Cultural Convergence and Change in the European Union: the Role of Bilateral Trade

Master's Thesis in Economics

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Abstract

This paper considers the role bilateral trade could have in changing and converging national cultures in the European Union. The Union facilitates trade between its members, which may change their cultures and bring them closer together. Understanding this process is important because cultural differences can exacerbate challenges such as the euro crisis. This paper looks at cultural values crucial to the Union; those relating to the role of the state, xenophobia, and entrepreneurship. By considering the relation of both absolute values and cultural distance between countries in relation to trade insight is given in the ways trade and culture are associated. Countries which trade more are found to become less open to outsiders. Values on the role of the state and entrepreneurship diverge between countries as the trade flows between them increase in size, although exceptions exist depending on the goods traded and features of the trading countries. This paper does not test causal connections, but it seeks to suggest theoretical explanations for the observed relation between trade and culture in the EU.

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1. Introduction

Differences in cultural values have challenged the European Union. During the euro crisis German views on economic governance and the role of the state clashed with those of France and Greece (Bohn & De Jong, 2011; Guiso, Herrera, & Morelli, 2016). The resulting delayed response to the Greek debt crisis threatened the entire Union. Nationalist and xenophobic values played a key role in Brexit, dealing a major blow to decades of European integration (Born, Müller, Schularick, & Sedláček, 2019), and values on trade and entrepreneurship are key in fostering economic prosperity (Guiso, Sapienza, & Zingales, 2009). Cultural change and convergence could help to bridge the cultural divides at the root of these issues. The extensive economic interactions the European project has facilitated can be expected to encourage this (Alesina, Tabellini, & Trebbi, 2017), but it is unclear to what extent this is really the case. With the EU facing another challenge in the recovery after the Covid-19 pandemic, it is important to understand change in European cultures and the factors related to this.

Authors have recently shown interest in investigating whether cultural change and convergence is taking place in the EU (Oshri, Sheafer, & Shenhav, 2016; Alesina, Tabellini, & Trebbi, 2017; Akaliyski, 2019; Van Houwelingen, Iedema, & Dekker, 2019; Akaliyski, Welzel, & Hien, 2020). These authors consistently state that the interactions fostered by the EU could cause cultural change and convergence towards values beneficial to the Union. In practise, convergence, stability and divergence are found for different values, but these are not necessarily relevant to the future of the Union. Furthermore, cultural values do not behave uniformly. Rather, some values are more rigid than others (Giavazzi, Petkov, & Schiantarelli, 2019). Both rigid religious (Hien, 2019) and more flexible political values (Brunnermeier, James, & Landau, 2018, p. 6) have been proposed as causes of the Euro crisis. It is unlikely that cultural change is a simple process. This makes it important to understand which interactions facilitated by the EU are associated with change and convergence of cultural values relevant to the Union.

It is important to see how culture and trade have developed in a Union built on a fundament of economic integration (Schuman, 1950) even if establishing causality is difficult (Cyrus, 2015). Bilateral trade specifically is an interesting form of economic interaction to consider. It has been linked to cultural convergence and cultural distance by several authors (Cyrus, 2012; Disdier, Tai, Fontagné, & Mayer,

2010; Maystre, Olivier, Thoenig, & Verdier, 2014; Rapoport, Sardoschau, & Silve, 2018). By exploring whether bilateral trade is connected to culture we can begin to understand the implications this holds for the European Union. Literature is limited within the context of the EU, but there is support for the idea that trade causes cultural convergence in the EU (Cyrus, 2015). To expand upon our understanding of this matter this paper will answer the following research question:

Is bilateral trade associated with convergence of cultural values in the European Union?

As will be elaborated below, it is important to understand the direction in which culture changes when studying convergence, hence cultural change is an integral part of this paper. To make a valuable contribution to the discourse there must be a clear definition of culture. This paper will follow Hofstede's definition of culture as the 'collective programming of the mind' (Hofstede, 2001, p. 1). Values are one possible manifestation of culture, a value is a 'broad tendency to prefer certain states of affairs over others' (Hofstede, 2001, p. 5). Cultural values can relate to any number of factors, so it is necessary to select values important to the EU. This paper will focus on three sets of key values. The first concerns values relating to economic governance and the role of the state, for which more similar attitudes would be of value to EU decision-making. The second set of values is tied to nationalism and xenophobia. Reduced nationalism and xenophobia and more similar values can increase openness to other countries and reduce discord on matters such immigration. The third set of values relates to trade and entrepreneurship, it is good for the economic development of the Union that these become stronger.

The results show that trade is only tied significantly to more nationalism and xenophobia, and bilateral trade is only associated with convergence towards those values. Divergence in relation to trade is found for the other two values, despite these values converging in absolute terms. Trade in cultural and printed goods, and with formerly communist countries yields exceptions to these results in some cases. This paper does not investigate causality, but it will suggest various explanations for the results found. The results indicate that trade-offs may exist between advancing trade and cultural integration of the EU, furthering our understanding of this connection is important for EU-policymakers. By gaining a better understanding of the dynamics underlying cultural differences in the Union they can better understand the attitudes of different member states and design policies to bridge cultural gaps.

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2. Literature Review

This paper investigates the connection of bilateral trade and cultural change and convergence in the European Union. To explain why the connection between these factors is of importance this literature review will cover several strands of literature. Section 2.1 addresses the specific interest in national-level values. Next, section 2.2 explains the choice of values which are important to the Union. Then, section 2.3 discusses the relation of cultural values to trade. Section 2.4 addresses literature on cultural convergence and change in Europe to identify relevant controls and gaps in the literature before hypotheses are formulated.

2.1 European Unity and Its Uses

"Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a de facto solidarity." (Schuman, 1950)

From the perspective of the EU, cultural values are especially interesting at the national level. Most political power in the Union rests with its member states. If policymakers adhere to the culture of their nations of origin, cultural differences can cause difficulty in the decision-making process as long as there is no authority capable of breaking gridlock between countries (Guiso, Herrera, & Morelli, 2016). Even though more cultural diversity exists at subnational levels (Beugelsdijk, Van Herk, & Maseland, 2018), states make the final decisions. It was a nationwide decision by the UK to leave the Union, ignoring the wishes of regions such as Scotland. However, not all values are equally relevant, and the Union does not always stand to gain from simple convergence. We must therefore consider which values are relevant and in what way the EU might want them to change.

2.2 Relevant Values and their Rate of Change

Values on Economic Governance and the Role of the State

Values relating to economic governance and the role of the state are highly important. Differences in values between France and Germany exacerbated the euro crisis. France's preference for centralised and discretionary political power clashed with the German values of setting and following rules, creating a political gridlock (Bohn & De Jong, 2011). The perception among German voters that the

Greeks should be punished, instead of using discretionary means to aid them, caused hesitance among German leaders. This prevented a swift response which could have reduced the impact of the crisis (Guiso, Herrera, & Morelli, 2016). It is likely that agreement on these values would have helped bring about a solution. Convergence on these values is thus more important than the direction of change.

Political resistance against the bailing out Greece in Germany came specifically from strongly Protestant constituencies (Chadi & Krapf, 2017). Hien (2019) argues that the German Protestant tradition is at the root of German ordoliberalism, in which the state guarantees a fair, rule-based society in which everyone has equal opportunity. The Catholic church fundamentally disagrees with the idea that equal opportunity is actually fair. It instead stresses the need for solidarity and the differences in ability that people have, resulting in them needing different - not level - treatment for society to be fair. As a result, the countries following the Catholic tradition are more comfortable with a larger role of the state in society compared to Protestant societies. If these values are indeed tied to 'deep' religious values they could be highly inflexible (Arruñada & Krapf, 2019).

Brunnermeider, James & Landau dispute this line of thought (2018, p. 60). They point out that the German adherence to a rules-based system and the French preference for a powerful state with discretionary powers only arose after World War II. They explain that the German shock at the degree to which the Nazi government had gained control over society led to their preference for a rule-bound state. Conversely, the French saw a need for a powerful state to oversee the reconstruction. Prior to the war the two models had been essentially the reverse. From this perspective, preferences concerning the role of the state which are important to the euro crisis (Brunnermeier, James, & Landau, 2018, p. 88) could change at a faster rate and may be observed over a shorter span of time.

Values on Nationalism and Xenophobia

Another set of values to consider relates to nationalism and xenophobia. These do not necessarily concern what people identify as, but rather their preferences regarding 'outsiders'. Nationalist values have been linked to a resistance to further European integration (Fligstein, Polyakova, & Sandholtz, 2012; Alesina, Tabellini, & Trebbi, 2017). Nationalist sentiments are often linked to past sources of conflict such as interstate wars, meaning that nationalism tends to go hand in hand with an aversion to

the type of interstate cooperation the Union is built upon. Brexit is the most notable and significant example of disintegration in the EU. Nationalism was widely appealed to by the 'Leave' camp (Born, Müller, Schularick, & Sedláček, 2019). In addition to nationalism, political parties have appealed to xenophobic attitudes in efforts to halt or reverse the European project for decades (De Master & Le Roy, 2000). Negative attitudes towards Islam for example, have been a recurring factor in debates about Turkish EU membership (Zürcher & Van der Linden, 2004, p. 16). It must be noted that convergence is not necessarily a benefit for the European Union, as a convergence towards more nationalistic values is unlikely to result in more political support for the EU. Change towards less nationalism and xenophobia is interesting from the perspective of maintaining support for the EU.

<u>Values on Trade and Entrepreneurship</u>

Finally, we consider cultural traits specifically of interest to trade and entrepreneurship. The promotion of free and open trade is one of the founding principles of the European Union (European Union, 2021b), and aids in bringing economic prosperity. Cultural values relating to *'trust, perceived level of self-determination, respect for others, and obedience'* (Coyne & Williamson, 2012, p. 23) have specifically been noted as being relevant to fostering trade. These 'economic values' reduce transaction costs by making people more open to interaction with strangers and increase the willingness of people to work to overcome barriers to their goals. This benefits trade and economic interactions. Interpersonal trust in particular is considered a key variable when discussing the relation between culture and trade and has been noted as playing a key role in facilitating bilateral trade because it reduces transaction costs (Guiso, Sapienza, & Zingales, 2009; Disdier, Tai, Fontagné, & Mayer, 2010). However, it has also been pointed out that trade can further increase trust because trading is an opportunity to build trust (Cyrus, 2015). The growth of values important to trade and entrepreneurship such as trust is relevant to the EU due to their role in establishing economic interactions and furthering growth. The details of the connection between cultural values and trade are addressed below.

2.3 Cultural Change, Economic Development and Trade

'*Commerce is a cure for the most destructive prejudices; for it is almost a general rule, that wherever we find agreeable manners, there commerce flourishes; and that wherever there is commerce, there we meet with agreeable manners.*' (De Secondat, Baron de Montesquieu, 1748)

This paper considers the relation between bilateral trade and cultural change and convergence in the EU. Therefore, it is necessary to discuss how the relevant values are connected to trade. As signified by the quote above the idea that economic interactions affect the values people hold is not new, rather, it is one of the basic tenets of economic liberalism. One of the first major empirical assessments of the relation between economic development and cultural change is provided by Inglehart & Baker (2000). They find that cultures change towards more rational, tolerant and trusting values as the economy develops. They also note that factors such as religion and historic factors like communism create clear path-dependencies and have a lasting influence on the position of cultures relative to each other. Beugelsdijk & Van Schaik (2002) find evidence that supports this for the EU; they find clear path dependencies based on religion and argue that economic development may have driven value changes in Eastern Europe. An effect of GDP per capita is explicitly found by Oshri, Sheafer, & Shenhav (2016) with respect to parallel changes in democratic values across the EU.

Specifically looking at trade there are two broad narratives. Trade could cause cultural convergence because it increases the amount of interaction between societies, furthering understanding and creating incentive to put differences aside (Cyrus, 2015). Conversely, it could be that increased trade leads to increased specialisation in the production of specific goods (Olivier, Thoenig, & Verdier, 2008). This in turn leads to cultural divergence as a result of the increasing differences in the economic structure of countries. It should be noted that the link between cultural distance and trade is complex. It has both been argued that cultural distance influences the amount of trade (Guiso, Sapienza, & Zingales, 2009) and that trade influences cultural distance (Maystre, Olivier, Thoenig, & Verdier, 2014). This can be clarified by the processes argued for by authors such as Disdier, Tai, Fontagné, & Mayer (2010). They note that cultural affinity can lead to improved trade ties, while some types of interactions such as the buying of cultural goods may create a further 'addiction' for goods from a trading partner and bring

cultures closer together. Bilateral trade in cultural goods is thus likely more strongly linked to changes and convergence of values than other forms of trade. Of note here is the work of Marvasati (1994), who finds that removing trade barriers *reduces* trade in cultural goods. National industries are often dependant on barriers to survive because barriers prevent foreign competition from larger industries displacing them. Behavioural research has found that foreign languages aid people in adopting values from the cultures the language is spoken in (Akkermans, Harzing, & Van Witteloostuijn, 2010), this makes goods which require knowing a foreign language interesting to consider specifically.

Values on Economic Governance and the Role of the State

Values on economic governance and the role of the state are challenging to clearly link to trade. Attitudes towards further European integration have been shown to be positively affected by increases in intra-European trade (Eichenberg & Dalton, 1993), but this does not necessarily entail a shift in values concerning the role of the state in society. Alesina, Tabellini, & Trebbi (2017) do consider such values explicitly. They find that Europeans became '*more inclined to accept a larger role for the state in risk sharing and redistribution'* (p.187), and theorise that economic integration is one possible channel which could bring about such convergence (p.171). Evidence that trade affects attitudes towards the role of the state can be found in research on foreign policy attitudes. Exposure to international trade has been linked to people having less hostile foreign policy attitudes, meaning they demand less state intervention (Kleinberg & Fordham, 2010). This is reflected in voting behaviour; people in areas which benefit from international trade elect representatives less likely to support measures likely to antagonise trade partners (Kleinberg & Fordham, 2013). Conversely, trade has been linked to a greater desire for protectionism in the EU. At the local level, increases in imports from China have been associated with a move towards more nationalist right-wing voting, economic nationalism, and protectionism. This is a result of industries being displaced, negatively affecting labourers (Colantone & Stanig, 2017). A comparable shift was found in Germany in response to Eastern European imports displacing industry (Dippel, Gold, Heblich, & Pinto, 2021). In these cases, trade is clearly associated with greater desire for state protection.

Values on Nationalism and Xenophobia

As discussed above imports from other countries have been linked to voting for nationalist, xenophobic parties due to their displacing of local industry (Colantone & Stanig, 2017; Dippel, Gold, Heblich, & Pinto, 2021). Contrarily, there is historical evidence that suggests trade reduces values related to xenophobia. Voigtländer & Voth (2012) find that antisemitism dissipated faster in German cities which were more focussed on trade. They argue that the interactions fostered by trade brought people from different ethnic groups together and made antisemitism more costly. As a result, antisemitic values dissipated as commercial interests dictated by trade trumped them. A comparable development is seen in the relations between Hindus and Muslims in South Asia. Here, violence between the two communities is significantly lower in places were the two communities had access to different goods. This meant that communities had to interact and trade with each other to obtain these goods, leading them to put aside ethnocentric values as a result of economic interactions (Jha, 2013). Both examples have historical roots going back as far as the Middle Ages, but clearly support the idea that xenophobic values can be lessened by interactions through trade. It is interesting to see if change in such values can be observed within the relatively small timeframe the EU occupies, especially when compared to the more immediate effects of the described disruptions imports can cause.

Values on Trade and Entrepreneurship

Trade and entrepreneurship can clearly be connected to bilateral trade. Coyne & Williamson (2012) define trust, perceived level of self-determination, respect for others, and obedience as relevant values to trade and entrepreneurship and show that these increase as a result of removing barriers to trade. The EU's single market is perhaps the best example of removing barriers to trade between countries, so it would appear convergence towards higher levels of these values is likely. The final results of Cyrus (2015) support this idea. It should be noted that Cyrus finds convergence only after conducting a simultaneous equations approach. Her fixed-effects approach indicates divergence of values, but suffers from data limitations. Cyrus refers to Coyne & Williamson and employs the same values and data to find that trade in itself causes convergence on an aggregate measure of these economic values. As such, it appears both change and convergence in the direction deemed desirable by the EU can be expected.

2.4 Cultural Convergence and Change in the EU

Further variables relevant for cultural change and convergence can be identified in the literature. Beugelsdijk & Van Schaik (2002) find evidence for a possible effect on culture of the fall of the Iron Curtain, and suggest the promises of change caused value changes in Eastern Europe. Beugelsdijk & Van Schaik are sceptical towards the idea of convergence in the EU because they find path-dependencies based on religion, but religion could also simply alter the rate at which cultures change.

Akaliyski, Welzel, & Hien (2020) find that countries converge at different speeds depending on religion. Protestant countries are found to converge the fastest, followed by Catholic, ex-communist and Orthodox countries. They mention the EU's economic integration and structural cohesion funds as possible causal factors of convergence. Akaliyski & Welzel (2020) have suggested the shift in the geopolitical divide after the fall of the Soviet Union is a contributor to convergence because of a desire in Eastern Europe to move away from Russia. Not all authors find convergence, as is shown by the analysis of political values by Van Houwelingen, Iedema, & Dekker (2019).

2.5 Hypotheses

The papers in this chapter often do not explicitly consider the role of trade in cultural change and convergence, and are conflicting in their results when it is considered. As a result, there is little understanding of the role of trade in connection to culture. Understanding how culture changes is key to the EU, as shown by the role it played in the euro crisis, Brexit and its economic importance to the Union. This presents a clear gap in the literature which this paper intends to address by exploring the role of trade in connection to culture in the EU. Change and convergence are both important to the European Union, because of this hypotheses are formulated for both for each cultural value.

Values on economic governance and the role of the state have shown both negative and positive relations with trade. I have formulated my hypothesis based on the findings of Colantone & Stanig (2017) and Dippel, Gold, Heblich, & Pinto (2021), whose analysis of the EU suggests that the disruptive effects of trade lead to a desire for more state protection. Their findings may explain those of Alesina, Tabellini & Trebbi (2017), who find that Europeans display converging attitudes towards a more

prominent role of the state. Hypothesis 1a expects a *positive* relation because the indicator constructed for these cultural values *increases* as countries find a stronger role of the state *more* desirable.

