monthly realized volatility, computed as the monthly average of absolute daily changes in the real yield on 10-year government bonds, and (ii) the

the sub-indices for the three financial market segments based on a portfolio theory approach that weights each sub-index by its cross-correlation with the others.

The trust indicators are constructed with the use of data from the European Social Survey (ESS).¹² Given that the ESS is bi-annual we first calculate the values for the years that data are available (e.g. 2002, 2004, 2006,..., 2018). Then we calculate the values for the intermediate points using interpolation.¹³

We use Principal Component Analysis (PCA) to construct an overall index of trust. We consider a total of four questions, the first three capturing aspects of social trust (Beilmann et al., 2018), and the last one capturing political trust. Consistent with many studies, the first question focuses on interpersonal trust, and it is as follows: “Generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people?”. Answers to this question could range from 0 (you can’t be too careful) to 10 (most people can be trusted). In constructing the social trust index, Beilmann et al. (2018) also consider the answers to the following two questions: (i) “Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?” As before, answers could range from 0 (most people would try to take advantage of me) to 10 (most people would try to be fair); and (ii) “Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?”. The answers are again in the range of 0 (people mostly look out for themselves) to 10 (people mostly try to be helpful). The fourth is an indicator of trust to politicians, that is estimated on the basis of the answers to the following question: please tell me on a score of 0-10 how much you personally trust each of the institutions I read out: Politicians. A value of 0 denotes that there is no trust at all to politicians and a value of 10 corresponds to complete trust. To consolidate these four indicators of trust into a single metric, we use the first component of the PCA, which explains approximately 89% of the variation. Wherever relevant and feasible -due to space reservations-, we also report estimations on all four trust questions, although the results remain qualitatively similar.

Turning to the control variables, as in the study of Buch and Neugebauer (2011), we control for population growth, the school enrolment rate for secondary education (upper secondary and post-secondary non-tertiary education), government expenditure to GDP, and foreign direct investments intensity. In addition, we control for trade-openness measured as the country’s sum of exports and imports to its GDP (Neumayer, 2002), as trade barriers may be associated with growth (Yanikkaya, 2003). A more detailed description and the sources of the data, summary statistics and Pearson’s correlation coefficients are given in the online supplementary appendix. All data were winsorised at their 1st and 99th percentiles to avoid inclusion of extreme values in the sample.

cumulative difference corresponding to the maximum increase in basis points of the real government bond spread with respect to Germany over a two-year rolling window. In the case of foreign market exchange stress they use the: (i) realized volatility, computed as the absolute value of the monthly growth rate of the real effective exchange rate, and (ii) the cumulative change over a six months period.

¹² For more information and documentation, the interested reader is referred to the ESS official website, <https://www.europeansocialsurvey.org/data/>.

¹³ We have used three types of interpolation, namely naive, linear and cubic splines, finding qualitatively no difference. We report those results obtained with the linear type of interpolation being more frequently encountered. The time window 2018-2020 uses naive extrapolation.

4 Empirical Results

4.1 Baseline Results

Table 1 shows the baseline results obtained from the Dynamic Fixed Effects model for the different proxies of Trust.¹⁴ Similar to Buch and Neugebauer (2011), we find that the lagged response variable enters the regression with an insignificant coefficient, along with other covariates. Our interest lies on the bottom part of the table, where we present the interaction between the main trust proxy (PCA, Column 1) or its elementary components (Columns 2 to 5) with *FSI*. From a conceptual point of view, that is the main (conditional) effect of interest to this study. From a technical point of view, when multiplicative terms enter a model, the lower-order coefficients are of no significant use in terms of classic hypothesis testing (Braumoeller, 2004). Looking at the main consolidated proxy (Column 1), there is a conditional effect of Trust on the effect of *FSI* on *RGG*, which is confirmed at the 5% ($p = 0.013$) level of significance. In particular, the more trust there exists in a country, the lower the negative effect of *FSI* is on *RGG*.

[INSERT TABLE 1 ABOUT HERE]

Similar moderation effects can be witnessed in Columns 2 to 4 of the same table, where trust is proxied through the elementary components of the Social Trust Index (Fair, Helpful, Interpersonal Trust). In two out of three cases, the moderation effect enters the regression with a statistically significant coefficient at the 1% or 5% ($p = 0.015$). Equally statistically significant is the moderation effect of trust to politicians (Column 5 of the table).

To shed further light on the channels of this moderation effect, we decompose the GDP into its four main components, namely *consumption*, *investments*, *governmental spending*, and *net exports*. We re-estimate the baseline specification and we present the results in Tables 2 and 3. The results in Columns (1) to (4) of Table 2 seem to point out the channels of influence are mainly attributed to the components of consumption, governmental spending, and investment. However, there are some differences between the different trust indicators presented in Tables 2 and 3. More detailed, in the case of investments, the interaction of *FSI* and the social trust indicators is either insignificant (Helpful, Interpersonal trust) or statistically significant at the 10% level only (Fair). Therefore, the impact of financial stress on corporate decisions to invest does not differ across different levels of social trust. However, trust to politicians plays a mitigating role in the case of investments. This finding appears to be consistent with the view that corporations dislike political and

¹⁴ Let us note here that the use of Fixed Effects can be seen as a strong test of significance for our results, since this approach raises the bar for testing our hypotheses (Wilson and Butler, 2007). That is because trust is generally slowly changing over time, or in other words “sluggish” (Papadimitri et al., 2020), very slow evolving across the time dimension. As Beck (2001) writes, “if a variable [...] changes over time, but slowly, the fixed effects will make it hard for such variables to appear either substantively or statistically significant [...]. If an F-test indicates that fixed effects are required, then researchers should make sure they are not losing the explanatory power of slowly changing or stable variables of interest”. We do confirm the validity of Fixed Effects compared to Pooled OLS via an F-test, as well as the specification validity of Fixed versus Random Effects over the inclusion of the means of the time-variant variables (Mundlak, 1978), the joint significance of which highlights that time-invariant unobservables are related to our regressors and that the fixed-effects model is appropriate.

economic policy uncertainty (Julio and Yook, 2012; Baker et al., 2016; Bloom et al., 2019).¹⁵ In our context, it seems that when uncertainty is reduced because of trust to politicians, the negative impact of financial stress on firm investments is lower in countries with high trust to politicians compared to low trust ones. Turning to net exports, they do not appear to be influenced by the interaction of financial stress and trust. One potential reason is that net exports are based on bilateral transactions, and hence one may have to look at the level and differences of trust across country pairs (trading partners).¹⁶ At the same time, as mentioned earlier, net exports account for only 3% of the GDP at the EU-28 level. Therefore, it is not surprising that the insignificance of the moderation effect in the case of net exports does not influence our findings for the aggregate GDP growth.

[INSERT TABLES 2 AND 3 ABOUT HERE]

4.2 Robustness & Additional Analyses

The use of a dynamic fixed effects panel method alleviates -to some extent- concerns about the endogeneity surrounding the model in eq.(1) by capturing the time-constant country-specific features and the issue of simultaneity through the addition of the lagged response. However, one may argue that endogeneity may run deeper in the model and thus may be not adequately addressed. Moreover, whilst the utilisation of quarterly data in a span of 19 years ($T = 72$ per balanced panel) allows us to reduce the issue of Nickell's bias (Nickell, 1981), this actually never vanishes, rendering the model's coefficients potentially biased (Bond, 2002). For these reasons, similar to Buch and Neugebauer (2011), we implement a one-step system GMM (Blundell and Bond, 2000) approach in which we define the lagged response variable (RGG_{it-1}) and the lower (FSI , $Trust$) and higher order ($FSI \times Trust$) multiplicative terms as endogenous variables that are instrumented with their lagged observations. We include all valid instruments in a collapsed form (Roodman, 2009a) to avoid instrument proliferation.¹⁷ These estimations confirm the ones of the baseline specification, with the trust proxies having a moderating effect upon the relationship between FSI and RGG .