Hypothesis 1a: There is a positive relation between trade and values relating to economic governance and the role of the state in the EU.

Hypothesis 1b: There is a positive relation between bilateral trade and convergence on values relating to economic governance and the role of the state in the EU.

With respect to values on nationalism and xenophobia it appears increased trade strengthens nationalist and xenophobic tendencies in the short-term. This is more suitable to the timeframe of this paper than the reduced xenophobia which has been linked to trade in the long term. Since these short-term effects are strongly localised and dependent on local industry, I deem it unlikely that there is convergence on these values. Hypothesis 2a expects a *negative* relation because the indicator constructed for these cultural values *increases* as countries become less nationalist and xenophobic.

Hypothesis 2a: There is a negative relation between trade and the strength of values relating to nationalism and xenophobia in the EU.

Hypothesis 2b: There is a no significant relation between bilateral trade and the convergence of values relating to nationalism and xenophobia in the EU.

Finally, trade has been linked to strengthening values on trade and entrepreneurship. Cyrus also argues converge on these values exists in relation to trade (Cyrus, 2015). Hypothesis 3a expects a positive relation because the indicator constructed for these cultural values *increases* as countries become *more* conductive to trade and entrepreneurship.

Hypothesis 3a: There is a positive relation between trade and the strength of values relating to trade and entrepreneurship in the EU.

Hypothesis 3b: There is a positive relation between bilateral trade and convergence on values relating to trade and entrepreneurship in the EU.

3. Data

This chapter provides the data used to operationalise the concepts in the hypotheses. Based on the availability of European Social Survey data this paper covers the timeframe 2002 to 2018 at two-year intervals, for which data for 25 EU member states are available. This paper makes a distinction between cultural change and cultural convergence. These two dependent variables require different types of data. Section 3.1 will present data on cultural *values* and its independent variables, whereas section 3.2 will present data on cultural *distance* and alterations and additions made to suit the analysis.

3.1 Data on Cultural Values

Data on cultural values are drawn from the European Social Survey (2021). Data on trade flows are drawn from the World Bank (2021). Variables accounting for the role of the EU are predominantly drawn from data provided by the European Commission (2021e). Table 1 presents a summary overview of all variables applied. The ESS provides data in 9 waves for 25 EU member states so T=9 and N=25, yielding a wide panel. Data for the independent variables are present for all 225 individual observations this yields per variable.

Table 1: Descriptive Data 3.1

Variable	Observa-tions and timeframe	Source	Mean	Std. Devi-ation	Min Value	Max Value	Regression Code
Dependent Variables (Cultural Values)							
Economic Governance and the Role of the State	N=179 n=25 (9) T=7.16	(European Social Survey, 2021)	5.924	0.576	4.209	7.008	EcGov
Nationalism and Xenophobia	N=181 n=25 (9) T=7.24	(European Social Survey, 2021)	4.275	0.651	2.525	5.865	NatXen
Trade and Entrepreneur ship	N=181 n=25 (9) T=7.24	(European Social Survey, 2021)	4.665	0.767	3.136	6.409	TrdEnt

Independent Variables (Economic Interactions and the EU)							
Imports to GDP	N=225 n=25 T=9	(World Bank, 2021)	56.093	27.412	23.421	180.197	ImGDP
EU Funds to GDP	N=225 n=25 T=9	(European Comission, 2021e)	0.776	1.024	0	4.563	EUFu
EU Membership	N=225 n=25 T=9	(European Union, 2021a)	23.901	19.657	0	60	EUm
Real GDP Per Capita	N=225 n=25 T=9	(Eurostat, 2021c)	26126.44	16015.14	3440	83470	RcGDP

Dummy variable	Obser-vations	Source	Values and meaning	Number of Countries	Regression Code
Communi-sm	225	(Inglehart & Baker, 2000)	0: No Communist Past 1: Communist Past	0: 16 1: 9	Comm
Catholicism	225	(Inglehart & Baker, 2000) (Cooperman, Sahgal, & Schiller, 2017)	0: Not Historically Catholic 1: Historically Catholic	0: 10 1: 15	Rel/Cath
Protestan-tism	225	(Inglehart & Baker, 2000) (Cooperman, Sahgal, & Schiller, 2017)	0: Not Historically Protestant 1: Historically Protestant	0: 18 1: 7	Rel/Prot
Orthodoxy	225	(Inglehart & Baker, 2000) (Cooperman, Sahgal, & Schiller, 2017)	0: Not Historically Orthodox 1: Historically Orthodox	0: 22 1: 3	Rel/Orth

Dependent Variables – Cultural Values

   The dependent variables are cultural values. Data are drawn from the European Social Survey (2021).
This survey is suited to measuring the change in cultural values because it provides data for most EU
member states over time. The ESS has been conducted every two years since 2002, and nine rounds are
available through 2018. 25 EU member states are present in at least two rounds, and can thus be included
in the sample. An overview of the available data for all European countries are given in Appendix 1.
Figure 2 gives a simple depiction of how the data was generated.
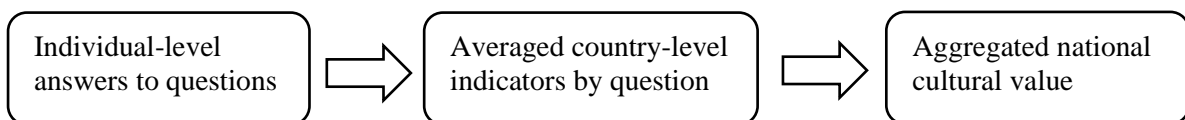
Figure 2: The process of creating cultural value indicators

   An extensive description on how the individual-level survey questions were selected, weighted,
scaled and adjusted to create country-level data can be found in Appendix 4.

Value Comparisons Economic Governance and the Role of the State
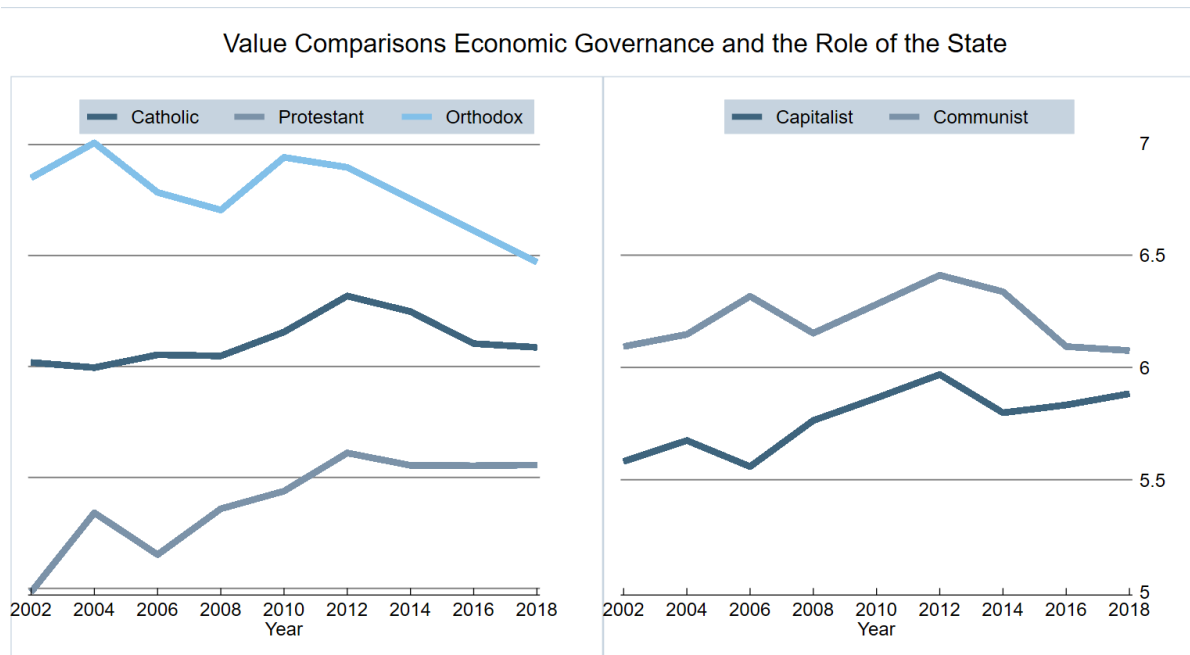
Figure 3: Average values over time for Economic Governance and the Role of the State

Economic Governance and the Role of the State is constructed using two ESS questions which concern the role of the state with respect to keeping its citizens safe and the redistribution of wealth. The two questions have a pairwise correlation value of 0.7718 and higher values indicate higher preferences for state involvement. Heat maps displaying the cultural values at the country level can be found in Appendix 5. Figure 3 shows clear differences between country groups. Countries here are grouped by two historic factors: religion and market systems. This choice is made because literature suggests path-dependencies exist for these groups (Inglehart & Baker, 2000) and that their cultures change at different speeds (Akaliyski, Welzel, & Hien, 2020). These arguments are accounted for in the empirical analysis of this paper. Appendix 3 provides an overview of the categories each country is placed in.

Protestant countries score lowest, whereas Catholic and Orthodox countries appear to find a stronger role of the state desirable. As explained by Bohn & De Jong (2011) the different attitudes towards the discretional powers of the state between Germany and France were a key component of the euro crisis. A similar divide has been identified in attitudes towards European
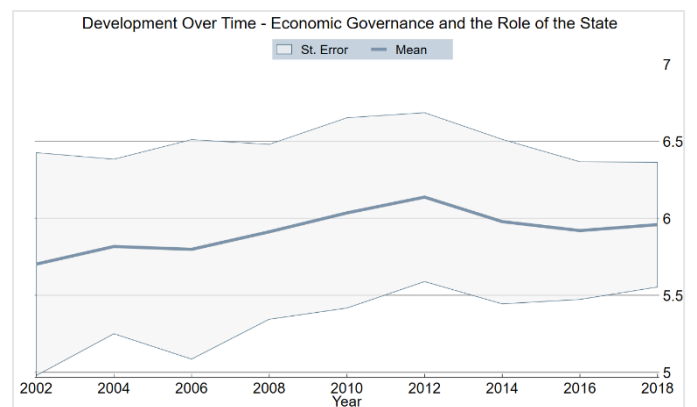
Figure 3.1: Development over time with standard error range

integration; some European political parties prefer a liberalised market, whereas others want a more strictly regulated one capable of redistributing wealth (Schäfer, Popa, Braun, & Schmitt, 2021). By constructing a value which merges attitudes towards the state's role in redistribution and protecting citizens I quantify these divides.

Values on *Economic Governance and the Role of the State* increase over time from a value of around 5.7 on average to 5.9 (Figure 3.1). This appears to be the result of a light upwards trend in Catholic and Protestant countries, whereas the Orthodox and communist subsamples trend downwards. Values converge. This is visible in Figure 3.1 by the narrowing of the standard error band. Convergence is discussed in section 3.2.

Value Comparisons Nationalism and Xenophobia
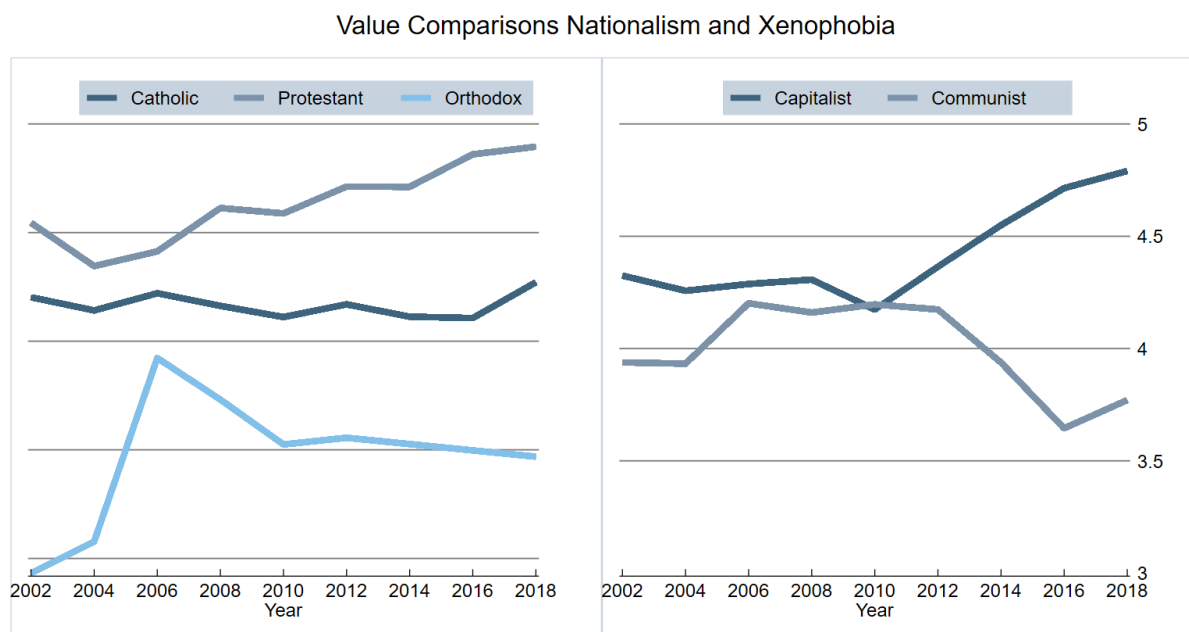
Figure 4: Average values over time for Nationalism and Xenophobia

Nationalism and Xenophobia is constructed using six questions concerning attitudes towards immigrants. A higher value indicates more openness to immigrants. The questions have a Cronbach's alpha of 0.9361. In addition to reflecting xenophobic attitudes held by people, nationalist values have been strongly linked to attitudes towards immigration (O'Rourke & Sinnott, 2006). This is because nationalism creates
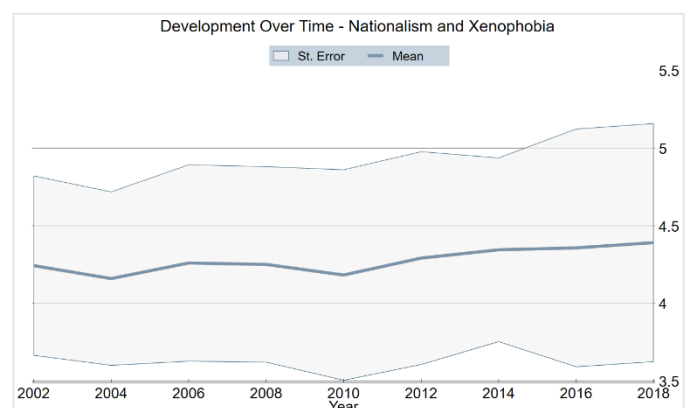
Figure 4.1: Development over time with standard error range

a sense that people from outside a country are 'others' which may pose a threat (Schmidt & Quandt, 2018). As is visible in Figure 4, Protestant countries are on average more open towards immigrants, and historically capitalist countries score higher than formerly communist countries on average. The average value is stable over time. The standard error band in Figure 4.1 of this variable grows, indicating cultural divergence over time. This increase in distance is clearly visible when countries are grouped by their historic market systems, but less so when religions are applied.

Value Comparisons Trade and Entrepreneurship
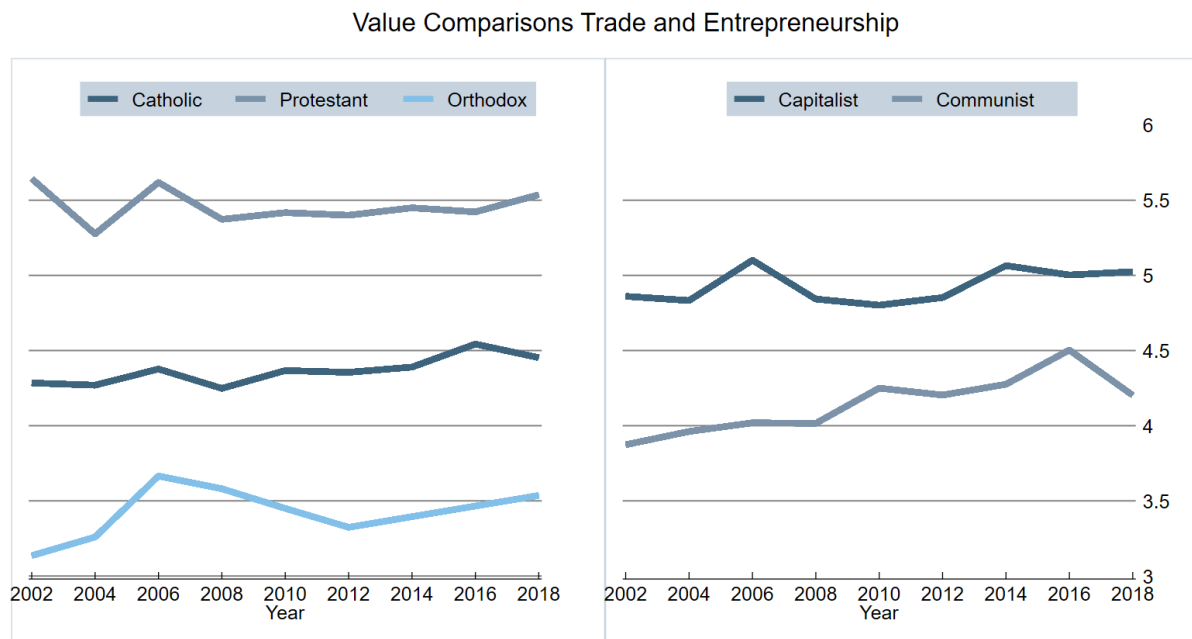
Figure 5: Average values over time for Trade and Entrepreneurship

The three questions used to construct *Trade and Entrepreneurship* concern trust in other people, they ask whether people are fair, can be trusted, and if they are helpful. The Cronbach's alpha value is 0.967 because all three questions are closely related to the concept of interpersonal trust. Interpersonal trust has been explicitly linked to trade (Yu, Beugelsdijk, & De Haan, 2015), and it has been shown that cultural values relating to trust affect trade between European countries (Guiso, Sapienza, & Zingales, 2009). Trust in people is critical to both trade and entrepreneurship since it is dependent on cooperation with others. If people perceive cooperation as a risk they will be less likely to enter into business ventures (Eunni, et al., 2007). It has been shown that there is a bidirectional
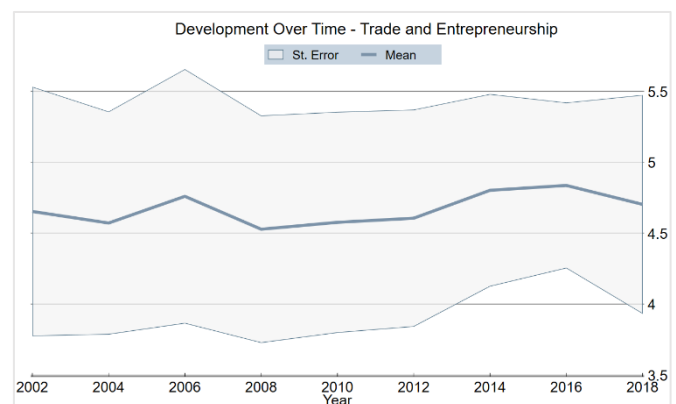
Figure 5.1: Development over time with standard error range

relation between trust and entrepreneurship (Welter, 2012), entrepreneurship and trust appear to reinforce each other. Protestant countries display the highest values on this measure. Orthodox countries display consistently lower values; although the amount of data for them available is limited (Appendix 1). The data for *Trade and Entrepreneurship* are stable over time around an average value of 4.6-4.7 as shown in Figure 5.1, also visible in this graph is a slight narrowing of the standard error band, indicating distance between countries on this variable has declined.