[INSERT TABLE 4 ABOUT HERE]

¹⁵ For example, Julio and Yook (2012) find that during election years, US firms reduce investment expenditures by an average of 4.8% relative to nonelection years. They conclude that political uncertainty leads firms to reduce investment expenditures until the electoral uncertainty is resolved. Baker et al. (2016) also confirm that policy uncertainty is associated with reduced investments in the US. Similarly, Bloom et al. (2019) find that the anticipation of Brexit reduced investment of UK firms by about 11%. Finally, Jucá and Fishlow (2020) show that changes that satisfy expectations of a positive change do not lead to a reduction in investments.

¹⁶ For example, Guiso et al. (2009) find that lower bilateral trust leads to less trade between two countries. Roy et al. (2014) also investigate the role of social trust on bilateral trade. However, our aim is to examine aggregate trade conditions as a component of GDP rather than to explain bilateral trade. Hence, such an exercise is outside the scope of our study.

¹⁷ For the superiority of the collapsed form in a simulated environment see Roodman (2009b). Our results are still confirmed for different lag counts or using principal components to reduce the proliferation further in a minimally arbitrary way (see e.g. Kapetanios and Marcellino, 2010).

In additional analysis, we delve into how the moderation effects change across different periods in our sample. In particular, the results in Table 5 show how the moderation effect changes in times of economic despair such as that of the global financial crisis compared to the rest of the period examined in our sample. Following Dabrowski (2010), we define the period of the crisis as that of 2007-2010. With respect to the statistical significance of the coefficients of the interactions of interest, the results do not change. Considering the PCA proxy (Column 1), based on the marginal effects (unreported for brevity) and assuming that the PCA trust indicator is equal to the average of the effective sample (i.e. crisis only or excluding it), a standard deviation increase in FSI, will result in a 0.39% decrease in growth in the following quarter in the case of the crisis sub-sample. When we exclude the crisis period, the corresponding figure is 0.16%. This shows that the moderation effect is weaker during the period of the global financial crisis compared to the rest of the years. The proxies of the social trust index are qualitatively similar in magnitude and significance. However, when looking at the trust to politicians, the statistical significance is eliminated during the crisis. One potential reason for this finding is that the 2008 economic crisis had a negative impact on the level of political trust in numerous European countries (Kroknes et al., 2015; Foster and Frieden, 2017; Hooghe and Okolikj, 2020). Furthermore, existing evidence suggests that this decrease in trust to politicians was not limited to particularly severe cases, but it was rather widespread and included countries that did not experience the full devastating impact of the economic crisis (Hooghe and Okolikj, 2020).

[INSERT TABLE 5 ABOUT HERE]

Furthermore, we extend Buch and Neugebauer's (2011) specification and explore the role of economic freedom, broader institutional overtones and the political orientation of the government. The results are shown in table 6. The use of economic freedom is motivated by the findings of Williamson and Mathers (2011) who conclude that while culture is important for growth in the absence of economic freedom, this significance diminishes in the presence of economic freedom. To account for this, we first include the economic freedom index from Heritage Foundation as a control variable in our specification. The results are invariant in terms of statistical significance. Then we create a three-way interaction, with the use of the economic freedom index and the two-way interaction of FSI and Trust. The coefficient of the three-way interaction is negative and statistically significant. Therefore, the two-way interaction of FSI and Trust becomes weaker in magnitude as economic freedom increases.

We have already explored the trust to politicians, implying that its impact on economic growth during a period of financial stress, would be channelled through the expectations about the politicians' actions. At this stage, we provide a further test, motivated by the results of Galasso (2014). In more detail, his empirical findings suggest that during crises, right-wing governments refrain from promoting reforms, but they also object to stepping up financial market regulations. At the same time, it appears that center and left-wing governments contribute more substantially to reforms. According to Galasso (2014) these results suggest that economic crises are unusual periods, during which reforms may be more necessary in order to boost economic efficiency, and yet less acceptable to individuals and enterprises facing tough times. Under these

circumstances, parties ideologically less ready to reform in good times may be more credible in convincing stakeholders (i.e. workers, voters, unions) of the need to introduce reforms. Therefore, we use data from the Cruz et al. (2018) database of political institutions, to control for the party orientation with respect to economic policy (i.e. Right, Left, Center).¹⁸ The inclusion of the party orientation in the regressions, does not influence our main findings. Additionally, when we interact the party orientation variable with the two-way interaction effect, we find that the coefficient of the three-way interaction effect is positive and statistically significant. Hence, the magnitude of the two-way interaction between FSI and Trust becomes stronger if a government is centre or left-wing economically-oriented compared to right-wing ones.

The literature also suggests that formal institutions may influence economic growth (see e.g., among others, Dollar and Kraay, 2003; Djankov et al., 2006). To account for this, we consider the inclusion of an overall index of formal institutions in the regressions. As in other studies (e.g. Gaganis et al., 2019), we estimate the arithmetic average of the following six Worldwide Governance Indicators (Kaufmann, et al., 2011): (i) voice and accountability, (ii) political stability and absence of violence, (iii) government effectiveness, (iv) regulatory quality, (v) rule of law and (vi) control of corruption. However, the correlation coefficient between this proxy and the first component of trust is as high as 0.9. Therefore, we refrain from using it either in our baseline specification or in the additional analysis presented in this section. Nonetheless, in an attempt to provide some tests while accounting for the formal institutions, and at the same time to moderate the correlation and multicollinearity issues that come with it, we follow a slightly different approach. More detailed, we develop a dummy variable that takes the value of '1' if a country's score is above the sample median (i.e. strong formal institutions), and the value of '0' otherwise (i.e. weak formal institutions). In this case, the correlation coefficient drops to 0.75. The inclusion of this dummy variable in the regression does not influence our main findings. Furthermore, we interact this variable with the two-way interaction of FSI and Trust. The coefficient of the three-way interaction is insignificant. Therefore, our estimations show that the impact of the two-way interaction of FSI and Trust on economic growth does not differ between countries with strong and weak formal institutions.

[INSERT TABLE 6 ABOUT HERE]

Finally, the composite indicator of financial stress we have used in this study captures the stress stemming from the equity, the bond and the foreign exchange markets. It would be interesting to see whether a similar conditional effect can be witnessed through stress stemming from the banking or the housing sectors, both of which are important for the overall financial system and may affect the wheels of economic growth (Levine

¹⁸ The classification is based on the following criteria. Right: for parties that are defined as conservative, Christian democratic, or right-wing. Left: for parties that are defined as communist, socialist, social democratic, or left-wing. Center: for parties that are defined as centrist or when party position can best be described as centrist (e.g., party advocates strengthening private enterprise in a social-liberal context). If the orientation of a party was not immediately obvious from its name or description in the handbooks Cruz et al. (2018) consulted other sources and cross-checked the available information with other sources. The right-wing group is omitted from the regressions and forms the base category for the interpretation of the results.

and Zervos, 1998; Aizenman et al., 2019). To capture the stress stemming from the banking sector, we employ data on the probability of default (PoD) of this sector stemming from the Credit Research Initiative (CRI).¹⁹ CRI offers PoD cardinal indicators for different prediction horizons. We use default probabilities for 1, 6 and 12-month horizons. We continue to find a statistically significant moderation effect across all proxies at the 5% level. Results are given in table 7. Turning to the housing market, we proxy stress by constructing a volatility indicator similar to Banks et al. (2016). In particular, we calculate the standard deviation of log changes of the house price index (reflecting changes in the prices of residential dwellings in a country) obtained from PASSPORT on certain time window intervals (4, 8 and 12 quarters). On this instance, we find no statistically significant moderation effect no matter the time-window. Results are given in table 7.

[INSERT TABLE 7 ABOUT HERE]

5 Conclusions

The literature on the finance-growth nexus has traditionally focused on the impact of the depth of the financial market on economic growth. In this paper, we follow more recent studies that investigate the effect of financial stress on economic activity. Additionally, we consider insights from other strands of the literature that emphasise the role of social values. For example, Martin (2000, p.77) suggests that *“the form and evolution of the economic landscape cannot be fully understood without giving due attention to the various social institutions on which economic activity depends and through which it is shaped”*. Further to this, Lee et al. (2009, p.734) mention that *“financial institutions, markets and intermediaries are integral to the entangled geographies of contemporary economic, cultural and political life”*. Building on these studies we have hereby investigated whether and how trust has a moderating role in the association between financial stress and economic growth.

Our sample consists of quarterly data from 23 EU countries over the period 2002-2020. Looking at the overall sample, we find that social trust, and individuals’ trust to politicians curtails the negative impact of financial stress on the real economy. The inclusion of the party orientation in the regressions, does not influence our main findings. Additionally, the results show that the moderating effect is not uniform across all the components of GDP. In particular, it seems that the results are driven by consumption, governmental spending and investments rather than net exports. Finally, these findings are also confirmed via the use of techniques designed to alleviate endogeneity issues.

Our results have important policy making implications. There is no doubt that the introduction of regulations and policies that will influence deep-rooted social norms like trust and, consequently, the reactions of economic agents, is a very challenging task. However, this is not impossible. For example, Clark et al. (2021) highlight that certain government actions can influence social capital, referring for example to

¹⁹ The CRI was founded at the Risk Management Institute of National University of Singapore and offers credit risk measures for exchange-listed firms around the world (see Duan and Van Laere, 2012; Initiative, 2018, for a discussion for why it is better to use in the broader concept of credit ratings, and for a technical report behind their calculation accordingly).

ethnic diversity (Easterly and Levine, 1997; Alesina et al., 1999) and education (Gradstein and Justman, 2002). Therefore, policy makers can influence economic output by designing policies to strengthen the degree of social capital (Clark et al., 2021). When this is not possible, policy makers should at the very least consider the differences in the degree of trust among countries while designing policies to alleviate the effects of financial stress episodes on economic growth. Hence, they should not assume that what works in one country will work with a different degree of trust in the society. In other words, there cannot be a one size fits all approach.

References

- Aboura, S. and van Roye, B. (2017). Financial stress and economic dynamics: The case of France. *International Economics*, 149:57–73.
- Agénor, P.-R. and Dinh, H. T. (2015). Social capital, product imitation and growth with learning externalities. *Journal of Development Economics*, 114:41–54.
- Ahlin, C. and Pang, J. (2008). Are financial development and corruption control substitutes in promoting growth? *Journal of Development Economics*, 86(2):414–433.
- Aizenman, J., Jinjara, Y., and Zheng, H. (2019). Housing bubbles, economic growth, and institutions. *Open Economies Review*, 30(4):655–674.
- Alam, M. J. (2017). Differences in firm growth across countries: Does it explain gdp differences? Technical report, Working Paper Series, HEC Montreal.
- Alesina, A., Baqir, R., and Easterly, W. (1999). Public goods and ethnic divisions. *The Quarterly journal of economics*, 114(4):1243–1284.
- Alexiou, C., Vogiazas, S., and Nellis, J. G. (2018). Reassessing the relationship between the financial sector and economic growth: Dynamic panel evidence. *International Journal of Finance & Economics*, 23(2):155–173.
- Álvarez-Botas, C. and González, V. M. (2021). Does trust matter for the cost of bank loans? *Journal of Corporate Finance*, 66:101791.
- Andersen, A. L., Duus, C., and Jensen, T. L. (2016). Household debt and spending during the financial crisis: Evidence from danish micro data. *European Economic Review*, 89:96–115.
- Andrianova, S., Demetriades, P., and Shortland, A. (2012). Government ownership of banks, institutions and economic growth. *Economica*, 79(315):449–469.
- Asteriou, D. and Spanos, K. (2019). The relationship between financial development and economic growth during the recent crisis: Evidence from the EU. *Finance Research Letters*, 28:238–245.
- Azariadis, C. and Bucci, A. (2019). Editorial On ‘Finance and economic growth in the aftermath of the crisis’. *Journal of Macroeconomics*. In Press, December 2019.
- Bagehot, W. (1873). *Lombard Street. A description of the Money Market*. Henry, S. King & Co., London.

- Baker, S. R., Bloom, N., and Davis, S. J. (2016). Measuring economic policy uncertainty. *The quarterly journal of economics*, 131(4):1593–1636.
- Banks, J., Blundell, R., Oldfield, Z., and Smith, J. P. (2016). House price volatility and the housing ladder. In *Insights in the Economics of Aging*, pages 87–119. University of Chicago Press.
- Beck, N. (2001). Time-series–cross-section data: What have we learned in the past few years? *Annual review of political science*, 4(1):271–293.
- Beck, T., Degryse, H., and Kneer, C. (2014). Is more finance better? Disentangling intermediation and size effects of financial systems. *Journal of Financial Stability*, 10:50–64.
- Beilmann, M., Kööts-Ausmees, L., and Realo, A. (2018). The relationship between social capital and Individualism-Collectivism in Europe. *Social Indicators Research*, 137(2):641–664.
- Bena, J. and Jurajda, Š. (2011). Financial development and corporate growth in the eu single market. *Economica*, 78(311):401–428.
- Benhabib, J. and Spiegel, M. M. (2000). The role of financial development in growth and investment. *Journal of Economic Growth*, 5(4):341–360.
- Bergh, A. and Bjørnskov, C. (2011). Historical trust levels predict the current size of the welfare state. *Kyklos*, 64(1):1–19.
- Bernanke, B. and Gertler, M. (1989). Agency costs, net worth, and business fluctuations. *The American Economic Review*, 79(1):14–31.
- Bernanke, B. S. (2007). The financial accelerator and the credit channel. Technical report. Speech at the Credit Channel of Monetary Policy in the Twenty-first Century Conference, Federal Reserve Bank of Atlanta, Atlanta, Georgia, June 15, Available at: <https://www.federalreserve.gov/newsevents/speech/bernanke20070615a.htm>.
- Bernanke, B. S., Gertler, M., and Gilchrist, S. (1999). The financial accelerator in a quantitative business cycle framework. *Handbook of macroeconomics*, 1:1341–1393.
- Beugelsdijk, S., De Groot, H. L., and Van Schaik, A. B. (2004). Trust and economic growth: a robustness analysis. *Oxford Economic Papers*, 56(1):118–134.
- Bjørnskov, C. (2012). How does social trust affect economic growth? *Southern Economic Journal*, 78(4):1346–1368.
- Bloom, N., Bunn, P., Chen, S., Mizen, P., Smietanka, P., and Thwaites, G. (2019). The impact of brexit on uk firms. Technical report, National Bureau of Economic Research.
- Blundell, R. and Bond, S. (2000). Gmm estimation with persistent panel data: an application to production functions. *Econometric reviews*, 19(3):321–340.
- Bond, S. R. (2002). Dynamic panel data models: a guide to micro data methods and practice. *Portuguese economic journal*, 1(2):141–162.