Independent Variables – Trade and the EU

Imports to GDP is used to quantify trade. It captures imports of all goods and services as a percentage of GDP (World Bank, 2021). This variable gradually grows over time from 47% to 62% on average. It displays a clear negative skew as most countries have a value of *Imports to GDP* lower than 50% (Appendix 6). A measure of imports is selected to make this data comparable to the data used to quantify trade in relation to cultural distance. Data on imports are also employed for that relation.
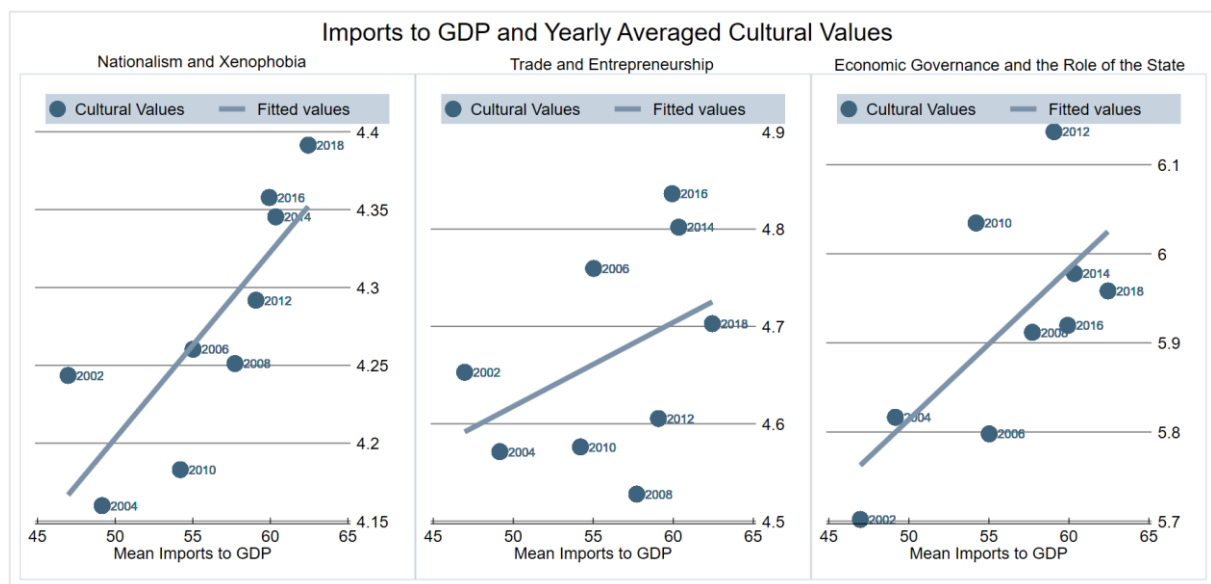
Figure 6: Yearly averages of cultural values plotted against yearly averages of Imports to GDP

Figure 6 displays the cultural values plotted against *Imports to GDP* averaged by year. This yields the interesting result that in all cases the score on the cultural value indicator is generally higher in years in which *Imports to GDP* is higher. The corresponding of higher *Imports to GDP* to a desire for a stronger role of the state in *Economic Governance and the Role of the State* fits with the findings of Alesina, Tabellini and Trebbi (2017). They find that that Europeans have become more favourable towards a

stronger role of the state. Counter to the hypothesised direction, *Nationalism and Xenophobia* also appears to correlate positively to *Imports to GDP*. The expectation was that increased imports could foster negative attitudes to outsiders as a result of job losses. For *Trade and Entrepreneurship* this corresponds with the hypothesis as it indicates that years in which people displayed higher interpersonal trust have more trade. Of course, this simple graphic representation cannot account for the role of other variables and trends, which are discussed below.

To include the economic role of the EU, sources of EU funding are included. Akaliyski, Welzel, & Hien (2020) mention these funds as a cause of cultural convergence in the EU. They argue that the role of these funds in improving existential security and living conditions could affect cultural values. Data on these funds are drawn from the European Commission (2021e). *EU Funds to GDP* aggregates the values of the EU's main funds, an overview is provided in Appendix 7. The aggregate value for these funds grows from an average value of 0.26% of GDP for the individual countries in the sample in 2002 to 0.95% of GDP by 2018. Because these funds are primarily directed at the poorest regions in the EU the data display a negative skew as the majority of EU countries receive comparatively little funding. Countries such as Hungary and Portugal are outliers and receive relatively large amounts of funding.

The EU is also a source of interaction through its institutions and other channels. To account for this broader role the EU may play the time of *EU Membership* per the 1st of January in each year is included in the sample. For countries which were members of the prior ECSC and the EEC their date of entry into these organisations is taken. Countries which entered into the EU after 2001 are assigned a value of zero until they become EU members. Naturally, the values of this variable increase with time.

Finally, *Real GDP per Capita* is included to control for the effect that levels of wealth have been shown to have on cultural values (Inglehart & Baker, 2000). This variable takes the value of GDP in 2010 in euros as a baseline to correct for inflation. For ease of interpretation it is converted to thousands of euros in the regressions. It displays a moderate upward trend, Luxembourg is a clear outlier with high values. Bulgaria is the least economically developed country in the sample by this measure.

Independent Variables – Communist and Religious Histories

Dummies are included to account for the path-dependencies found by Inglehart & Baker (2000). They categorise countries according to their past dominant religions and whether they were communist. Six to nine communist countries are present in the ESS in most years. The 2002 survey includes only four communist countries. The dummies on religion capture the historically dominant religion as defined by Inglehart and Baker, with data on some countries not included by them being drawn from Cooperman, Sahgal, & Schiller (2017). Countries with Protestant and Catholic pasts are consistently present in the ESS, with six to seven Protestant and nine to fourteen Catholic countries present depending on the year of the survey. The Orthodox countries present a challenge: only three are included in the sample; Greece, Cyprus and Bulgaria. Greece is not included after 2010 and Cyprus and Bulgaria are inconsistently available. As a result, no Orthodox countries are in the samples for 2014 and 2016. Caution is therefore required when interpreting results. An overview of the countries and their respective past-related dummies is presented in Appendix 3.

Pairwise Correlations

Table 2: Pairwise Correlations Data 3.1 (Codes from Table 1)

Var	EcGov	NatXen	TrdEnt	EUm	ImGDP	EUFu
EcGov	1.000					
NatXen	-0.397*	1.000				
TrdEnt	**-0.784***	**0.499***	1.000			
EUm	-0.370*	0.256*	0.341*	1.000		
ImGDP	0.116	-0.169*	-0.082	0.056	1.000	
EUFu	**0.413***	-0.318*	**-0.402***	-0.391*	0.106	1.000
RcGDP	**-0.611***	**0.458***	**0.712***	**0.675***	**0.405***	**-0.519***

As Table 2 shows there are frequent instances of strong collinearity, pairwise correlations significant at the 10% level have an asterisk, instances where the value is higher than 0.4 or lower than -0.4 are marked in bold. EU Funds are explicitly directed at lesser developed regions in the EU, which corresponds with their collinearity to *Real GDP per Capita*. *Real GDP per Capita* displays strong correlations to all variables in the sample, including to cultural change. Variables such as those concerning EU funds and *EU Membership*, which are in part intended to advance economic development, may overlap with *Real GDP per Capita* in correlations found in regression results.

3.2 Data on Cultural Distance

Dyads are constructed because cultural convergence requires measurements of the distance of values between countries. Dyads measure the difference between the values of a variable for a pair of countries. The pairs of countries included in the dataset overlap as a result; the pair Austria-Belgium has the same values as Belgium-Austria for example. Independent variables concerning bilateral trade are introduced in this dataset. Appendix 8 provides an overview of histograms and scatterplots for the variables in this section. The timeframe is T=9, resulting in a wide panel with 600 pairs. The data becomes more sensitive to missing values because one missing country observation removes multiple possible dyads.

Table 3: Descriptive Data 3.2

Variable	Observations and timeframe	Source	Mean	Std. Deviation	Min Value	Max Value	Regression Code
Dependent Variables (Cultural Distance Dyads)							
Economic Governance and the Role of the State	N=3414 n=588 T=5.80	(European Social Survey, 2021)	0.642	0.490	0.0006	2.641	DyEcGov
Nationalism and Xenophobia	N=3484 n=592 T=5.88	(European Social Survey, 2021)	0.740	0.579	0.0005	3.122	DyNatXen
Trade and Entrepreneurship	N=3484 n=592 T=5.88	(European Social Survey, 2021)	0.902	0.632	0.0006	3.099	DyTrdEnt
Independent Variables (Economic Interaction and EU Dyads)							
Average Bilateral Imports	N=5218 n=600 T=8.670	(Eurostat, 2021a)	1.262	1.829	0.004	12.390	BiTr
Average Cultural Imports	N=4658 n=600 T=7.763	(Eurostat, 2021b)	0.007	0.015	0.000	0.166	BiTrC
Average Printed Imports	N=4800 n=600 T=8	(Eurostat, 2021b)	0.001	0.003	0	0.029	BiTrPr
Average EU Funds	N=5400 n=600 T=9	(European Comission, 2021e)	0.776	0.752	0	4.227	DyEUFu
Joint EU Membership	N=5400 n=600 T=9	(European Union, 2021a)	13.005	14.051	0	60	JEUm
Real GDP Per Capita Difference	N=5400 n=600 T=9	(Eurostat, 2021c)	17425.99	14957.66	10	76920	RcGDPdf
Geographic Distance	N=5400 n=600 T=9	(CEPII, 2021)	1359.127	749.945	134.64	3777.498	GEOdist

Dummy Variable	Obser- vations	Source	Values and meaning	Number of Dyads	Regression Code
Communist- Capitalist	5400	(Inglehart & Baker, 2000)	0: No Communist- Capitalist Pair 1: Communist-Capitalist Pair	0: 312 1: 288	DyComm/ CoCa
Catholic- Protestant	5400	(Inglehart & Baker, 2000) (Cooperman, Sahgal, & Schiller, 2017)	0: No Catholic-Protestant Pair 1: Catholic-Protestant Pair	0: 390 1: 210	DyRel/ CaPo
Catholic- Orthodox	5400	(Inglehart & Baker, 2000) (Cooperman, Sahgal, & Schiller, 2017)	0: No Catholic-Orthodox Pair 1: Catholic-Orthodox Pair	0: 510 1: 90	DyRel/ CaOr
Protestant- Orthodox	5400	(Inglehart & Baker, 2000) (Cooperman, Sahgal, & Schiller, 2017)	0: No Protestant-Orthodox Pair 1: Protestant-Orthodox Pair	0: 558 1: 42	DyRel/ PrOr

Dependent Variables - Cultural Distance

   To measure cultural distance, dyads are constructed using values constructed for cultural values. This follows the example of several recent publications (Beckfield, 2016; Akaliyski, 2017; Akaliyski, 2019). Dyads give a value for the cultural distance between a pair of countries at a specific point in time. The average distance in 2006 and 2018 is provided in the graphs given for each cultural value. The countries in the sample in 2006 match more closely to 2018 than those in 2002. Graphs are provided for the distance between countries with different religious and market system histories to observe whether the path-dependencies argued for by Inglehart & Baker (2000) are present in the data.
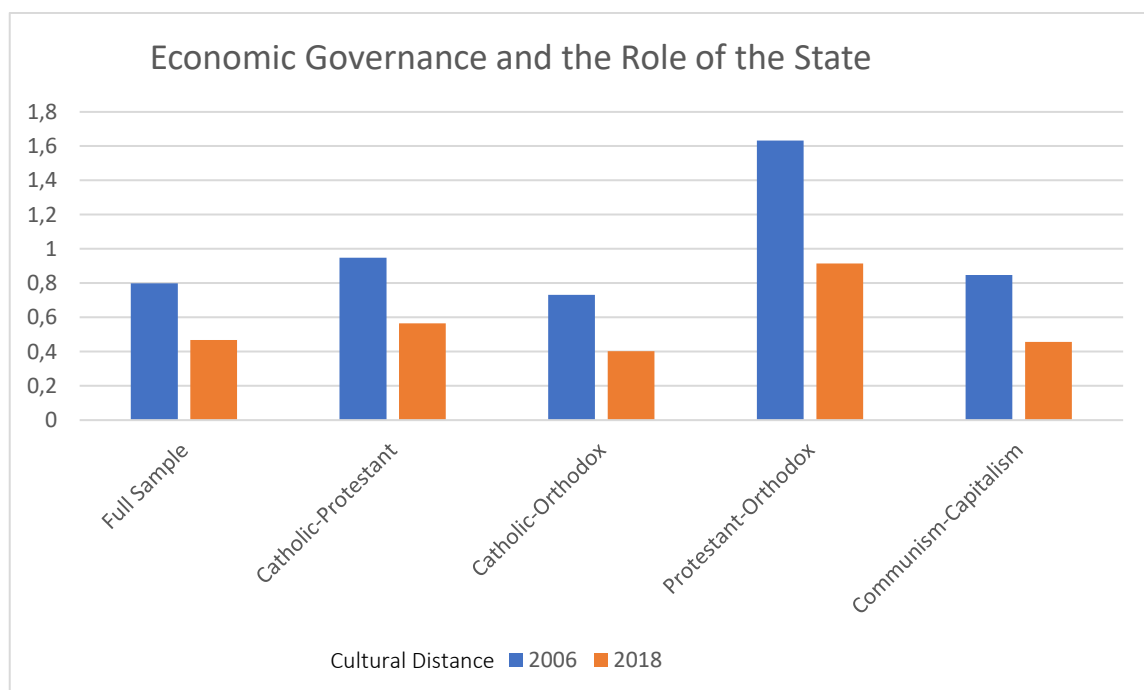
Figure 7: Average dyadic difference by country groupings for Economic Governance and the Role of the State

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Figure 7 displays the development of cultural distance between country groups. *Economic Governance and the Role of the State* displays convergence. Orthodox and formerly communist countries have lowered their scores to values closer to the average, while Protestant countries have increased to be closer to the average value and the values of Catholic countries (Figure 3).
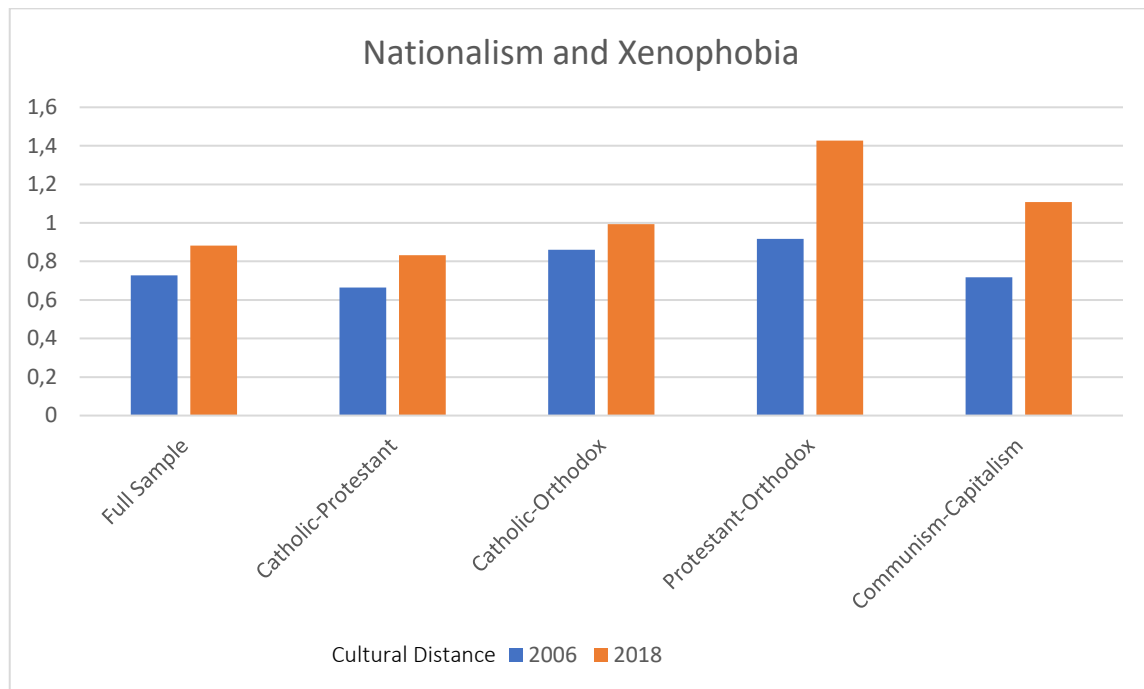
Figure 8: Average dyadic difference by country groupings for Nationalism and Xenophobia

There is divergence in values relating to *Nationalism and Xenophobia* over time. It is notably strong between countries with a communist history and those without. As can be seen in Figure 4 this is the result of a sharp divergence that occurs after 2010. Protestant countries have become more open to migrants whereas formerly communist countries have become less open. Orthodox countries diverge strongly from others, but it should be noted that only Cyprus and Bulgaria are included in these graphs.