- Bottazzi, L., Da Rin, M., and Hellmann, T. (2016). The importance of trust for investment: Evidence from venture capital. *The Review of Financial Studies*, 29(9):2283–2318.
- Braumoeller, B. F. (2004). Hypothesis testing and multiplicative interaction terms. *International organization*, 58(4):807–820.
- Breitenlechner, M., Gächter, M., and Sindermann, F. (2015). The finance–growth nexus in crisis. *Economics Letters*, 132:31–33.
- Buch, C. M. and Neugebauer, K. (2011). Bank-specific shocks and the real economy. *Journal of Banking & Finance*, 35(8):2179–2187.
- Calderón, C. and Liu, L. (2003). The direction of causality between financial development and economic growth. *Journal of development economics*, 72(1):321–334.
- Campello, M., Graham, J. R., and Harvey, C. R. (2010). The real effects of financial constraints: Evidence from a financial crisis. *Journal of financial Economics*, 97(3):470–487.
- Camussi, S., Mancini, A. L., and Tommasino, P. (2018). Does trust influence social expenditures? evidence from local governments. *Kyklos*, 71(1):59–85.
- Cardarelli, R., Elekdag, S., and Lall, S. (2011). Financial stress and economic contractions. *Journal of Financial Stability*, 7(2):78–97.
- Catrinescu, N., Leon-Ledesma, M., Piracha, M., and Quillin, B. (2009). Remittances, institutions, and economic growth. *World Development*, 37(1):81–92.
- Cecchetti, S. G., Kohler, M., and Upper, C. (2009). Financial crises and economic activity. Technical report, National Bureau of Economic Research.
- Cevik, E. I., Dibooglu, S., and Kenc, T. (2016). Financial stress and economic activity in some emerging asian economies. *Research in International Business and Finance*, 36:127–139.
- Chau, F. and Deesomsak, R. (2014). Does linkage fuel the fire? the transmission of financial stress across the markets. *International Review of Financial Analysis*, 36:57–70.
- Chen, D., Liu, X., and Wang, C. (2016). Social trust and bank loan financing: Evidence from china. *Abacus*, 52(3):374–403.
- Claessens, S., Dell’Ariccia, G., Igan, D., and Laeven, L. (2010). Cross-country experiences and policy implications from the global financial crisis. *Economic policy*, 25(62):267–293.
- Clark, B., Hasan, I., Lai, H., Li, F., and Siddique, A. (2021). Consumer defaults and social capital. *Journal of Financial Stability*, 53:100821.
- Cruz, C., Keefer, P., and Scartascini, C. (2018). Database of political institutions 2017 (dpi2017). Inter-American Development Bank. Numbers for Development. <https://mydata.iadb.org/Reform-Modernization-of-the-State/Database-of-Political-Institutions-2017/938i-s2bw>.

- Dabrowski, M. (2010). The global financial crisis: Lessons for european integration. *Economic systems*, 34(1):38–54.
- De Nardi, M., French, E., and Benson, D. (2011). Consumption and the great recession. Technical report, National Bureau of economic research.
- Djankov, S., McLiesh, C., and Ramalho, R. M. (2006). Regulation and growth. *Economics Letters*, 92(3):395–401.
- Dollar, D. and Kraay, A. (2003). Institutions, trade, and growth. *Journal of monetary economics*, 50(1):133–162.
- Duan, J.-C. and Van Laere, E. (2012). A public good approach to credit ratings—from concept to reality. *Journal of Banking & Finance*, 36(12):3239–3247.
- Duffner, S., Schmid, M. M., and Zimmermann, H. (2009). Trust and success in venture capital financing—an empirical analysis with german survey data. *Kyklos*, 62(1):15–43.
- Dupont, Q. and Karpoff, J. M. (2019). The trust triangle: Laws, reputation, and culture in empirical finance research. *Journal of Business Ethics*, pages 1–22.
- Duprey, T., Klaus, B., and Peltonen, T. (2017). Dating systemic financial stress episodes in the EU countries. *Journal of Financial Stability*, 32:30–56.
- Durusu-Ciftci, D., Ispir, M. S., and Yetkiner, H. (2017). Financial development and economic growth: Some theory and more evidence. *Journal of Policy Modeling*, 39(2):290–306.
- Easterly, W. and Levine, R. (1997). Africa’s growth tragedy: policies and ethnic divisions. *The quarterly journal of economics*, 112(4):1203–1250.
- Engelhardt, N., Krause, M., Neukirchen, D., and Posch, P. N. (2021). Trust and stock market volatility during the covid-19 crisis. *Finance Research Letters*, 38:101873.
- Fernández, A. I., González, F., and Suárez, N. (2016). Banking stability, competition, and economic volatility. *Journal of Financial Stability*, 22:101–120.
- Ferrer, R., Jammazi, R., Bolós, V. J., and Benítez, R. (2018). Interactions between financial stress and economic activity for the us: A time-and frequency-varying analysis using wavelets. *Physica A: Statistical Mechanics and its Applications*, 492:446–462.
- Foster, C. and Frieden, J. (2017). Crisis of trust: Socio-economic determinants of europeans’ confidence in government. *European Union Politics*, 18(4):511–535.
- Gaganis, C., Pasiouras, F., and Voulgari, F. (2019). Culture, business environment and SMEs’ profitability: Evidence from European Countries. *Economic Modelling*, 78:275–292.
- Galasso, V. (2014). The role of political partisanship during economic crises. *Public Choice*, 158(1-2):143–165.
- Gerlach-Kristen, P., O’Connell, B., and O’Toole, C. (2013). How do banking crises affect aggregate consumption? evidence from international crisis episodes. Technical report, ESRI Working Paper.

- Goldsmith, R. W. (1969). *Financial structure and development*. Yale University Press, New Haven, CT.
- Gradstein, M. and Justman, M. (2002). Education, social cohesion, and economic growth. *American Economic Review*, 92(4):1192–1204.
- Guiso, L., Jappelli, T., Padula, M., and Pagano, M. (2004). Financial market integration and economic growth in the eu. *Economic Policy*, 19(40):524–577.
- Guiso, L., Sapienza, P., and Zingales, L. (2008). Trusting the stock market. *The Journal of Finance*, 63(6):2557–2600.
- Guiso, L., Sapienza, P., and Zingales, L. (2009). Cultural biases in economic exchange? *The quarterly journal of economics*, 124(3):1095–1131.
- Gupta, A., Raman, K., and Shang, C. (2018). Social capital and the cost of equity. *Journal of Banking & Finance*, 87:102–117.
- Hamilton, A. (1781). Quoted from Hammond, 1991. *Banks and Politics in America: From the Revolution to the Civil War*. Princeton University Press, Princeton, NJ, p.36.
- Hasan, I., Hoi, C. K., Wu, Q., and Zhang, H. (2017). Social capital and debt contracting: Evidence from bank loans and public bonds. *Journal of Financial and Quantitative Analysis*, 52(3):1017–1047.
- Hilary, G. and Huang, S. (2015). *Trust and contracting*.
- Ho, K.-C., Yen, H.-P., Gu, Y., and Shi, L. (2020). Does societal trust make firms more trustworthy? *Emerging Markets Review*, 42:100674.
- Hoi, C. K. S., Wu, Q., and Zhang, H. (2019). Does social capital mitigate agency problems? evidence from chief executive officer (ceo) compensation. *Journal of Financial Economics*, 133(2):498–519.
- Hollo, D., Kremer, M., and Lo Duca, M. (2012). CISS-a composite indicator of systemic stress in the financial system. ECB Working paper No.1426.
- Hooghe, M. and Okolikj, M. (2020). The long-term effects of the economic crisis on political trust in europe: Is there a negativity bias in the relation between economic performance and political support? *Comparative European Politics*, 18:879–898.
- Hubrich, K. and Tetlow, R. J. (2015). Financial stress and economic dynamics: The transmission of crises. *Journal of Monetary Economics*, 70:100–115.
- Illing, M. and Liu, Y. (2006). Measuring financial stress in a developed country: An application to canada. *Journal of Financial Stability*, 2(3):243–265.
- Initiative, C. R. (2018). Nus-rmi credit research initiative technical report. Version: 2017 update 1, Available at: <http://d.rmicri.org/static/pdf/2017update1.pdf>.
- James Jr, H. S. (2015). Generalized morality, institutions and economic growth, and the intermediating role of generalized trust. *Kyklos*, 68(2):165–196.
- Jerzmanowski, M. (2017). Finance and sources of growth: evidence from the us states. *Journal of Economic Growth*, 22(1):97–122.

- Jucá, M. N. and Fishlow, A. (2020). Political uncertainty of impeachment upon corporate investment decisions. *Borsa Istanbul Review*.
- Julio, B. and Yook, Y. (2012). Political uncertainty and corporate investment cycles. *The Journal of Finance*, 67(1):45–83.
- Kapetanios, G. and Marcellino, M. (2010). Factor-GMM estimation with large sets of possibly weak instruments. *Computational Statistics & Data Analysis*, 54(11):2655–2675.
- Karlan, D., Mobius, M., Rosenblat, T., and Szeidl, A. (2009). Trust and social collateral. *The Quarterly Journal of Economics*, 124(3):1307–1361.
- Kaufmann, D., Kraay, A., and Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues. *Hague Journal on the Rule of Law*, 3(2):220–246.
- King, R. G. and Levine, R. (1993). Finance and growth: Schumpeter might be right. *The Quarterly Journal of Economics*, 108(3):717–737.
- Kiyotaki, N. and Moore, J. (1997). Credit cycles. *Journal of political economy*, 105(2):211–248.
- Knack, S. and Keefer, P. (1997). Does social capital have an economic payoff? A cross-country investigation. *The Quarterly Journal of Economics*, 112(4):1251–1288.
- Kroknes, V. F., Jakobsen, T. G., and Grønning, L.-M. (2015). Economic performance and political trust: The impact of the financial crisis on european citizens. *European Societies*, 17(5):700–723.
- Langfield, S. and Pagano, M. (2016). Bank bias in europe: effects on systemic risk and growth. *Economic Policy*, 31(85):51–106.
- Law, S. H., Kutan, A. M., and Naseem, N. (2018). The role of institutions in finance curse: Evidence from international data. *Journal of Comparative Economics*, 46(1):174–191.
- Lee, R., Clark, G. L., Pollard, J., and Leyshon, A. (2009). The remit of financial geography—before and after the crisis. *Journal of Economic Geography*, 9(5):723–747.
- Levine, R. (1997). Financial development and economic growth: views and agenda. *Journal of Economic Literature*, 35:688–726.
- Levine, R. (2005). Finance and growth: theory and evidence. *Handbook of economic growth*, 1:865–934.
- Levine, R., Lin, C., and Xie, W. (2018). Corporate resilience to banking crises: the roles of trust and trade credit. *Journal of Financial and Quantitative Analysis*, 53(4):1441–1477.
- Levine, R., Loayza, N., and Beck, T. (2000). Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics*, 46(1):31–77.
- Levine, R. and Zervos, S. (1998). Stock markets, banks, and economic growth. *American Economic Review*, pages 537–558.
- Lhuissier, S. (2017). Financial intermediaries' instability and euro area macroeconomic dynamics. *European Economic Review*, 98:49–72.

- Li, L., Ucar, E., and Yavas, A. (2020). Social capital and mortgage delinquency. *The Journal of Real Estate Finance and Economics*, pages 1–25.
- Li, X., Shen, D., Xue, M., and Zhang, W. (2017). Daily happiness and stock returns: The case of chinese company listed in the united states. *Economic Modelling*, 64:496–501.
- Lin, T.-C. and Pursiainen, V. (2020). Fund what you trust? social capital in crowdfunding. *Social Capital in Crowdfunding (February 18, 2020)*.
- Lo Duca, M. and Peltonen, T. A. (2011). Macro-financial vulnerabilities and future financial stress-assessing systemic risks and predicting systemic events. European Central Bank Working Paper Series, No 1311, March.
- Lopes, P. (2008). Credit card debt and default over the life cycle. *Journal of Money, Credit and Banking*, 40(4):769–790.
- Louzis, D. P. and Vouldis, A. T. (2012). A methodology for constructing a financial systemic stress index: An application to greece. *Economic Modelling*, 29(4):1228–1241.
- Lucas, R. E. (1989). On the mechanics of economic development. *NBER Working Paper, No. R1176*.
- Martin, R. (2000). Institutional approaches in economic geography. *A companion to economic geography*, pages 77–94.
- Mazumder, S. (2020). How important is social trust during the covid-19 crisis period? evidence from the fed announcements. *Journal of behavioral and experimental finance*, 28:100387.
- Meng, Y. and Yin, C. (2019). Trust and the cost of debt financing. *Journal of International Financial Markets, Institutions and Money*, 59:58–73.
- Mirzaei, A. and Moore, T. (2019). Real effect of bank efficiency: Evidence from disaggregated manufacturing sectors. *Economica*, 86(341):87–115.
- Mullings, R. (2017). Do institutions moderate globalization’s effect on growth? *Journal of Institutional Economics*.
- Mundlak, Y. (1978). On the pooling of time series and cross section data. *Econometrica*, pages 69–85.
- Neanidis, K. C. (2019). Volatile capital flows and economic growth: The role of banking supervision. *Journal of Financial Stability*, 40:77–93.
- Neumayer, E. (2002). Does trade openness promote multilateral environmental cooperation? *World Economy*, 25(6):815–832.
- Ng, A., Ibrahim, M. H., and Mirakhor, A. (2016). Does trust contribute to stock market development? *Economic Modelling*, 52:239–250.
- Nguyen, Y. N., Brown, K., and Skully, M. (2019). Impact of finance on growth: Does it vary with development levels or cyclical conditions? *Journal of Policy Modeling*, 41(6):1195–1209.