The data on *Trade and Entrepreneurship* generally display light convergence between 2006 and 2018. Catholic and formerly communist countries have seen their scores on this value grow (Figure 5). The countries with scores above the average are mainly Protestant countries, these display stable scores over time. This has resulted in the gap of Catholic and communist countries to the average value of the sample being closed. The Orthodox countries diverge slightly, their rate of increase on the indicator was not enough to close their gap to other countries.
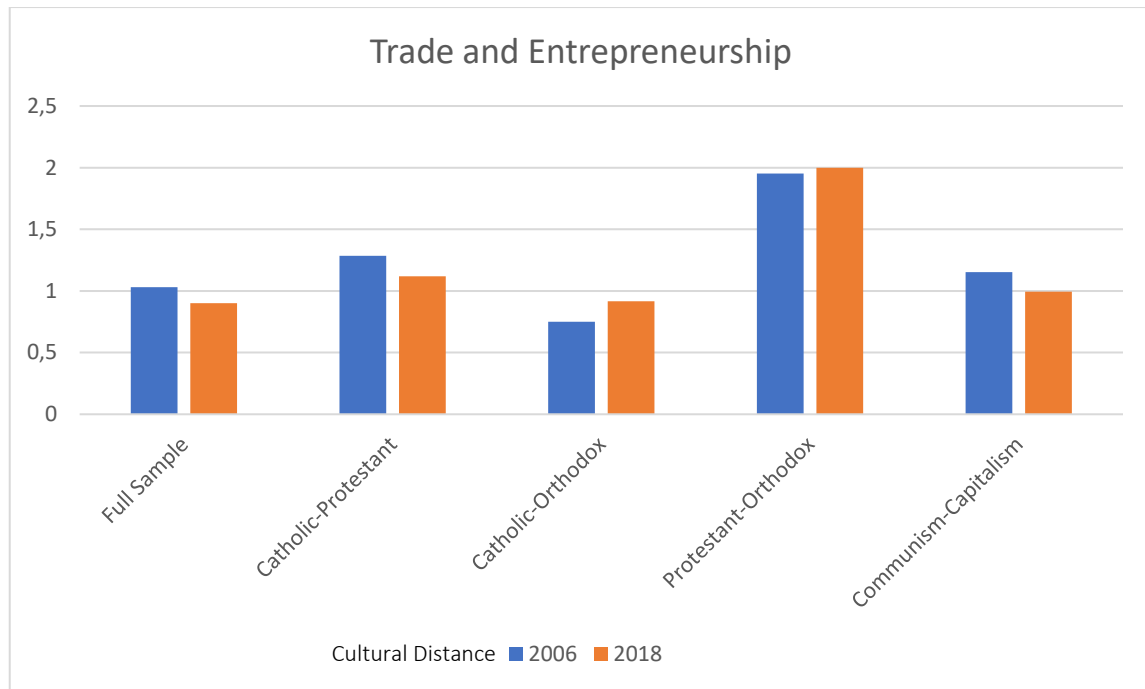
Figure 9: Average dyadic difference by country groupings for Trade and Entrepreneurship

Independent Variables – Economic Interactions and the EU

Data on bilateral trade are drawn from Eurostat (2021). Data are also available for trade in cultural goods such as printed books and art (Eurostat, 2021b). Data on aggregated bilateral trade would not accurately represent the degree of interaction between countries as larger economies tend to trade more. To resolve this the average bilateral imports as a percentage of GDP is constructed. For example: if German imports from the Netherlands are 5% of German GDP and Dutch imports from Germany are 10% of Dutch GDP a value of 7.5% is created for the pair Germany-Netherlands.

Trade data are constructed based on several trade indicators. *Average Bilateral Imports* is constructed using data on the total imports of goods available from Eurostat (2021a). This was done by matching data on the goods specific pairs of countries imported from each other by year. Since only EU-members report data to Eurostat, data for countries which joined the EU after 2002 are partially missing. This data was substituted by the exports EU-members reported to those countries. This means that data such as the amount of goods imported by Croatia prior to its EU-accession from existing EU members such as France becomes available. Data on trade flows between countries prior to their EU accession remains unavailable and are thus missing from the sample. The average value of this variable increases from 1.22% of GDP in 2002 to 1.41% of GDP by 2018.

Figure 10 displays the development of cultural distance and bilateral trade over time. An alternate version of this graph (Graph 10.1) is provided in Appendix 9 which adjusts the sample to exclude Orthodox countries which are unavailable in some years. This yields a noticeable smoother line for *Average Bilateral Imports* and removes the reduction in trade between 2016 and 2018.
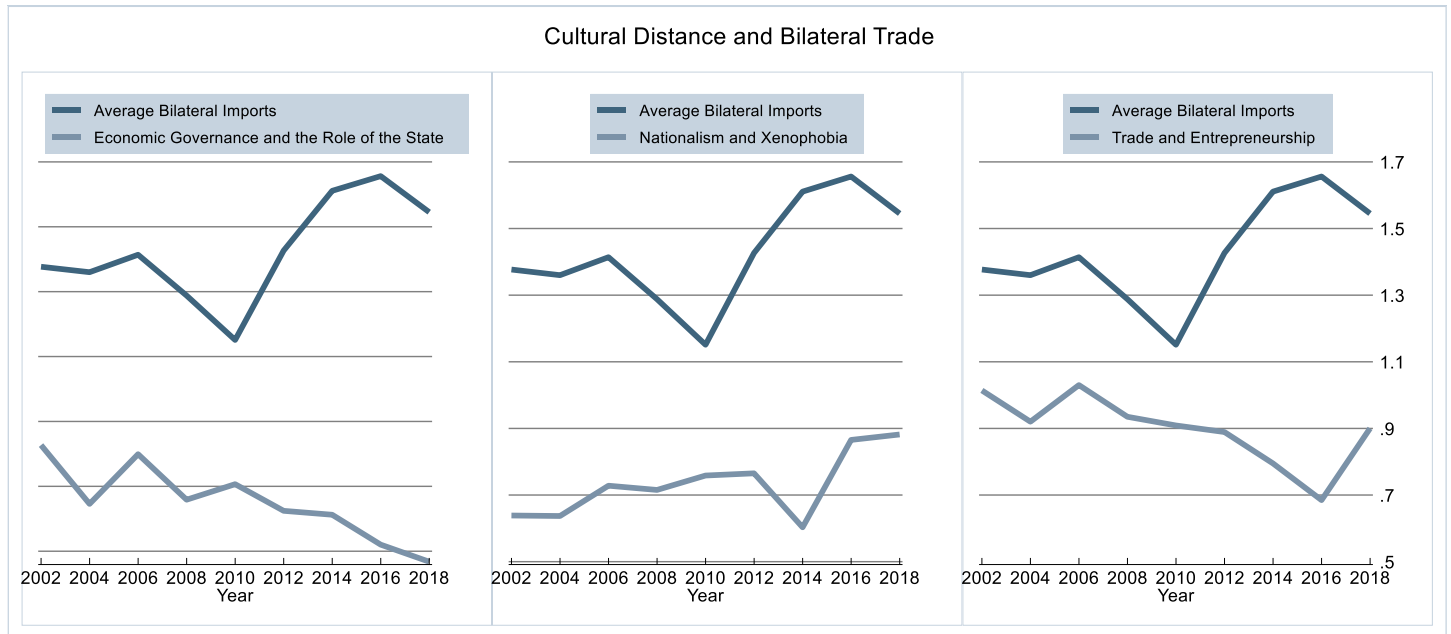
Figure 10: Yearly averages of cultural distance dyads compared to the yearly average value for Bilateral Trade

Distance for *Economic Governance and the Role of the State* reduces over time. The combination of this with increased trade over time could be linked to a desire for more state protection due to people being affected by trade though its dislodging of local industries (Colantone & Stanig, 2017; Dippel, Gold, Heblich, & Pinto, 2021). Increased exposure to trade shocks can also explain a desire for more protection (Feigenbaum & Hall, 2015). Distance of *Nationalism and Xenophobia* increases as trade increases. If industries affected by trade are concentrated in specific countries attitudes could diverge as a result. Distance of *Trade and Entrepreneurship* rises in 2016 after following a downward pattern. This upward shift is smoothed in Figure 10.1 (Appendix 9), suggesting the shifting availability of data for Orthodox countries affects the depiction. Figure 10.1 suggests positive covariance between *Trade and Entrepreneurship* and *Average Bilateral Imports* which would be counter to the hypothesis.

To account for the possible role of cultural goods in relation to cultural change posited by Disdier, Tai, Fontagné, & Mayer (2010) indicators of cultural goods are incorporated. These data are available from 2004 in Eurostat (2021b). Appendix 10 gives an overview of the goods included under *Average*

Cultural Imports. Due to this variable covering a far smaller part of trade flows between countries its average values in 2004 and 2018 are 0.008% and 0.007% of GDP respectively. To address the possibility that the effect on values is stronger when people engage with a foreign language (Akkermans, Harzing, & Van Witteloostuijn, 2010) *Average Printed Imports* are considered separately. These include newspapers, journals and periodicals. These goods are chosen over media such as film and music, which can be consumed without having knowledge of a language through aids like subtitles. Values of *Average Printed Imports* decline from 0.0009% to 0.0004% of GDP between 2004 and 2018.

Dyads are constructed covering EU funds, time spent in the EU and real per capita GDP. The dyadic indicators for EU funds are constructed by taking the average percentage of GDP value for a pair of countries. Akaliyski, Welzel, & Hien (2020) propose that the EU's funding towards countries fosters convergence towards values championed by the EU. The dyad for time spent in the EU indicates how long countries have been in the EU together. For *Real GDP per Capita Difference* the dyad measures the difference in real per capita GDP for a pair of countries. This accounts for the argument by Inglehart & Baker (2000) that increased wealth is associated with shifts in cultural values. The measure of GDP difference cannot consider the absolute wealth of countries, but it is appropriate in regressions on cultural distance that also do not account for absolute value levels. This variable is converted to thousands of euros in the regressions. Table 4 gives an overview of the average values.

Table 4: Change in Independent Variables

Variable	Value 2002	Value 2018
Average EU Funds	0.26%	0.95%
Joint EU Membership	6.9 years	20.4 years
Real GDP Per Capita Difference	€16694	€18743

The variable *Geographic Distance* is included as an interaction term to account for the role of distance in bilateral trade. As has long been known the amount of trade between countries is negatively correlated with the distance between them (Isard, 1954). As a result it is possible that the relation between cultural distance and bilateral trade is distorted by the distance between countries. A unit of trade between the Netherlands and Belgium may not hold the same significance as a unit of trade between the Netherlands and Cyprus. *Geographic Distance* gives the distance in kilometres between the weighted population centres of countries as calculated by Mayer and Zignago (2011). To illustrate, this means that for

Germany the weighted population centre is located to the South-East of Berlin because the population centres in the south and east of the country are taken into account. In doing so the variable is intended to more closely approximate the average distance between trading parties in two countries.

Independent Variables – Historic Difference Dummies

Chapter 3.1 described the religious and market system histories of countries. Dummies are constructed for pairs with different histories. These are constructed for each combination of different dominant historical religions and for pairs consisting of a historically communist and historically non-communist country. These can be used to create interaction effects to consider cultural distance between specific groups of countries. An overview of these variables is presented in Table 3, the different values for the dependent variables for cultural convergence are presented in Figures 6, 7 and 8.

Pairwise Correlations

Table 5: Pairwise Correlations Data 3.2 (Codes from Table 3)

Var	DyEcGov	DyNatXen	DyTrdEnt	BiTr	BiTrC	BiTrPr	DyEUFu	JEUm	RcGDPdf
DyEcGov	1.000								
DyNatXen	0.167*	1.000							
DyTrdEnt	**0.596***	0.205*	1.000						
BiTr	-0.169*	-0.0711*	-0.262*	1.000					
BiTrC	-0.129*	-0.095*	-0.191*	**0.629***	1.000				
BiTrPr	-0.110*	-0.110*	-0.158*	**0.546***	**0.592***	1.000			
DyEUFu	-0.145*	0.120*	-0.082*	-0.089*	-0.176*	-0.040*	1.000		
JEUm	-0.062*	-0.161*	-0.125*	0.266*	0.303*	0.092*	-0.227*	1.000	
RcGDPdf	0.288*	0.136*	**0.428***	-0.151*	-0.181*	-0.123*	-0.096*	-0.044*	1.000
GEOdist	0.1363*	0.1781*	0.2791**	**-0.5010***	-0.3480**	-0.3063*	0.0955*	-0.1829*	-0.0197

Table 5 depicts pairwise correlations significant at the 10% level marked with an asterisk, large coefficients are marked in bold. Collinearity exists primarily between related variables such as bilateral trade indicators. This is not an issue because these are primarily used separately. *Average Bilateral Imports* are significantly and negatively correlated with all measures of cultural distance. Differences in *Trade and Entrepreneurship* values are notably correlated to *Real GDP Per Capita Difference*. Differences in *Trade and Entrepreneurship* values also display correlation to differences in values on *Economic Governance and the Role of the State*, which corresponds to them displaying correlation for the basic values in Table 2. *Geographic Distance* reduces the amount of bilateral trade as expected.

4. Empirical Strategy

4.1 Cultural Values

To study the relation between cultural values and trade a model using country-pooled random effects is constructed. This allows the influence of time-invariant variables such as religion and communist histories to be included. A Durbin-Wu-Hausman test is conducted to test whether fixed effects may be more suitable for each regression. Random effects regressions are employed as the test does not reject the adequacy of random effects at the 10% confidence level in any case (Appendix 11). The full regressions applied for this data look as follows:

$(EcGov/NatXen/TrdEnt)_{it} = \beta_0 + \beta_1 \, ImGDP_{it} + \beta_2 \, EUFu_{it} + \beta_3 \, EUm_{it} + \beta_4 \, RcGDP_{it} + Y_1 \, Year + Y_2 \, Rel + Y_3 \, Comm + a + u_{it} + \varepsilon_{it}.$

Imports to GDP captures trade and is the variable of interest for the testing of hypotheses. A positive correlation to *Economic Governance and the Role of the State (EcGov)* and *Trade and Entrepreneurship (TrdEnt),* and a negative correlation with *Nationalism and Xenophobia (NatXen)* are expected as per the hypotheses. *EU Funds to GDP (EUFu)* and *EU Membership* (*EUm*) do not have expected signs as they are included to capture the role of the EU, which has been argued to foster convergence (Akaliyski, Welzel, & Hien, 2020). Their inclusion here serves to discern whether they are related to cultural values, which may aid the interpreting of potential relations to cultural distance. People with lower incomes tend to demand more redistribution and protection from the state (Hassenfeld & Rafferty, 1989). *Real GDP per Capita* is thus expected to be negatively related to *Economic Governance and the Role of the State.* Countries with a higher GDP per Capita are generally more tolerant of outgroups (Inglehart & Baker, 2000). Thus, *GDP per Capita* is expected to be positively correlated to *Nationalism and Xenophobia.* Interpersonal trust, measures of which are used to construct *Trade and Entrepreneurship* is a key factor in economic development due to its role in economic interactions (Zak & Knack, 2001) and is expected to be positively correlated to *Real GDP per Capita.*

4.2 Cultural Distance

Pooled fixed effects are used and observation are pooled by dyad in empirical models for cultural distance. This is an empirical contribution as existing papers have not employed dyad-fixed effects due

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to data limitations (Cyrus, 2015). Dyadic data may produce clustering that creates too large standard errors, but no solution to this exists in Stata (Aronow, Samii, & Assenova, 2015). Durbin-Wu-Hausman tests (Appendix 11) show that fixed effects are more suitable for this analysis. First, basic regressions are run for the relations between the cultural distance dyads and variables for the different types of bilateral trade:

$$Dy(EcGov/NatXen/TrdEnt)_{it} = \beta_0 + \beta_1\ (BiTr/BiTrC/BiTrPr)_{it} + \beta_2\ RcGDPdf_{it} + \beta_3\ DyEUFu_{it} + \beta_4\ JEUm_{it} + a_i + u_{it}.$$

Next, versions of these models including interaction terms and year fixed effects are employed. Time fixed effects are added to observe differences between years. By interacting *Average Bilateral Imports* with the population-weighted distance between countries I correct the trade measure for potential biases resulting from the gravity effect. Economic interactions with distant countries require more communication and coordination between trading parties. This could alter their relation to culture. This interaction is not applied to the variables concerning cultural goods; there is no obvious reason to think a consumer would respond differently to a cultural good because it was imported across a greater distance. Interactions with the dummies for religion and communism are also applied. Akaliyski, Welzel, & Hien (2020) find that Protestant countries converge fastest, followed by Catholic, ex-communist and Orthodox countries. As such, I expect that a dyad consisting of a Protestant and Catholic country converges faster than one with a Protestant and an Orthodox country for example. If the two countries included in Communist-Capitalist have different religions they will overlap with pairs included in the religious dummies. To account for possible problems arising from collinearity between these variables all full regressions are also conducted with the dummies concerning communism and religion separately. These results are reported in Appendix 13 and are reported when they significantly alter results compared to the 'full model'. The full regression equations are the following:

$$Dy(EcGov/NatXen/TrdEnt)_{it} = \beta_0 + \beta_1\ (BiTr/BiTrC/BiTrPr)_{it} + \beta_2\ RcGDPdf_{it} + \beta_3\ DyEUFu_{it} + \beta_4\ EUm_{it} + \beta_5\ (Trade)*GEOdist_{it} + \beta_6\ (Trade)*DyRel_{it} + \beta_7\ (Trade)*DyComm_{it} + Y_1\ Year + a_i + u_{it}.$$

Distance values on *Economic Governance and the Role of the State (DyEcGov)* are expected to be negatively correlated with trade, meaning that cultural distance declines as trade increases. For

Nationalism and Xenophobia (DyNatXen) no clear effect is expected. The disruptive effects of trade is thought to result in more negative attitudes towards outsiders at the local level, but it is unclear how national aggregates are affected. Increased interactions through trade are expected to be correlated to reduced cultural distance with respect to *Trade and Entrepreneurship (DyTrdEnt)*. The interactions between *Geographic Distance* and trade indicators do not change these expectations.