- Nickell, S. (1981). Biases in dynamic models with fixed effects. *Econometrica: Journal of the Econometric Society*, pages 1417–1426.
- Oet, M. V., Eiben, R., Bianco, T., Gramlich, D., and Ong, S. J. (2011). Financial stress index: Identification of systemic risk conditions. In *24th Australasian Finance and Banking Conference*.
- Organization for Economic Cooperation and Development (2013). Governance at a glance. December, Available at: https://doi.org/10.1787/gov_glance-2013-en.
- Papadimitri, P., Pasiouras, F., and Tasiou, M. (2020). Do national differences in social capital and corporate ethical behaviour perceptions influence the use of collateral? cross-country evidence. *Journal of Business Ethics*, pages 1–20.
- Polat, O. and Ozkan, I. (2019). Transmission mechanisms of financial stress into economic activity in turkey. *Journal of Policy Modeling*, 41(2):395–415.
- Qiang, Q. and Jian, C. (2020). Natural resource endowment, institutional quality and china's regional economic growth. *Resources Policy*, 66:101644.
- Roodman, D. (2009a). How to do xtabond2: An introduction to difference and system GMM in Stata. *The Stata Journal*, 9(1):86–136.
- Roodman, D. (2009b). A note on the theme of too many instruments. *Oxford Bulletin of Economics and statistics*, 71(1):135–158.
- Roth, F. (2009). Does too much trust hamper economic growth? *Kyklos*, 62(1):103–128.
- Roy, D., Munasib, A., and Chen, X. (2014). Social trust and international trade: the interplay between social trust and formal finance. *Review of World Economics*, 150(4):693–714.
- Sangnier, M. (2013). Does trust favor macroeconomic stability? *Journal of Comparative Economics*, 41(3):653–668.
- Stolbov, M. and Shchepeleva, M. (2016). Financial stress in emerging markets: Patterns, real effects, and cross-country spillovers. *Review of Development Finance*, 6(1):71–81.
- Uzzi, B. (1996). The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American sociological review*, pages 674–698.
- Williamson, C. R. and Mathers, R. L. (2011). Economic freedom, culture, and growth. *Public Choice*, 148(3-4):313–335.
- Wilson, S. E. and Butler, D. M. (2007). A lot more to do: The sensitivity of time-series cross-section analyses to simple alternative specifications. *Political Analysis*, 15(2):101–123.
- Wu, W., Firth, M., and Rui, O. M. (2014). Trust and the provision of trade credit. *Journal of Banking & Finance*, 39:146–159.
- Yanikkaya, H. (2003). Trade openness and economic growth: a cross-country empirical investigation. *Journal of Development economics*, 72(1):57–89.
- Zak, P. J. and Knack, S. (2001). Trust and growth. *The Economic Journal*, 111(470):295–321.

- Zergawu, Y. Z., Walle, Y. M., and Giménez-Gómez, J.-M. (2020). The joint impact of infrastructure and institutions on economic growth. *Journal of Institutional Economics*, 16(4):481–502.
- Zubair, S., Kabir, R., and Huang, X. (2020). Does the financial crisis change the effect of financing on investment? evidence from private smes. *Journal of business research*, 110:456–463.

Table 1: Baseline model results

Dependent variable:	(1)	(2)	(3)	(4)	(5)
Real per capita GDP growth	PCA	Fair	Helpful	Trust	Trust to Politicians
L. Real per capita GDP growth	-0.0356 (0.139)	-0.0306 (0.137)	-0.0272 (0.136)	-0.0281 (0.137)	0.0136 (0.130)
L. Population growth	-4.81e-09* (2.78e-09)	-4.62e-09* (2.30e-09)	-4.66e-09** (2.18e-09)	-3.77e-09 (2.38e-09)	-5.09e-09 (3.00e-09)
L. Government expenditure to GDP	-4.75e-05 (0.000764)	0.000406 (0.000710)	0.000343 (0.000702)	0.000338 (0.000670)	-7.78e-05 (0.00111)
L. FDI	0.000231*** (7.16e-05)	0.000244*** (6.61e-05)	0.000223*** (6.67e-05)	0.000228*** (6.55e-05)	0.000191** (7.75e-05)
L. School enrolment	0.000258** (0.000122)	0.000308** (0.000123)	0.000257* (0.000139)	0.000311** (0.000120)	0.000223* (0.000122)
L. Trade Openness	0.00631 (0.00404)	0.00440 (0.00332)	0.00586* (0.00308)	0.00588* (0.00310)	0.0116 (0.00684)
L. FSI	-0.0251*** (0.00793)	-0.0969*** (0.0232)	-0.0639** (0.0245)	-0.0768*** (0.0217)	-0.0534*** (0.0114)
L. Trust (PCA)	-0.00102 (0.00134)				
L. FSI x L. Trust (PCA)	0.00530** (0.00193)				
L. Fair		-0.00227 (0.00258)			
L. FSI x L. Fair		0.0131*** (0.00401)			
L. Helpful			-0.00301* (0.00166)		
L. FSI x L. Helpful			0.00773 (0.00526)		
L. Trust				-0.00445* (0.00224)	
L. FSI x L. Trust				0.0103** (0.00389)	
L. Trust to Politicians					-8.03e-05 (0.000136)
L. FSI x L. Trust to Politicians					0.00113*** (0.000270)
Constant	-0.0113 (0.00810)	-0.00350 (0.0170)	0.000108 (0.0134)	0.00504 (0.0130)	-0.0118 (0.0132)

Observations	1,367	1,451	1,451	1,451	1,471
Number of countries	21	22	22	22	23
Country FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES
T-min	28	28	28	28	28
T-bar	65.10	65.95	65.95	65.95	63.96
T-max	72	72	72	72	72
R-squared within	0.291	0.302	0.299	0.301	0.286
R-squared between	0.554	0.488	0.490	0.453	0.430
R-squared overall	0.283	0.281	0.276	0.254	0.237

The table reports coefficients and robust standard errors clustered by country (in brackets). The response variable is real per capita GDP growth. All variables are defined in Table A1 of the appendix. The estimation method is within groups (fixed effects). Columns (2) to (4) proxy trust through individual components of the Social Trust Index, specification in column (5) focuses on trust to politicians. Specification in column (1) is the first principal component of the 4 different trust proxies explaining 89% of the variation. ***, p<0.01, ** p<0.05, * p<0.1

Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Other Controls	YES	YES	YES	YES	YES	YES	YES	YES
T-min	28	28	28	28	28	28	28	28
T-bar	65.10	65.10	65.10	65.10	63.96	63.96	63.96	63.96
T-max	72	72	72	72	72	72	72	72
R-squared within	0.294	0.153	0.202	0.200	0.277	0.153	0.180	0.193
R-squared between	0.425	0.00637	0.403	0.0132	0.258	0.000590	0.408	0.0172
R-squared overall	0.285	0.0468	0.144	0.131	0.218	0.0584	0.122	0.152

The table reports coefficients and robust standard errors clustered by country (in brackets). The response variables are the components of GDP, namely: consumption, government spending, investment and net exports. All variables are defined in Table A1 of the appendix. The estimation method is within groups (fixed effects). Columns (1) to (4) present the results where trust is proxied through the first component of the four trust measures used in the study explaining 89% of the variation. Columns (5) to (8) refer to the results obtained using the trust to politicians. Qualitatively similar results are obtained using the other proxies of the Social Trust Index, but are not reported to conserve space. ***, p<0.01, ** p<0.05, * p<0.1

Table 3: Breaking GDP into its core components

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Components of GDP	Consumption	Government Spending	Investment	Net Exports	Consumption	Government Spending	Investment	Net Exports	Consumption	Government Spending	Investment	Net Exports
FSI	-0.0796** (0.0293)	-0.0601** (0.0215)	-0.155 (0.0984)	3.24e-06 (7.97e-05)	-0.0825** (0.0311)	-0.0756*** (0.0182)	-0.205** (0.0868)	1.51e-05 (6.18e-05)	-0.115*** (0.0340)	-0.0935*** (0.0188)	-0.262** (0.0996)	3.99e-05 (7.19e-05)
Helpful	-0.00507** (0.00200)	-0.00225* (0.00120)	-0.00777 (0.00591)	1.42e-06 (4.21e-06)								
FSI x Helpful	0.0122** (0.00550)	0.00964* (0.00514)	0.0172 (0.0227)	6.24e-06 (1.94e-05)								
Trust					-0.00499* (0.00285)	-0.00361 (0.00210)	-0.00486 (0.00835)	-3.93e-06 (4.97e-06)				
FSI x Trust					0.0127** (0.00542)	0.0127*** (0.00408)	0.0272 (0.0176)	3.74e-06 (1.42e-05)				
Fair									-0.00520 (0.00399)	-0.00441* (0.00247)	0.00645 (0.0105)	-3.33e-06 (5.21e-06)
FSI x Fair									0.0174***	0.0148***	0.0353*	-1.30e-06

									(0.00568)	(0.00414)	(0.0192)	(1.54e-05)
Observations	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451
Number of Countries	22	22	22	22	22	22	22	22	22	22	22	22
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Other Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
T-min	28	28	28	28	28	28	28	28	28	28	28	28
T-bar	65.95	65.95	65.95	65.95	65.95	65.95	65.95	65.95	65.95	65.95	65.95	65.95
T-max	72	72	72	72	72	72	72	72	72	72	72	72
R-squared within	0.295	0.148	0.200	0.196	0.293	0.149	0.200	0.196	0.298	0.151	0.202	0.196
R-squared between	0.432	0.00125	0.320	0.00146	0.392	0.00620	0.371	0.00163	0.375	0.00515	0.409	0.000912
R-squared overall	0.282	0.0502	0.149	0.167	0.256	0.0551	0.151	0.147	0.265	0.0596	0.148	0.146

The table reports coefficients and robust standard errors clustered by country (in brackets). The response variables are the components of GDP, namely: consumption, government spending, investment and net exports. All variables are defined in Table A1 of the appendix. The estimation method is within groups (fixed effects). Columns (1) to (12) present the results where trust is proxied through the different trust measures used in the PCA alongside trust to politicians, which is presented in Table 2. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Re-estimation of baseline model using system GMM

Dependent variable:	(1)	(2)	(3)	(4)	(5)
Real per capita GDP growth	PCA	Fair	Helpful	Trust	Trust to Politicians
L. Real per capita GDP growth	-0.0220 (0.142)	-0.0162 (0.139)	-0.0122 (0.139)	-0.0111 (0.140)	0.0272 (0.130)
L. Population growth	-2.45e-09 (2.44e-09)	-4.15e-09** (1.97e-09)	-3.00e-09 (2.23e-09)	-3.55e-09 (2.37e-09)	-2.08e-09 (1.95e-09)
L. Government expenditure to GDP	-0.00161* (0.000897)	-1.17e-05 (0.00111)	-0.00115 (0.000998)	-0.00138* (0.000835)	-0.00105 (0.000712)
L. FDI	0.000203*** (6.87e-05)	0.000249*** (7.19e-05)	0.000224*** (5.62e-05)	0.000211*** (5.44e-05)	0.000158** (6.60e-05)
L. School enrolment	0.000125** (5.33e-05)	0.000140*** (4.39e-05)	0.000137*** (3.48e-05)	0.000114** (5.11e-05)	0.000116*** (4.47e-05)
L. Trade Openness	0.00337* (0.00181)	0.00211 (0.00133)	0.00287 (0.00176)	0.00238 (0.00168)	0.00396** (0.00167)
L. FSI	-0.0272*** (0.00754)	-0.0971*** (0.0275)	-0.0674*** (0.0233)	-0.0826*** (0.0243)	-0.0603*** (0.0130)
L. Trust (PCA)	-0.00259** (0.00110)				
L. FSI x L. Trust (PCA)	0.00492** (0.00203)				
L. Fair		-0.00108 (0.00319)			
L. FSI x L. Fair		0.0125*** (0.00475)			
L. Helpful			-0.00345 (0.00249)		
L. FSI x L. Helpful			0.00799* (0.00467)		
L. Trust				-0.00551* (0.00328)	
L. FSI x L. Trust				0.0111*** (0.00419)	
L. Trust to Politicians					-0.000367** (0.000162)
L. FSI x L. Trust to Politicians					0.00114*** (0.000304)
Observations	1,367	1,451	1,451	1,451	1,471
Number of countries	21	22	22	22	23
Year FE	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES

AR(1) t-stat	-2.92	-2.96	-2.97	-2.98	-3.09
AR(1) p-value	0.00	0.00	0.00	0.00	0.00
AR(2) t-stat	0.70	0.72	0.74	0.79	1.63
AR(2) p-value	0.48	0.47	0.46	0.43	0.10
Sargan p-value	0.00	0.00	0.00	0.00	0.00
Hansen p-value	1.00	1.00	1.00	1.00	1.00

The table reports coefficients and robust standard errors clustered by country (in brackets). The response variable is real per capita GDP growth. All variables are defined in Table A1 of the appendix. The estimation method is system GMM using the forward orthogonal deviations transform and collapsed instruments. Columns (2) to (4) proxy trust through individual components of the Social Trust Index, specification in column (5) focuses on trust to politicians.

Specification in column (1) is the first principal component of the 4 different trust proxies explaining 89% of the variation. ***, $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5: Additional Analysis - Moderation Effects in and out of the GFC period

Dependent variable: Real per capita GDP growth	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	during GFC	excl. GFC	during GFC	excl. GFC	during GFC	excl. GFC	during GFC	excl. GFC	during GFC	excl. GFC
L. FSI	-0.0291** (0.0116)	-0.0231*** (0.00603)	-0.117*** (0.0311)	-0.121*** (0.0161)	-0.110*** (0.0310)	-0.0760*** (0.0228)	-0.105*** (0.0272)	-0.0940*** (0.0269)	-0.0287 (0.0281)	-0.0649*** (0.00926)
L. Trust (PCA)	-0.00178 (0.00370)	-0.00125 (0.00106)								
L. FSI x L. Trust (PCA)	0.00757*** (0.00231)	0.00737*** (0.00154)								
L. Fair			-0.0107 (0.00905)	-0.000699 (0.00221)						
L. FSI x L. Fair			0.0158*** (0.00518)	0.0178*** (0.00290)						
L. Helpful					-0.00372* (0.00204)	-0.00367** (0.00152)				
L. FSI x L. Helpful					0.0163** (0.00580)	0.0107** (0.00470)				
L. Trust							-0.0102 (0.0104)	-0.00600*** (0.00175)		