If convergence is found it is important to understand in what direction countries converge. By testing a regression with the *average cultural value* of a dyad as the dependent variable it can be seen in which direction values generally move. The exact direction the individual countries in the pair move in cannot be stated with certainty. The variable for the difference in GDP is replaced by an indicator of average GDP to match the use of average cultural values as dependent variable. As cultural divergence would offset effects on average cultural values this approach is not applied when no convergence is found.

Removing barriers to trade can cause an adverse shock to trade in cultural goods because barriers are needed to preserve small cultural industries (Marvasati, 1994). This presents a challenge because some countries included in the sample join the EU, and thus remove their trade barriers with the Union, *during* the period the data cover. To account for this a control will be carried out which removes dyads including countries which have been an EU member for two years or less. This is only done for cultural goods as Marvasati finds no effect for printed good despite specifically testing them. Appendix 16 reports the results of this control with the dummies for religion and communism used separately.

Average *EU Funds (DyEUFu)* and *Joint EU Membership* capture EU funding intended to foster economic convergence and the time countries have been able to interact through the EU respectively. Both are expected to be negatively correlated with cultural distance. As explained in section 4.2 real GDP is expected to be significantly correlated to each cultural value. As a result *Real GDP Per Capita Difference* is expected to be positively correlated to cultural distance. For each indicator of cultural distance there are 15 regressions. In each case a set of seven regression using *Average Bilateral Imports* and an expanding set of controls is conducted. *Average Cultural Trade* and *Average Printed Trade* are used in four expanding regressions each.

5. Results

This chapter presents results. It determines whether the stated hypotheses of this paper are accepted or rejected. Coefficients with p-values of 0.10, 0.05 and 0.01 are marked with parentheses to indicate statistical significance. First, the results concerning cultural values are presented, followed by the results concerning cultural distance. Some tables in this chapter do not display time dummies for space reasons. Regression results for cultural values are reported in written tables. The entire regressions are presented in Appendix 12. Chapter 6 discusses theoretical implications.

5.1 Cultural Values

Table 6 displays the regression results for cultural values. Based on model (1) hypothesis 1a *"There is a positive relation between trade and values relating to economic governance and the role of the state in the EU."* is rejected. No significant correlation is found. The only non-dummy variable with a significant correlation is *EU Funds to GDP*, which is negatively correlated. Interestingly, this means that countries which receive more EU funding find redistribution and state protection less desirable. Religion dummies account for a large amount of difference between countries, presented as the difference from Catholic countries. Protestant countries score 1.3 lower than Orthodox countries, compared to 0.6 lower for Catholic countries. This corresponds to the argument of Hien (2019) that Protestant countries are less comfortable with state intervention than Catholic states. A final interesting observation is the increase of this value between 2008 and 2012, a period during which the financial crisis and euro crisis took place.

Hypothesis 2a: *"There is a negative relation between trade and the strength of values relating to nationalism and xenophobia in the EU."* is accepted. Model (2) reports that a 1% increase in *Imports to GDP* is correlated with a decline of 0.01 on the scale for *Nationalism and Xenophobia*. Higher values on this scale indicate increased openness, so a higher amount of trade is correlated with being less open to migrants. This aligns with the argument that imports are associated with more negative attitudes towards outsiders due to their disruptive effects on industry (Colantone & Stanig, 2017; Dippel, Gold, Heblich, & Pinto, 2021). *Real GDP per Capita* is significantly positively correlated; greater economic wealth is associated with more openness to outsiders as also found by Inglehart & Baker (2000).

Table 6: Random effects – Cultural values

Dependent variable: Cultural Values	(1) Economic Governance and the Role of the State	(2) Nationalism and Xenophobia	(3) Trade and Entrepreneurship
Imports to GDP	-0.002	-0.010**	0.002
	(0.532)	(0.044)	(0.392)
EU Funds to GDP	-0.048*	-0.046	0.049*
	(0.091)	(0.293)	(0.061)
EU Membership	-0.002	-0.003	-0.012***
	(0.652)	(0.763)	(0.006)
Real GDP per Capita	-0.006	0.033***	0.0141**
	(0.402)	(0.004)	(0.030)
Communism Dummy	0.079	0.615	-0.610***
	(0.759)	(0.161)	(0.009)
Catholicism Dummy	0	0	0
	(.)	(.)	(.)
Protestantism Dummy	-0.666***	0.193	0.925***
	(0.000)	(0.455)	(0.000)
Orthodoxy Dummy	0.643***	-0.439	-0.998***
	(0.002)	(0.234)	(0.000)
2002 Dummy	0	0	0
	(.)	(.)	(.)
2004 Dummy	0.121*	-0.068	-0.075
	(0.092)	(0.511)	(0.238)
2006 Dummy	0.068	0.012	0.145**
	(0.364)	(0.917)	(0.031)
2008 Dummy	0.162**	0.123	0.040
	(0.037)	(0.296)	(0.561)
2010 Dummy	0.285***	0.072	0.116
	(0.000)	(0.564)	(0.112)
2012 Dummy	0.458***	0.196	0.074
	(0.000)	(0.165)	(0.361)
2014 Dummy	0.419***	0.152	0.083
	(0.000)	(0.314)	(0.334)
2016 Dummy	0.250**	0.122	0.265***
	(0.012)	(0.440)	(0.003)
2018 Dummy	0.282***	0.213	0.227**
	(0.007)	(0.210)	(0.015)
Constant	6.200***	3.729***	4.299***
	(0.000)	(0.000)	(0.000)
N	179	181	181
R^2 Within	0.2671	0.0942	0.1925
R^2 Between	0.7303	0.4411	0.8631
R^2 Overall	0.6370	0.3481	0.8187

p-values in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Hypothesis 3a: *"There is a positive relation between trade and the strength of values relating to trade and entrepreneurship in the EU."* is rejected based on model (3). No significant correlation is found. The variables relating to the role of the EU do display significant effects. A 1% increase in EU funding is correlated with a 0.05 point increase on the 10-point scale. This means this variable is associated with higher interpersonal trust values, which are used to construct *Trade and Entrepreneurship*. One additional year of EU-membership is associated with a score 0.012 points lower. The importance of

interpersonal trust in economic development is mirrored in the results as a €1000 increase in *Real GDP per Capita* is associated with increased scores of 0.014. Countries with a communist past score 0.6 points lower than those without. The oppressive nature of communist regimes has been identified as a cause of this (Bjørnskov, 2007). Catholic and Protestant countries score 1.0 and 1.9 point higher than Orthodox countries respectively, presenting marked differences in values for *Trade and Entrepreneurship*. The year dummies display a drop in intercept values from 2006 (0.145) to 2008 (0.040), the first year of the great recession, which is not recovered until 2016.

5.2 Cultural Distance – Economic Governance and the Role of the State

Table 7: Cultural distance *Economic Governance and the Role of the State – Conventional trade*

Dependent Variable: Economic Governance and the Role of the State	(4) Basic	(5) GDP difference added	(6) EU membership added	(7) EU Funds added	(8) Distance interaction added	(9) History interactions added	(10) Year Dummies added
Average Bilateral Imports	0.007 (0.630)	0.008 (0.605)	0.056*** (0.000)	0.059*** (0.000)	0.065*** (0.005)	0.112*** (0.000)	0.136*** (0.000)
Real GDP Per Capita Difference		-0.014*** (0.000)	-0.006*** (0.009)	-0.007*** (0.002)	-0.007*** (0.002)	-0.007*** (0.002)	-0.004* (0.065)
Joint EU Membership			-0.016*** (0.000)	-0.015*** (0.000)	-0.014*** (0.000)	-0.014*** (0.000)	-0.029*** (0.001)
Average EU Funds				-0.038*** (0.000)	-0.038*** (0.000)	-0.036*** (0.000)	-0.048*** (0.000)
Trade*Distance					-0.000 (0.737)	0.00006* (0.099)	0.00008** (0.031)
Communist-Capitalist Trade						-0.182*** (0.000)	-0.203*** (0.000)
Catholic-Protestant Trade						0.007 (0.801)	0.006 (0.844)
Catholic-Orthodox Trade						-0.187 (0.141)	-0.121 (0.328)
Protestant-Orthodox Trade						-0.142 (0.354)	-0.066 (0.658)
2002 Dummy							0 (.)
2004 Dummy							-0.090*** (0.000)
2006 Dummy							0.069** (0.048)
2008 Dummy							-0.026 (0.611)
2010 Dummy							0.119* (0.100)
2012 Dummy							0.113 (0.190)
2014 Dummy							0.212** (0.039)
2016 Dummy							0.219* (0.062)
2018 Dummy							0.121 (0.369)
Constant	0.634*** (0.000)	0.838*** (0.000)	0.864*** (0.000)	0.894*** (0.000)	0.898*** (0.000)	0.852*** (0.000)	0.906*** (0.000)
N	3372	3372	3372	3372	3372	3372	3372
R^2 Within	0.0001	0.0147	0.0904	0.0949	0.0949	0.1075	0.1604
R^2 Between	0.0462	0.0406	0.0401	0.0470	0.0504	0.0506	0.0308
R^2 Overall	0.0287	0.0888	0.0113	0.0147	0.0161	0.0234	0.0067

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Following hypothesis 1b *Average Bilateral Imports* is expected to be negatively correlated to cultural distance of *Economic Governance and the Role of the State*. This hypothesis is rejected. Rather, a positive relation between cultural distance and bilateral trade is found. Both visual inspection (Figures 10 and 10.1) and the pairwise correlation (Table 5) indicated the opposite; a negative relation between the two variables. *Real GDP per Capita Difference* also goes against expectations; its negative coefficient indicates countries with greater differences in levels of wealth have more similar attitudes. However, including this variable does not bring about a strong shift in *Average Bilateral Trade*.

We can look to other variables for an explanation. Both *Joint EU Membership* and *Average EU Funds* are associated with declining cultural distance. Adding them into the model increases the negative coefficient of trade. These variables increase in value over time like *Average Bilateral Imports* (Appendix 8). The role of the EU may thus be what explains convergence instead of trade. The interaction between *Geographic Distance* and *Average Bilateral Trade* shows that trade conducted with countries further away produces a stronger positive correlation to cultural distance. However, this only becomes clearly visible in the model when interactions with dummies are included.

Trade between countries with a communist history and those without provides an exception to the positive coefficient found. The coefficient of -0.203 in model (10) must be carefully interpreted because it is in comparison to the sample as a whole (UCLA, 2021). It must be added to the value of 0.136 for general trade, yielding a coefficient of -0.067. Being two standard deviations removed from the mean of *Average Bilateral Imports* for countries included in this dummy results in reduced cultural distance of 0.302 points. This result indicates trade with countries with a communist history has different implications for cultural distance and aligns with the convergence seen in Figure 3.

The addition of Year dummies does not alter the model strongly and the observed correlations of trade indicators strengthen somewhat. Significant increases in the intercept are observed in 2006, 2008, 2014 and 2016. A significantly lower intercept is found for 2004. All significant correlations concerning this cultural value hold when controls for possible multicollinearity are carried out (Appendices 13 and 16).

Several examples can be given for an indication of the strength of the observed coefficients. *Average Bilateral Imports* has a mean value of 1.26. In the full model (10) the correlation of 0.136 indicates the mean value is associated with an increase is cultural distance of around 0.171 points. This would be a fairly large shift compared to the value of the constant of 0.9. For a dyad with the mean amount of trade (1.26) and the mean distance between countries (1359.127) cultural distance is 0.137 points greater.

Table 8: Cultural distance *Economic Governance and the Role of the State – Cultural trade*

Economic Governance and the Role of the State	*Average … Imports*	*Interaction Communist-Capitalist*	*Interaction Catholic-Protestant*	*Interaction Catholic-Orthodox*	*Interaction Protestant-Orthodox*
Average Cultural Imports	Insignificant	Insignificant Change	Insignificant Change	Insignificant Change	Insignificant Change
Average Printed Imports	Insignificant	Convergence	Insignificant Change	Insignificant Change	Insignificant Change

Significant (shifts towards) divergence marked RED, significant (shifts towards) convergence marked GREEN

Next, the model is tested with trade in *Average Cultural Imports* and *Average Printed Imports*. Neither are significant in any case. *Average Printed Imports* are correlated with a decrease in cultural distance between countries with the *Communist-Capitalist* dummy in models (15) and (17). The mean value of printed imports for *Communist-Capitalist* dyads is associated a reduction in cultural distance of 0.007. An increase of two standard deviations of the amount of trade yields a reduction in distance of 0.070. These shifts are not very large, but must be placed in perspective with the small amount of trade in printed goods. Trade, both in the general sense and in printed goods between countries in the *Communist-Capitalist* dummy is thus associated with reduced cultural distance. Considering the very different past approaches to government and governance in these countries this is an interesting result.

The coefficient sizes associated with printed imports can be notably high. For example: the coefficient of *Average Printed Imports* interacted with the *Communist-Capitalist* dummy is -13.755. This could indicate the relation between some trade indicators and cultural distance is non-linear. *Average Cultural Imports* are not associated with cultural distance. Significant correlations such as those found in model (16) disappear when the control for the effect of removing trade barriers is applied (Appendix 15).

5.3 Cultural Distance – Nationalism and Xenophobia

Table 9: Cultural distance *Nationalism and Xenophobia – Conventional trade*

Dependent Variable: Nationalism and Xenophobia	(18) Basic	(19) GDP difference added	(20) EU membership added	(21) EU Funds added	(22) Distance interaction added	(23) History interactions added	(24) Year Dummies added	(24.1) **Average Value Nationalism and Xenophobia**
Average Bilateral Imports	0.149***	0.149***	0.092***	0.092***	0.074**	-0.174***	-0.178***	-0.205***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.022)	(0.000)	(0.000)	(0.000)
Real GDP Per Capita Difference/**Average GDP**		0.019***	0.009***	0.009***	0.009***	0.009***	0.006**	0.026***
		(0.000)	(0.002)	(0.002)	(0.002)	(0.002)	(0.046)	(0.000)
Joint EU Membership			0.018***	0.018***	0.018***	0.017***	-0.023*	-0.0009
			(0.000)	(0.000)	(0.000)	(0.000)	(0.054)	(0.902)
Average EU Funds				0.000	0.000	-0.004	0.048***	-0.037***
				(0.999)	(0.991)	(0.780)	(0.010)	(0.001)
Trade*Distance					0.000	0.000	-0.000	0.0001***
					(0.456)	(0.402)	(0.847)	(0.000)
Communist-Capitalist Trade						0.327***	0.320***	-0.036
						(0.000)	(0.000)	(0.157)
Catholic-Protestant Trade						0.159***	0.169***	0.091***
						(0.000)	(0.000)	(0.001)
Catholic-Orthodox Trade						-0.320*	-0.252	-0.578***
						(0.068)	(0.143)	(0.000)
Protestant-Orthodox Trade						-0.415**	-0.340	-0.142
						(0.050)	(0.103)	(0.278)
2002 Dummy							0	0
							(.)	(.)
2004 Dummy							0.022	-0.0800***
							(0.476)	(0.000)
2006 Dummy							0.202***	-0.039
							(0.000)	(0.204)
2008 Dummy							0.136*	0.056***
							(0.055)	(0.219)
2010 Dummy							0.225**	0.012
							(0.016)	(0.834)
2012 Dummy							0.322***	0.093
							(0.006)	(0.211)
2014 Dummy							0.272*	0.045
							(0.054)	(0.610)
2016 Dummy							0.601***	0.027
							(0.000)	(0.793)
2018 Dummy							0.620***	0.116
							(0.001)	(0.318)
Constant	0.532***	0.248***	0.227***	0.227***	0.217***	0.303***	0.653***	3.733***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	3442	3442	3442	3442	3442	3442	3442	3442
R^2 Within	0.0178	0.0325	0.0844	0.0844	0.0845	0.1165	0.1546	0.1654
R^2 Between	0.0145	0.0041	0.0353	0.0353	0.0333	0.0031	0.0092	0.1360
R^2 Overall	0.0051	0.0005	0.0139	0.0139	0.0128	0.0018	0.0426	0.1268

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The models using cultural distance of *Nationalism and Xenophobia* present a different role of trade. Hypothesis 2b anticipated a lack of significant results. It cannot be accepted because significant results are consistently found. *Average Bilateral Imports* initially has a positive sign, but this is notably the case for all controls added though model (22). This is expected for *Real GDP per Capita Difference*, for which it holds as further controls are added. Adding the interactions with dummies results in *Average Bilateral Trade* becoming significantly negative. The interactions with the *Communist-Capitalist* and *Catholic-Orthodox* dummies appear to absorb the positive coefficient. This holds when a control is

carried out for multicollinearity (Appendix 13 – Table A). In that control for multicollinearity the two dummies including Orthodox countries attain significantly negative effects. Bulgaria, one of only three Orthodox countries, was communist. The overlap this creates with the *Communist-Capitalist* dummy may explain the results seen in Model (24). The relation between trade and cultural distance of *Nationalism and Xenophobia* appears highly dependent on the type of countries involved.

This aligns with the observed divergence in Figure 4: formerly communist countries diverge in a particularly strong fashion from capitalist countries in that graph. The interaction with the *Communist-Capitalist* dummy has a coefficient of 0.320 in Model (24). This coefficient is in relation to the general sample coefficient of -0.178, so it would be enough to offset the reduction in cultural distance found. If a pair of countries with this dummy is two standard deviations (1.715) to the right of the mean value for trade (1.081) their cultural distance increases by 0.641 points. Note that this example merely gives an indication of the way the interactions with dummies function and broadly behave; the exact coefficient sizes vary when multicollinearity controls are carried out (Appendix 13 – Table A).