L. FSI x L. Trust						0.0151***	0.0141***			
						(0.00478)	(0.00465)			
L. Trust to Politicians								2.56e-05	-7.46e-08	
								(0.000488)	(0.000143)	
L. FSI x L. Trust to Politicians								0.000398	0.00131***	
								(0.000717)	(0.000255)	
Observations	310	1,057	326	1,125	326	1,125	326	1,125	340	1,131
Number of countries	21	21	22	22	22	22	22	22	23	23
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Other Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
T-min	3	12	3	12	3	12	3	12	3	12
T-bar	14.76	50.33	14.82	51.14	14.82	51.14	14.82	51.14	14.78	49.17
T-max	16	56	16	56	16	56	16	56	16	56
R-squared within	0.293	0.310	0.306	0.317	0.306	0.314	0.306	0.317	0.269	0.291
R-squared between	0.171	0.432	0.131	0.336	0.157	0.372	0.160	0.253	0.0584	0.307
R-squared overall	0.0731	0.304	0.0610	0.297	0.0715	0.298	0.0723	0.249	0.0550	0.246

The table reports coefficients and robust standard errors clustered by country (in brackets). The response variable is real per capita GDP growth. All variables are defined in Table A1 of the appendix. The estimation method is within groups (fixed effects). Columns (3) to (8) proxy trust through individual components of the Social Trust Index during the global financial crisis (GFC) period defined between 2007 and 2010 and excluding this period. Specification in columns (9)-(10) focuses on trust to politicians accordingly. Specification in columns (1)-(2) is the first principal component of the 4 different trust proxies explaining 89% of the variation. ***, $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6: Additional Analysis - Economic freedom, political orientation and institutional overtones

Dependent variable: Real per capita GDP growth	(1)	(2)	(3)	(4)	(5)	(6)
	Economic Freedom	Economic Freedom	Orientation	Orientation	WGI	WGI
L. FSI	-0.0229*** (0.00735)	0.114** (0.0532)	-0.0290*** (0.00827)	-0.0186* (0.00968)	-0.0252*** (0.00791)	-0.0179 (0.0110)
L. Trust (PCA)	-0.000541 (0.00155)	-0.0111 (0.00790)	0.000948 (0.00202)	0.000971 (0.00220)	-0.000982 (0.00132)	0.000576 (0.00173)
L. FSI x L. Trust (PCA)	0.00581*** (0.00189)	0.0446** (0.0173)	0.00616** (0.00285)	-0.000402 (0.00247)	0.00532** (0.00192)	0.00867 (0.00522)
Center			0.00252* (0.00145)	0.00608** (0.00229)		
Left			-0.00144 (0.00109)	-0.000340 (0.00136)		
L. FSI x Center				-0.0254** (0.0118)		
L. FSI x Left				-0.00675 (0.00686)		
L. Trust (PCA) x Center				-0.000781 (0.00108)		
L. Trust (PCA) x Right				-0.00134 (0.000939)		
L. FSI x L. Trust (PCA) x Center				0.0121** (0.00530)		
L. FSI x L. Trust (PCA) x Left				0.0160** (0.00561)		
L. Economic Freedom	-0.000583** (0.000224)	-0.000246 (0.000210)				
L. FSI x L. Economic Freedom		-0.00186** (0.000745)				
L. Trust (PCA) x L. Economic Freedom		0.000142 (0.000110)				
L. FSI x L. Trust (PCA) x L. Economic Freedom		-0.000493* (0.000245)				
L. WGI					-0.000641 (0.00179)	-0.00367 (0.00259)
L. FSI x L. WGI						-0.00441 (0.0141)
L. Trust (PCA) x L. WGI						-0.00234 (0.00160)

L.FSI x L. Trust (PCA) x L. WGI -0.00586
(0.00545)

Observations	1,293	1,293	745	745	1,367	1,367
Number of countries	21	21	19	19	21	21
Country FE	YES	YES	YES	YES	YES	YES
Other Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES
T-min	28	28	11	11	28	28
T-bar	61.57	61.57	39.21	39.21	65.10	65.10
T-max	72	72	43	43	72	72
R-squared within	0.303	0.309	0.303	0.321	0.291	0.295
R-squared between	0.175	0.219	0.168	0.0325	0.566	0.572
R-squared overall	0.255	0.257	0.250	0.284	0.283	0.285

The table reports coefficients and robust standard errors clustered by country (in brackets). The response variable is real per capita GDP growth. All variables are defined in Table A1 of the appendix. The estimation method is within groups (fixed effects). Re-estimation of the baseline with the following additions: Columns (1) and (2) control for economic freedom cross country and its interaction with the moderation effect; columns (3) and (4) control for the orientation of the executive party according to Cruz et al. (2018) and its interaction with the moderation effect; columns (5) and (6) control for the institutional environment (above/below median) and its interaction with the moderation effect. In all specifications, trust is proxied through the first principal component of the 4 different trust proxies explaining 89% of the variation. ***, p<0.01, ** p<0.05, * p<0.1

Table 7: Additional Analysis - Alternative stress channels

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
Real per capita GDP growth	PoD 1-month	PoD 6-months	PoD 12-months	Housing Price volatility 1-year	Housing Price volatility 2-years	Housing Price volatility 3-years
L. PoD 1-month	-0.760*** (0.107)					
L. Trust (PCA)	0.00115 (0.00153)	0.00108 (0.00150)	0.000989 (0.00147)	7.67e-05 (0.00141)	0.000181 (0.00146)	0.000128 (0.00138)
L. PoD 1-month x L. Trust (PCA)	0.482** (0.208)					
L. PoD 6-month		-0.164*** (0.0280)				
L. PoD 6-month x L. Trust (PCA)		0.0852** (0.0398)				
L. PoD 12-month			-0.113*** (0.0217)			
L. PoD 12-month x L. Trust (PCA)			0.0528** (0.0253)			
L. housing price volatility 1-year				0.0534 (0.0363)		
L. housing price volatility 1-year x L. Trust (PCA)				-0.00207 (0.0171)		
L. housing price volatility 2-years					0.0500 (0.0476)	
L. housing price volatility 2-years x L. Trust (PCA)					0.00495 (0.0130)	
L. housing price volatility 3-years						0.0521 (0.0415)
L. housing price volatility 3-years x L. Trust (PCA)						0.00424 (0.0114)
Observations	1,182	1,182	1,182	1,266	1,230	1,154
Number of countries	21	21	21	21	21	21
Country FE	YES	YES	YES	YES	YES	YES

Other Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES
Other Controls	YES	YES	YES	YES	YES	YES
T-min	11	11	11	28	28	28
T-bar	56.29	56.29	56.29	60.29	58.57	54.95
T-max	65	65	65	72	72	68
R-squared within	0.215	0.216	0.217	0.267	0.263	0.273
R-squared between	0.356	0.368	0.381	0.327	0.268	0.352
R-squared overall	0.169	0.173	0.176	0.214	0.189	0.214

The table reports coefficients and robust standard errors clustered by country (in brackets). The response variable is real per capita GDP growth. All variables are defined in Table A1 of the appendix. The estimation method is within groups (fixed effects). Columns (1) to (3) proxy transmission of financial stress through probability of default (PoD) indicators of the banking sector in the next 1, 6 or 12 months. In columns (4) to (6) we proxy transmission of financial stress through the housing sector, using the standard deviation of the housing price index growth in 4 (1-year), 8 (2-years) or 12 (3-year) quarter rolling windows. Trust in all specifications is proxied through the first principal component of the 4 different trust proxies explaining 89% of the variation. ***, $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