The main coefficient of *Average Bilateral Imports* in the full model (24) is -0.178. A pair of countries two positive standard deviations (1.83) removed from the mean (1.26) therefore have cultural distance lowered by 0.876 points. Model (24.1) is specifically constructed to test the direction of convergence. It uses the average cultural value of the two countries in a dyad as its dependent variable. The independent variable for per capita GDP is adjusted to an average as well. The negative sign of the coefficient for *Average Bilateral Imports* suggests that increased bilateral trade is associated with a lower average value on *Nationalism and Xenophobia*. Convergence in relation to trade thus appears to be towards generally lower values on this measure. This result is robust to the control for multicollinearity (Appendix 13 – Table D).

Joint EU Membership is associated with an increase in distance until time dummies are included. Since this variable measures the time spent in the EU together it is fully correlated with time. Taking time dummies into account is thus crucial. *Average EU Funds* becomes positive and significant when time dummies are included, indicating that the cultural distance between pairs of countries that receive

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more EU funding increases. The time dummies themselves indicate a significant increase in cultural distance on *Nationalism and Xenophobia* over time, which can also be seen in Figures 4.1, 8 and 10.

Table 10: Cultural distance *Nationalism and Xenophobia – Cultural trade*

Nationalism and Xenophobia	Average ... Imports	Interaction Communist-Capitalist	Interaction Catholic-Protestant	Interaction Catholic-Orthodox	Interaction Protestant-Orthodox
Average Cultural Imports	Divergence	Insignificant Change	Insignificant Change	Insignificant Change	Insignificant Change
Average Printed Imports	Divergence	Change to Convergence	Change to Convergence	Insignificant Change	Insignificant Change

Significant (shifts towards) divergence marked RED, significant (shifts towards) convergence marked GREEN

Cultural and printed goods yield different results. Both are consistently positively correlated with cultural distance. The size and significance of coefficients mostly increase as controls are added. No dummy interactions with *Average Cultural Imports* produce significant effects once the trade shock to cultural goods from EU entry and possible multicollinearity are controlled for (Appendix 16). The interactions between the *Communist-Capitalist* and *Catholic-Protestant* dummies and *Average Printed Imports* are associated with cultural convergence. The latter dummy is not significant when all dummies are included in the model, but is when the dummies are split to control for multicollinearity in Appendix 13 – Table C. There is much overlap between these groups, so it cannot be said whether it is the religious or communist histories that are more clearly tied to convergence.

The results from Appendix 13 – Table C can be employed to provide an example with high coefficient. When interacted with the *Communist-Capitalist* dummy the coefficient for *Average Printed Imports* is reduced by 55.454 in comparison to the full sample coefficient of 24.078. This results in the mean amount of trade in printed goods reducing cultural distance by 0.012 points. This shows that the large size of some of the coefficients found here does not produce unrealistic results.

A final note concerning *Nationalism and Xenophobia* is that adding *Average Bilateral Imports* does not give a significant result when added to the model for cultural goods. This raises the possibility that *Average Cultural Imports* 'dominates' *Average Bilateral Imports*. To test this proposition Appendix 14 provides a variant of model (24) with *Average Cultural Imports*, but neither trade indicator displays notable change.

5.4 Cultural Distance – Trade and Entrepreneurship

Table 11: Cultural distance *Trade and Entrepreneurship – Conventional trade*

Dependent Variable: Trade and Entrepreneurship	(33) Basic	(34) GDP difference added	(35) EU membership added	(36) EU Funds added	(37) Distance interaction added	(38) History interactions added	(39) Year Dummies added
Average Bilateral Imports	0.052***	0.052***	0.080***	0.080***	0.108***	0.102***	0.089***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.003)
Real GDP Per Capita Difference		0.000	0.005**	0.005**	0.005**	0.005**	0.004*
		(0.931)	(0.013)	(0.016)	(0.018)	(0.018)	(0.084)
Joint EU Membership			-0.009***	-0.009***	-0.009***	-0.009***	0.025***
			(0.000)	(0.000)	(0.000)	(0.000)	(0.004)
Average EU Funds				-0.003	-0.003	-0.003	0.038***
				(0.767)	(0.750)	(0.734)	(0.004)
Trade*Distance					-0.000	-0.000	-0.00009***
					(0.114)	(0.125)	(0.014)
Communist-Capitalist Trade						0.002	0.020
						(0.945)	(0.491)
Catholic-Protestant Trade						0.014	0.030
						(0.618)	(0.302)
Catholic-Orthodox Trade						0.072	0.088
						(0.562)	(0.474)
Protestant-Orthodox Trade						0.018	0.031
						(0.905)	(0.836)
2002 Dummy							0
							(.)
2004 Dummy							-0.125***
							(0.000)
2006 Dummy							-0.147***
							(0.000)
2008 Dummy							-0.330***
							(0.000)
2010 Dummy							0.391***
							(0.000)
2012 Dummy							-0.428***
							(0.000)
2014 Dummy							-0.457***
							(0.000)
2016 Dummy							-0.529***
							(0.000)
2018 Dummy							-0.545***
							(0.000)
Constant	0.834***	0.831***	0.842***	0.844***	0.860***	0.863***	0.728***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	3442	3442	3442	3442	3442	3442	3442
R^2 Within	0.0048	0.0048	0.0326	0.0326	0.0334	0.0336	0.0732
R^2 Between	0.0846	0.0809	0.0049	0.0053	0.0095	0.0057	0.0120
R^2 Overall	0.0684	0.0647	0.0000	0.0001	0.0009	0.0001	0.0103

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Hypothesis 3b anticipates a negative correlation between cultural distance for *Trade and Entrepreneurship* and trade. This can only be accepted under a specific condition. *Average Bilateral Imports* has a positive correlation with cultural distance in all models tested. In the full model (39) it has a coefficient of 0.089. The mean amount of bilateral trade is associated with 0.112 greater cultural distance. However, the interaction between *Geographic Distance* and *Average Bilateral Imports* is correlated with cultural convergence. It thus appears that entrepreneurial values, or in particular the interpersonal trust values used to construct this measure, converge in association with trade when the

gravity effect is controlled for. Countries with the mean physical distance between them (1359.127) and the mean amount of trade (1.26) have reduced cultural distance of 0.154 points. This result is robust to the multicollinearity controls reported in Appendix 13. Hypothesis 3b thus holds true under the condition that the distance across which trade is conducted is taken into account.

Including *Real GDP per Capita Difference* behaves as expected: it is associated with increased cultural distance. This is also true for the role of the EU as both *Joint EU Membership* and *Average EU Membership* have positive coefficients. Adding interactions with dummies yields no significant results. The light convergence of cultural values observed in the graphical inspections of this variable (e.g. Figures 9 & 10) thus is only explained by the time dummies added in model (39) and the interaction between trade and distance. This interaction only becomes significant when time dummies are included, which suggests temporary factors also need to be accounted for before the relation is clearly present.

Table 12: Cultural distance *Trade and Entrepreneurship – Cultural trade*

Trade and Entrepreneurship	*Average ... Imports*	*Interaction Communist-Capitalist*	*Interaction Catholic-Protestant*	*Interaction Catholic-Orthodox*	*Interaction Protestant-Orthodox*
Average Cultural Imports	Insignificant	Insignificant Change	Insignificant Change	Divergence	Insignificant Change
Average Printed Imports	Insignificant	Insignificant Change	Insignificant Change	Convergence	Divergence

Significant (shifts towards) divergence marked RED, significant (shifts towards) convergence marked GREEN

There are no clear correlations between trade in cultural goods and distance of *Trade and Entrepreneurship*. The dummies involving Orthodox countries are an exception, which produce diverging results when applied to *Average Printed Imports*. The *Catholic-Orthodox* dummy has a value of -240.857, whereas the dummy for *Protestant-Orthodox* pairs has a value of 599.337. To illustrate: cultural distance between a Protestant-Orthodox pair trading two standard deviations (0.0001) more than the mean (0.00005) in in printed goods are 0.149 points further removed from each other on cultural distance for *Trade and Entrepreneurship*. Increased cultural distance is found for *Average Cultural Imports* when the *Catholic-Orthodox* dummy is applied. These relations are robust to the EU-entry robustness check and the multicollinearity control (Appendix 16).

6. Discussion

The section below will address possible explanations for the results based on literature. In the discussion of the results it is important to stress that this paper does not look for causal effects, merely correlations are tested for. However, when discussing explanations of the results it is unavoidable that possible causal relations are touched upon. Limitations of this paper and suggestions for future research are also discussed so that future work can address the shortfalls of this paper, and the explanations it suggests for the observed results.

6.1 Cultural Values

It was expected that increased trade would be associated with cultural values that reflected approval of a larger role of the state on the measure *Economic Governance and the Role of the State*, although literature to base this assertion on was limited. In line with the findings of Alesina, Tabellini & Trebbi (2017) it is indeed found that preferences for greater state involvement have risen. But, like those authors, this paper cannot provide clear evidence for factors that can be tied to this development. A possible hint at an answer may be found in the time dummies of model (1), which display a clear increase in values in 2008, 2010 and 2012. It is possible that this corresponds to work such as that by Olivera (2014), who finds that the economic crises Europe faced in this timeframe increased preferences for income redistribution, which are included in *Economic Governance and the Role of the State.*

Higher amounts of trade are found to be associated with lower values on the measure *Nationalism and Xenophobia*. People in countries with *more* trade tend to have *less* open attitudes to outsiders. This was expected based on findings indicating that the disruptive effects that trade has on industries, such as by displacing local industries, causes increased voting for nationalist and xenophobic political parties (Colantone & Stanig, 2017; Dippel, Gold, Heblich, & Pinto, 2021). A limitation is the lack of more detailed trade data. More detailed data, for example linked to smaller spans of time, could identify sudden changes in trade flows. If such changes could be linked to the increase in nationalistic and xenophobic values the argument for *disruptive* trade effects could be strengthened. An example of such an approach is provided by Hays, Lim, & Spoon (2019). They break survey data down to the regional level to test the effects of local trade shocks and find that these strengthen xenophobic values.

No evidence is found to support that countries which trade more have higher values on *Trade and Entrepreneurship*. One possible explanation is that this is the result of a data issue. This paper measures trade using *Imports to GDP*. But higher entrepreneurial values have been found to have a positive effect on per capita GDP (Van Praag & Versloot, 2007), Table 2 of this paper depicts a strong pairwise correlation between this value and GDP per capita as well. This makes it possible that the use of a trade measure measured relative to GDP is not effective because the increased GDP per capita that can be expected in trading countries could keep the value of imports relative to GDP stable. A variable of trade accounting for this while remaining comparable across countries would be interesting to consider.

6.2 Cultural Distance

The relation between cultural distance and trade differs depending on the cultural distance indicator selected and the use of interactions. The tables shown in this section depict the results of the full models for each type of trade by cultural distance indicator as to provide an overview of key results.

Table 12: Key Results – Distance of *Economic Governance and the Role of the State*

Economic Governance and the Role of the State	*Average ... Imports*	*Interaction Geographic Distance*	*Interaction Communist-Capitalist*	*Interaction Catholic-Protestant*	*Interaction Catholic-Orthodox*	*Interaction Protestant-Orthodox*
Average Bilateral Imports	Divergence	Divergence	Change to Convergence	Insignificant Change	Insignificant Change	Insignificant Change
Average Cultural Imports	Insignificant	Not applied	Insignificant Change	Insignificant Change	Insignificant Change	Insignificant Change
Average Printed Imports	Insignificant	Not applied	Convergence	Insignificant Change	Insignificant Change	Insignificant Change

Significant (shifts towards) divergence marked RED, significant (shifts towards) convergence marked GREEN

The expected reduction in cultural distance of *Economic Governance and the Role of the State* in relation to increased bilateral trade does not materialise. Instead, divergence is found. The potential disruptive effects of trade were expected to result in an increased desire for state protection. This desire, if held across countries, would then result in convergence. Since we see divergence instead we can consider the possibility that the disruptive effects affect trading partners unequally. Countries with relatively higher benefits from a trade flow may desire less state protection than those who are affected by the disruption it can cause. The instance of convergence found may fit with this argument. As depicted in Figure 3 countries in the capitalist and Protestant categories have increased their value on

this measure, which fits Dippel, Gold, Heblich, & Pinto's (2021) study of value change in Germany in response to Eastern European imports. Formerly communist countries, located mostly in Eastern Europe, see their preferences for state intervention decline. Perhaps their benefits from trade with countries such as Germany result in them finding more state intervention unnecessary.

Cultural and printed goods do not have significant results in most cases. Printed goods are associated with convergence when using the *Communist-Capitalist* dyads; perhaps the exchange of ideas through media such as newspapers does result in more closely aligned views. This would be a relevant finding because it would indicate that countries with very different histories with respect to the role of the state could effectively exchange ideas on this topic. This would align with the argument by Akkermans, Harzing, & Van Witteloostuijn (2010) that engaging with material in a foreign language is can result in the adopting of values from foreign cultures. Alternatively, it is possible that these two groups converge culturally for other reasons and increase their trade in printed materials as a result.

Table 13: Key Results – Distance of *Nationalism and Xenophobia*

Nationalism and Xenophobia	*Average ... Imports*	*Interaction Geographic Distance*	*Interaction Communist-Capitalist*	*Interaction Catholic-Protestant*	*Interaction Catholic-Orthodox*	*Interaction Protestant-Orthodox*
Average Bilateral Imports	Convergence	Insignificant	Change to Divergence	Reduced Convergence	Increased Convergence	Increased Convergence
Average Cultural Imports	Divergence	Not applied	Insignificant Change	Insignificant Change	Insignificant Change	Insignificant Change
Average Printed Imports	Divergence	Not applied	Change to Convergence	Change to Convergence	Insignificant Change	Insignificant Change

Significant (shifts towards) divergence marked RED, significant (shifts towards) convergence marked GREEN

Increased trade is associated with convergence on *Nationalism and Xenophobia*, indicating more comparable attitudes as trade increases. Increased trade appears to be associated with convergence towards more nationalistic and xenophobic views. The aforementioned disruptive effects of trade could provide an explanation for this. This aligns with research that finds people exposed to import shocks increase their negative attitudes towards immigrants (Hays, Lim, & Spoon, 2019).

The divergence in values found between *Communist-Capitalist* pairs does not necessarily mean that either of these countries becomes less xenophobic or nationalist in response to trade. It is also possible that the response is stronger in one country in a dyad, increasing the absolute distance between them

even when their cultural values move in the same direction. However, capitalist countries do become less xenophobic and nationalist over time (Figure 4), which can also explain the divergence.

These results shift when cultural goods are considered. The exchange of both cultural and printed goods are associated with increases in cultural distance. This is an unexpected result as it was expected that trade cultural goods signifies some affinity for a foreign culture. A possible explanation lies in the direction of causality. Xenophobia has been proposed to result in more negative attitudes to foreign consumer products (Harun & Shah, 2013; Wanninayake & Chovancová, 2012). If the convergence towards less open values is indeed the result of increases in conventional trade, it is possible that people *react* to this by lowering their demand for cultural goods.

Intriguingly, trade in printed goods is associated with convergence for the interaction effects for *Communist-Capitalist* and *Catholic-Protestant* pairs. These two pairs also reduce their cultural convergence in relation to general trade or see it switch to divergence. If the countries in these dyads do not move towards more nationalism and xenophobia in relation to trade, their demand for foreign printed goods may not be negatively affected. More detailed data would also be of value here. By testing if movements in cultural distance or cultural values clearly precede movements in the trade in printed goods the explanation described above could be more thoroughly examined.

Table 14: Key Results – Distance of *Trade and Entrepreneurship*

Trade and Entrepreneurship	Average ... Imports	Interaction Geographic Distance	Interaction Communist-Capitalist	Interaction Catholic-Protestant	Interaction Catholic-Orthodox	Interaction Protestant-Orthodox
Average Bilateral Imports	Divergence	Convergence	Insignificant Change	Insignificant Change	Insignificant Change	Insignificant Change
Average Cultural Imports	Insignificant	Not applied	Insignificant Change	Insignificant Change	Divergence	Insignificant Change
Average Printed Imports	Insignificant	Not applied	Insignificant Change	Insignificant Change	Convergence	Divergence

Significant (shifts towards) divergence marked RED, significant (shifts towards) convergence marked GREEN

Absolute trade is associated with divergence on values for *Trade and Entrepreneurship,* but convergence is observed once trade flows are adjusted for the gravity effect. Trade conducted over a greater distance could either benefit from more similar values on *Trade and Entrepreneurship*, or cause values to become more similar. Cyrus (2015) argues in favour of the latter possibility in a study

employing values comparable to those used to construct *Trade and Entrepreneurship*. Cyrus employs simultaneous regressions and also controls for geographic distance to arrive at these results.

The divergence in relation to absolute trade can be explained by linking back to the work of Olivier, Thoenig, & Verdier (2008). They argue that international trade influences culture because countries specialise further in goods they have comparative advantages in, and their cultures change along with their changing economy. If certain levels of entrepreneurial values are associated with comparative advantages in specific goods, we might see more trade between countries with cultural differences because their gains from trade are stronger. This idea has some precedence; it has been found that entrepreneurship differs in line with the so called 'Varieties of Capitalism': categories of different national economic systems (Dilli, Elert, & Herrmann, 2018).

The difference between absolute trade and trade interacted with distance may be explained by considering the gravity model. Interacting trade with distance to account for the gravity effect places greater emphasis on trade conducted across greater distances. However, as the gravity model dictates, trade volumes decline as distance increases. The interaction term thus emphasises trade flows that are smaller in real terms. These smaller trade flows may not produce strong domestic pressures to specialise further, and would then not result in divergence.

Trade in cultural and printed goods behaves different from general trade. Significant effects are found when Orthodox countries are included in a dyad. It has been argued that Orthodox Christianity harbours sentiments against the capitalist and individualistic values often held in Protestant societes, and even that the 'non-orderly' way of life in Greece is a counterraction to Western thinking (Makrides, 2019). Such dynamics could explain why divergence is found in relation to cultural trade between Orthodox and Protestant countries. I have not been able to find an explanation for the difference in correlations between the interactions of trade with the *Catholic-Orthodox* and *Protestant-Orthodox* dummies.

6.3 Limitations

There are limitations to this research with respect to literature, data and the empirical design. The limitations to theory mostly concern the lack of comparable research. There are few established variables that explain cultural distance, with most concerning non-varying factors such as differences in the environment. As a result, there are few variables that can be applied in a model interested in changes in cultural distance over time. The control variables employed in this paper, although significant in most cases, could be expanded by future research so that results can be established in a more robust fashion. Admittedly, this is highly challenging. The results of this paper show the coefficients associated with trade vary depending on the context they are applied in, it can be assumed that this will be case for most determinants of cultural distance.

The ESS provides the most suitable culture data for this paper because it contains data over a relatively long period of time for many EU-member states. However, data are biannual and most countries are not included in all waves of the survey. As a result much possible change in culture in the EU is not necessarily captured by this survey. Furthermore, this paper is limited by the survey questions available from the ESS. The amount of questions relevant to the selected indicators of culture are limited in some cases; in the case of *Economic Governance and the Role of the State* only two questions were found to be suitable. It would be ideal if questions could be designed to explicitly capture the cultural values this paper finds relevant to the EU. While it would have been possible to take the reverse approach, namely to first consider available survey questions and study these in relation to trade, this would have hampered the ability of this paper to study values relevant to the EU.

From an empirical perspective, a limitation lies in the design of the dyadic data. Since these data take differences and averaged aggregates for country pairs, it sacrifices detail. The *direction* of trade flows, for example, is not accounted for in the empirical model. The same is true for the direction of cultural change, which is discerned based on graphical analysis in most cases. Being able to see whether the direction of trade flows has implications for the relation to cultural change and its direction could further improve our understanding of the underlying dynamics between culture and trade. However, the increased complexity of the associated design could then present a challenge.

6.4 Suggestions for Future Research

Future research could consider other determinants of changes in cultural distance over time to enhance our understanding of these developments. Furthermore, designing an empirical approach that places more emphasis on the direction of changes and flows in and between countries could be of value in creating a better understanding of the dynamics underlying trade and culture. For example, this could test whether inflows and outflows of trade have different impacts.

Another suggestion is for research to focus on establishing causality. This paper is limited to establishing correlations. Several explanations suggested based on literature in this paper require a better understanding of causal connections. For example, I suggest that trade may affect nationalistic and xenophobic values, which could then in turn affect the demand for cultural goods. While this explanation corresponds with the observed correlations, this paper cannot establish whether it is true because it does not establish causality. Similarly it would be interesting to test whether economic specialisation due to trade can explain the divergence in values on trade and entrepreneurship found. Because of the data limitations that exist approaches such as case studies or a focus on natural experiments may provide greater insight into causal effects.

The policy implications described below would benefit from a better understanding of causality. No definitive policy recommendations can be made without this understanding. Until then, the recommendations can only point to possible areas of interest for policymakers. Nonetheless, this paper contributes to our understanding of the relation between cultural values and trade by mapping out these relations for cultural values important to the EU. This can provide a starting point for future research and give a number of initial points of interest to policymakers.

6.5 Policy Implications

The results suggest trade-offs may exist between increasing trade and changing culture in a way that is beneficial to the EU. Increases in trade are associated with diverging attitudes towards the role of the state, which would not be beneficial to EU integration and decision-making. Convergence towards increased nationalism and xenophobia is found in relation to trade. Again, this would not be a positive

development for any vision of a more unified Europe. Finally, entrepreneurial values diverge in relation to absolute trade, but it is not clear what this entails for the economic development of the EU; it may be a by-product of economic specialisation which is associated with economic gains.

Policymakers should be aware of the trade-offs; it should not simply be assumed that increased intra-EU trade will aid the Union's effort to integrate further if people's values diverge or become less open to outsiders as a result. Although a causal connection is not established in this paper, disruptive effects from trade appear to be a plausible explanation for some of the observed results which go against what the EU might desire. Developing policies to offset these disruptive effects, for example by supporting regions that suffer adverse effects from trade shocks, could be a worthwhile endeavour.

It bears mentioning that the development of cultural values seen in this paper independently from trade is not a cause for concern. On average Europe has become more open to state involvement, more open towards migrants, and more entrepreneurial. Values on state involvement and entrepreneurship have even converged. Even if trade counteracts these processes, other developments may outweigh it. Many existing EU policies such as the structure and cohesion funds are aimed at improving the lives of people in the Union's less wealthy regions, and may already play a part in offsetting undesirable effects from trade.

A final, important lesson for policymakers is that culture is not a singular, unified concept. The results of this paper show that different aspects of culture relevant to the Union behave in very different fashion. Furthermore, their development is in many cases appears to be related to deeper factors such as religion and the legacy of communism. As is often the case in designing policy, it is recommendable to be keenly aware of differences that exist across societies so that policy can be tailored to their individual needs where possible.

7. Conclusion

The relation between trade and culture in the EU is complex, but important to understand. The research conducted by this paper does not provide a singular answer to its research question:

'Is bilateral trade associated with convergence of cultural values in the European Union?'

Instead, it finds that trade is associated with divergence on two of the values studied; those concerning the role of the state and trade and entrepreneurship. Convergence is only found towards more nationalistic and xenophobic values in relation to trade. Trade is not associated with shifts towards values beneficial to the EU. A trade-off between the two appears more likely. This paper does not establish causality. It cannot state whether it is trade that changes culture, or culture that changes trade.

I provide possible explanations for the observed results based on literature. I suggest that the disruptive effects of trade may result in divergence in attitudes towards the role of the state and entrepreneurial values, and greater nationalism and xenophobia. It is also possible that cultural shifts change the demand for foreign goods, this is a particularly fitting explanation for some of the observed relations between culture and trade in cultural goods. Furthermore, the type of countries involved in trade as defined by the historical legacies of both religion and communism must be kept in mind. Clear differences exist in the relation between trade and culture when countries with different histories interact with each other. Chances may exist to use trade to exchange culture and ideas to unify countries divided by history, but trade could pose a challenge if its disruptions creates new rifts between countries.

Understanding these dynamics is critical. The euro crisis showed that cultural divides can contribute to major challenges to the European Union. The recovery from the COVID-19 pandemic will benefit if EU countries understand the underlying dynamics between their differences and work to reduce them. Understanding what risks and challenges trade poses in this respect will surely benefit this. Cleary, much research needs to be done to definitively establish or falsify the explanations provided in this paper so that the relation between trade and culture in the EU can be fully understood. Achieving this would aid policymakers in understanding trade-offs between trade and cultural integration that may exist, or enable them to harness trade to bring countries together in an ever-closer Union.

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Appendices

Appendix 1: ESS participating countries by wave (European Social Survey, 2021)

Country	2002	2004	2006	2008	2010	2012	2014	2016	2018
Austria	x	x	x				x	x	x
Belgium	x	x	x	x	x	x	x	x	x
Bulgaria			x	x	x	x			x
Croatia				x	x				x
Cyprus			x	x	x	x			x
Czechia	x	x		x	x	x	x	x	x
Denmark	x	x	x	x	x	x	x		x
Estonia		x	x	x	x	x	x	x	x
Finland	x	x	x	x	x	x	x	x	x
France	x	x	x	x	x	x	x	x	x
Germany	x	x	x	x	x	x	x	x	x
Greece	x	x		x	x				
Hungary	x	x	x	x	x	x	x	x	x
Ireland	x	x	x	x	x	x	x	x	x
Italy	x					x		x	x
Lithuania					x	x	x	x	x
Luxembourg	x	x							
Netherlands	x	x	x	x	x	x	x	x	x
Poland	x	x	x	x	x	x	x	x	x
Portugal	x	x	x	x	x	x	x	x	x
Slovakia		x	x	x	x	x			x
Slovenia	x	x	x	x	x	x	x	x	x
Spain	x	x	x	x	x	x	x	x	x
Sweden	x	x	x	x	x	x	x	x	x
United Kingdom	x	x	x	x	x	x	x	x	x

Year of entry	Countries
01/01/1958	Belgium
	France
	Germany
	Italy
	Luxembourg
	Netherlands
01/01/1973	Denmark
	Ireland
	United Kingdom (left on 31 January 2020)
01/01/1981	Greece
01/01/1986	Portugal
	Spain
01/01/1995	Austria
	Finland
	Sweden
01/05/2004	Cyprus
	Czechia
	Estonia
	Hungary
	Latvia
	Lithuania
	Malta
	Poland
	Slovakia
	Slovenia
01/01/2007	Bulgaria
	Romania
01/07/2013	Croatia

Country	Religious past	Market system past
Austria	Catholic	
Belgium	Catholic	
Bulgaria	Orthodox	Communist
Croatia	Catholic	Communist
Cyprus	Orthodox	
Czechia	Catholic	Communist
Denmark	Protestant	
Estonia	Protestant	Communist
Finland	Protestant	
France	Catholic	
Germany	Protestant	
Greece	Orthodox	
Hungary	Catholic	Communist
Ireland	Catholic	
Italy	Catholic	
Lithuania	Catholic	Communist
Luxembourg	Catholic	
Netherlands	Protestant	
Poland	Catholic	Communist
Portugal	Catholic	
Slovakia	Catholic	Communist
Slovenia	Catholic	Communist
Spain	Catholic	
Sweden	Protestant	
United Kingdom	Protestant	

The ESS data consists of responses from interviews held with individuals. Questions relating to each of the sets of values described in the literature section are selected based on their theoretical connection to the value described. The selected questions can be found below, their suitability to the cultural values of interest is described below. Values indicating a respondent had not answered a particular question were dropped. Answer values were weighted using the ESS-provided post-stratification weight, which adjusts the weight attached to a respondent to make the sample representative of the population of a country. Answer values were aggregated to the national level by question and year.

The number of answer options in the ESS vary between 4 and 11 for the selected questions. To make the aggregated values directly comparable they were scaled on a scale of 1-10. Some indicators were inverted on the 1-10 scale so that the 'positive' answer to a question results in a *higher* value. This means that for governance data a higher score indicates increased preference for redistribution and a strong government. For the values on nationalism and xenophobia a higher value indicates more openness to immigrants, and an outlook that indicates these people benefit society in some capacity. For the values on entrepreneurship higher values indicate greater trust and faith in people. Next, the Cronbach's alpha values for the aggregated value indicators were computed to ensure the chosen ESS questions measure the same concept, these are mentioned below. Cronbach's alpha values for each set of values if a specific question is removed, pairwise correlations for the initially selected variables, and questions which were rejected based on testing can be found below.

Cultural Value	Cronbach's alpha	Question Number
1. Nationalism and Xenophobia	*0.9361*	*#*
Now, using this card, to what extent do you think [country] should allow people of the same race or ethnic group as most [country] people to come and live here? ESS9: Now, using this card, to what extent do you think [country] should allow people of the same race or ethnic group as most [country]'s people to come and live here?	Cronbach's alpha *without* including this variable: 0.9342	**ESS1:** D4 **ESS2, ESS3, ESS4, ESS5:** B35 **ESS6, ESS7:** B29 **ESS8, ESS9:** B38
How about people of a different race or ethnic group from most [country] people?	Cronbach's alpha *without* including this variable: 0.9127	**ESS1:** D5 **ESS2, ESS3, ESS4, ESS5:** B36 **ESS6, ESS7:** B30 **ESS8, ESS9:** B39

How about people from the poorer countries outside Europe?	Cronbach's alpha *without* including this variable: 0.9186	**ESS1:** D9 **ESS2, ESS3, ESS4, ESS5:** B37 **ESS6, ESS7:** B31 **ESS8, ESS9:** B40
Would you say it is generally bad or good for [country]'s economy that people come to live here from other countries?	Cronbach's alpha *without* including this variable: 0.9302	**ESS1:** D27 **ESS2, ESS3, ESS4, ESS5:** B38 **ESS6, ESS7:** B32 **ESS8, ESS9:** B41
And, using this card, would you say that [country]'s cultural life is generally undermined or enriched by people coming to live here from other countries?	Cronbach's alpha *without* including this variable: 0.9283	**ESS1:** D28 **ESS2, ESS3, ESS4, ESS5:** B39 **ESS6, ESS7:** B33 **ESS8, ESS9:** B42
Is [country] made a worse or a better place to live by people coming to live here from other countries?	Cronbach's alpha *without* including this variable: 0.9193	**ESS1:** D29 **ESS2, ESS3, ESS4, ESS5:** B40 **ESS6, ESS7:** B34 **ESS8, ESS9:** B43

2. Trade and Entrepreneurship	*0.967*	#
Using this card, generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please tell me on a score of 0 to 10, where 0 means you can't be too careful and 10 means that most people can be trusted.	Cronbach's alpha *without* including this variable: 0.9441	**ESS1, ESS2, ESS3, ESS4, ESS5:** A8 **ESS6, ESS7:** A3 **ESS8, ESS9:** A4
Using this card, 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?	Cronbach's alpha *without* including this variable: 0.9475	**ESS1, ESS2, ESS3, ESS4, ESS5:** A9 **ESS6, ESS7:** A4 **ESS8, ESS9:** A5
Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?	Cronbach's alpha *without* including this variable: 0.0.9615	**ESS1, ESS2, ESS3, ESS4, ESS5:** A10 **ESS6, ESS7:** A5 **ESS8, ESS9:** A6
Rejected Questions	*Reason for Rejection*	#
Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. Thinking up new ideas and being creative is important to her/him. She/he likes to do things in her/his own original way.	No clear correlation to other variables,	**ESS1, ESS3, ESS4:** Ga-u **ESS2, ESS5, ESS6, ESS7, ESS8, ESS9:** Ha-u
Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. Being very successful is important to her/him. She/he hopes people will recognise her/his achievements.	Strongly negatively correlated despite being expected to move in the same direction.	**ESS1, ESS3, ESS4:** Ga-u **ESS2, ESS5, ESS6, ESS7, ESS8, ESS9:** Ha-u

3. Economic Governance and the Role of the State	*0.7718*	#
Using this card, please say to what extent you agree or disagree with each of the following statements. The government should take measures to reduce differences in income levels ESS9: Using this card, please say to what extent you agree or disagree with each of the following statements. The government should take measures to reduce differences in income levels.	Cronbach's alpha *without* including this variable: 0	**ESS1:** B43-50 **ESS2, ESS3, ESS4, ESS5:** B30-33 **ESS6, ESS7:** B26-27 **ESS8, ESS9:** B33-36

Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him that the government ensures her/his safety against all threats. She/he wants the state to be strong so it can defend its citizens.	Cronbach's alpha *without* including this variable: 0	**ESS1, ESS3, ESS4:** Ga-u **ESS2, ESS5, ESS6, ESS7, ESS8, ESS9:** Ha-u
Rejected Questions	*Reason for Rejection*	#
Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly... ...the European Parliament?	Weak and inconsistent correlations, weak theoretical link	**ESS1:** B7-12 **ESS2, ESS3, ESS4, ESS5:** B4-10 **ESS6, ESS7:** B2-8 **ESS8, ESS9:** B6-12
Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. She/he thinks it is important that every person in the world should be treated equally. She/he believes everyone should have equal opportunities in life.	Weak linkages to other variables, lack of connection to a role of the government	**ESS1, ESS3, ESS4:** Ga-u **ESS2, ESS5, ESS6, ESS7, ESS8, ESS9:** Ha-u
Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. She/he believes that people should do what they're told. She/he thinks people should follow rules at all times, even when no-one is watching.	Weak linkages to other variables, appears inconsistent with aimed linkage to 'German'-rule following	**ESS1, ESS3, ESS4:** Ga-u **ESS2, ESS5, ESS6, ESS7, ESS8, ESS9:** Ha-u
Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him to live in secure surroundings. She/he avoids anything that might endanger her/his safety.	Imbalances remaining questions because a question concerning safety is already included	**ESS1, ESS3, ESS4:** Ga-u **ESS2, ESS5, ESS6, ESS7, ESS8, ESS9:** Ha-u

Pairwise Correlations Nationalism and Xenophobia Questions						
Question	*Same Ethnicity*	*Different Ethnicity*	*Outside EU*	*Good for Economy*	*Culture Enriched*	*Country Better*
Different Ethnicity	*0.813*	*1.000*				
Outside EU	*0.731*	*0.961*	*1.000*			
Good for Economy	*0.506*	*0.661*	*0.661*	*1.000*		
Culture Enriched	*0.528*	*0.679*	*0.666*	*0.781*	*1.000*	
Country Better	*0.643*	*0.747*	*0.7125*	*0.816*	*0.851*	*1.000*

Pairwise Correlations Trade and Entrepreneurship Questions				
Question	*Trust in People*	*Faith in People*	*Helpful-ness*	*New Ideas*	*Success*
Faith in People	*0.929*	*1.000*			
Helpfulness	*0.901*	*0.895*	*1.000*		
New Ideas	*0.087*	*0.045*	*0.1568*	*1.000*	
Success	*-0.514*	*-0.612*	*-0.501*	*0.040*	*1.000*

Pairwise Correlations Economic Governance and Role of the State Questions						
Question	*Trust EU Parl.*	*Gov Reduce Ineq.*	*Impor-tance Equal*	*Impor-tance safety*	*Importance Rules*	*Strong Government*
Gov Reduce Ineq.	*-0.087*	*1.000*				
Importance Equal.	*-0.107*	*0.299*	*1.000*			
Importance Safety	*-0.098*	*0.612*	*0.323*	*1.000*		
Importance Rules	*0.0895*	*0.026*	*0.148*	*0.382*	*1.000*	
Strong Government	*0.143*	*0.635*	*0.366*	*0.927*	*0.387*	*1.000*
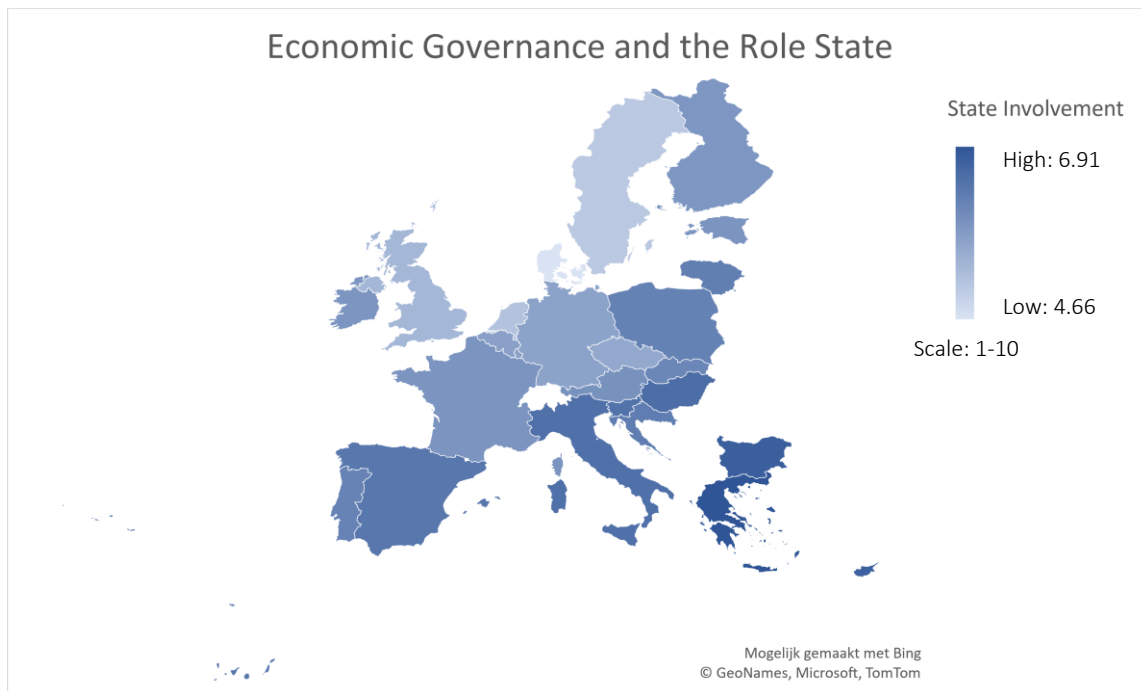
Figure 3.2: Averaged country values for Economic Governance and the Role of the State
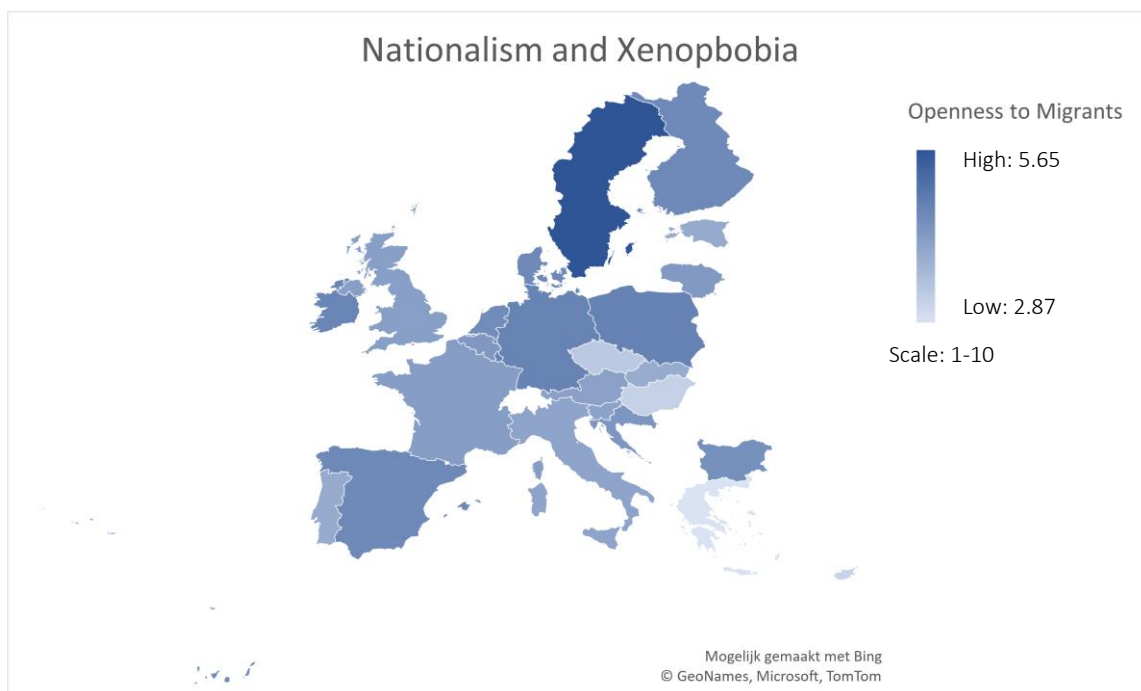
Figure 4.2: Averaged country values for Nationalism and Xenophobia
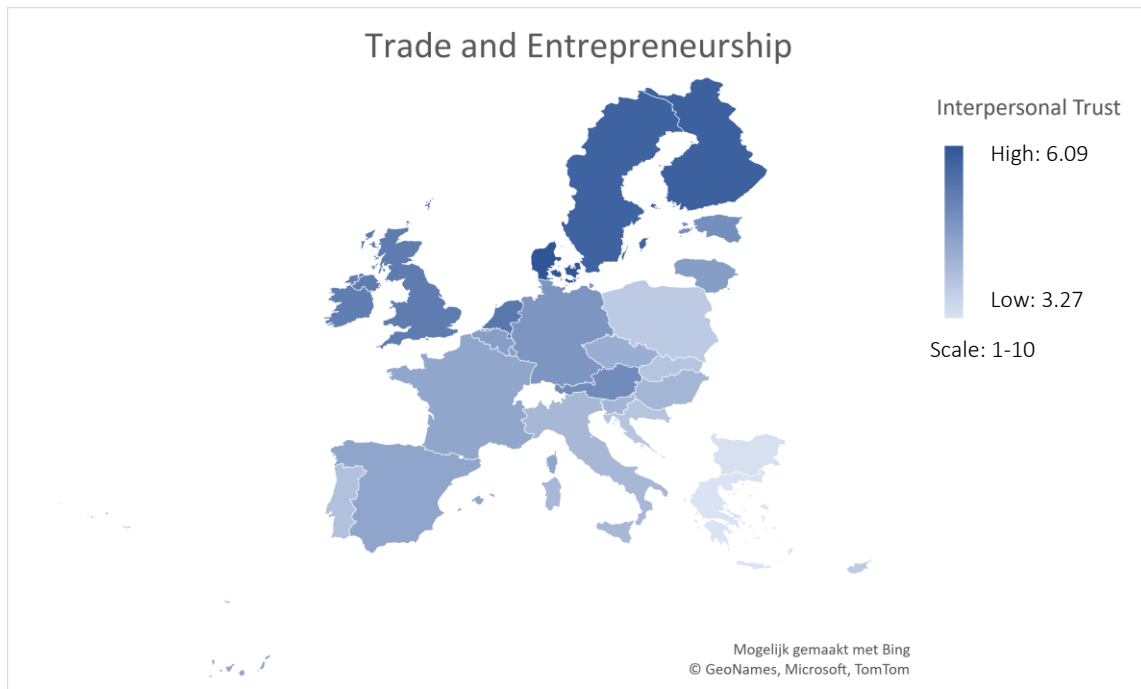
Figure 5.2: Averaged country values for Trade and Entrepreneurship

Appendix 6: Section 3.1 - Histograms and scatterplots over time by variable

Nationalism and Xenophobia
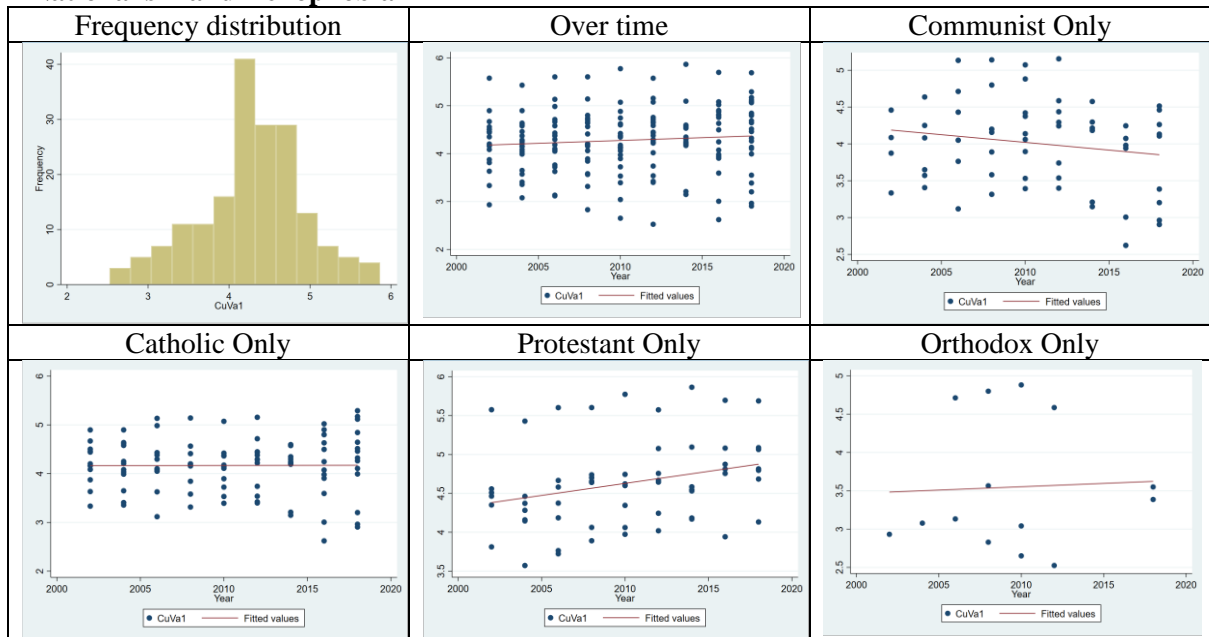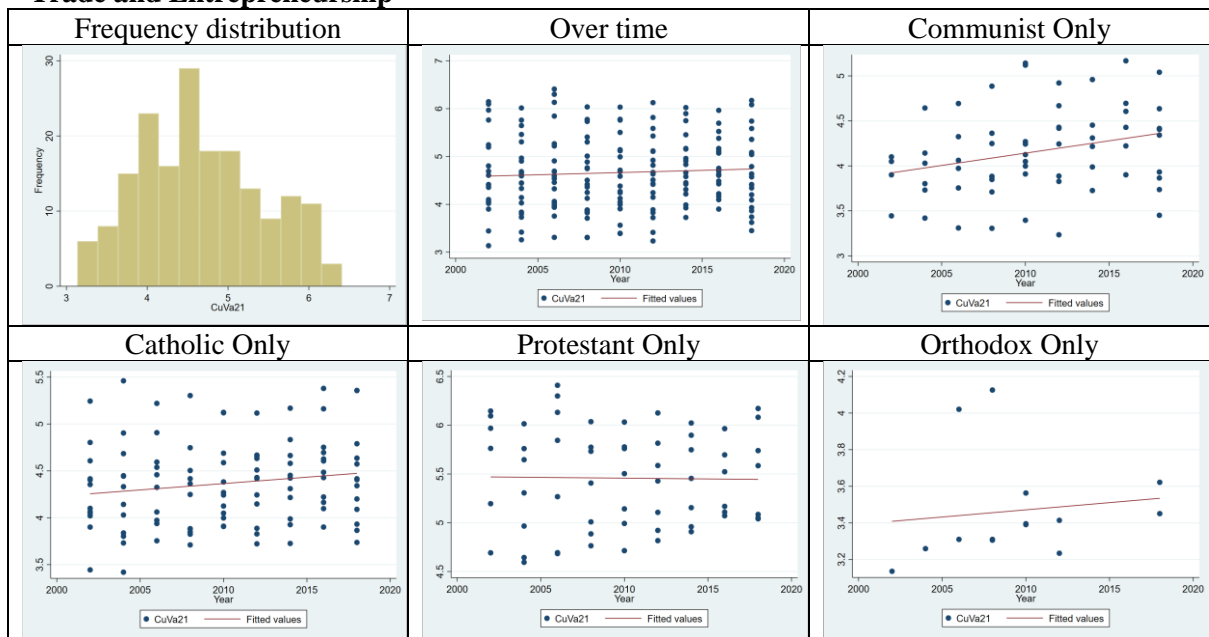
Frequency distribution	Over time	Communist Only
Catholic Only	Protestant Only	Orthodox Only

Trade and Entrepreneurship

Frequency distribution	Over time	Communist Only
Catholic Only	Protestant Only	Orthodox Only

Economic Governance and the Role of the State

Frequency distribution	Over time	Communist Only

Catholic Only	Protestant Only	Orthodox Only

Economic Interactions and the EU

Imports % of GDP	EU Funds % GDP	Years of EU membership

Real per capita GDP
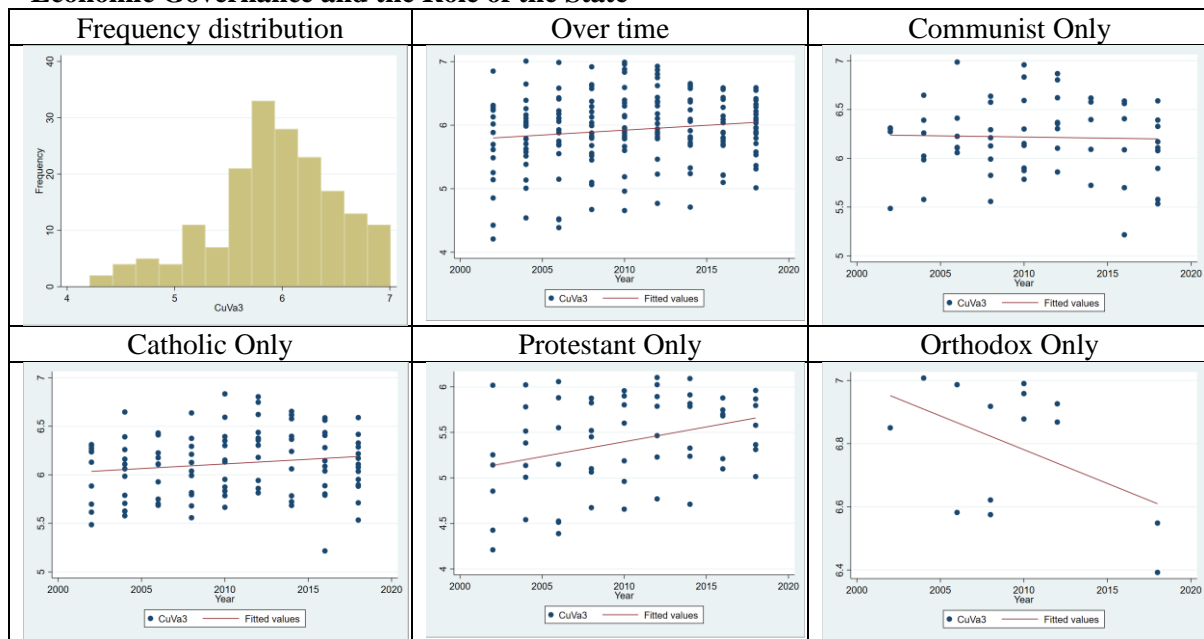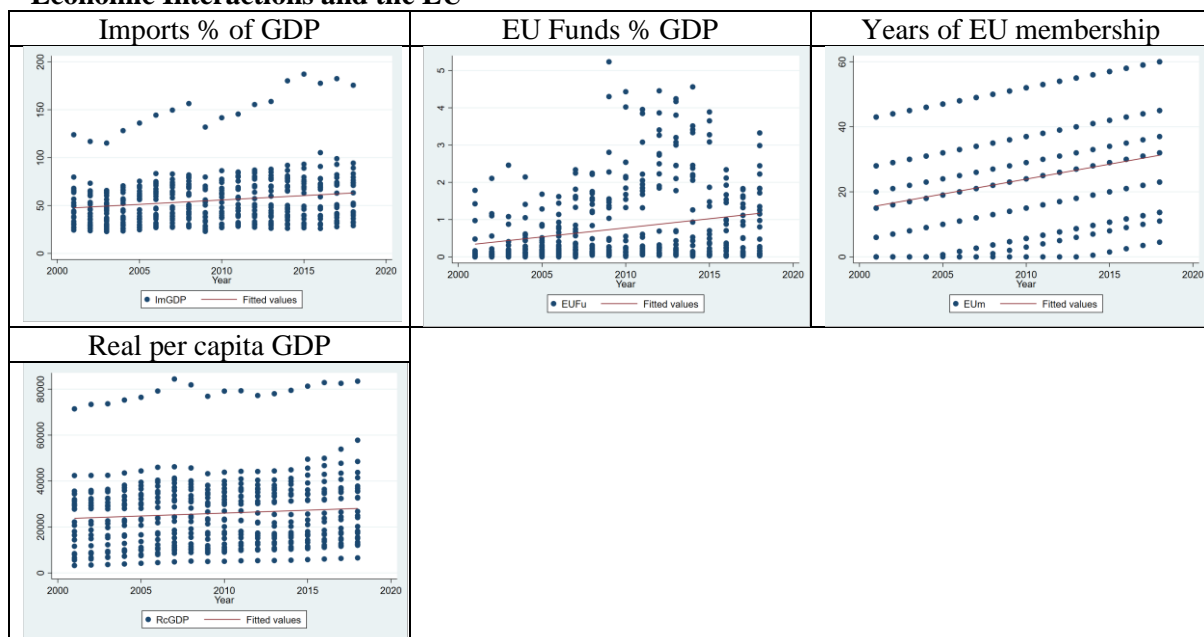
Appendix 7: EU Funds included in '*EU Funds to GDP*'

Fund	Meaning	Description
ERDF	European Regional Development Fund	'The ERDF aims to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions.' (European Comission, 2021b)
CF	Cohesion Fund	'The Cohesion Fund helps Member States whose GNI per inhabitant is less than 90% of the EU27 average in making investments in TEN-T transport networks and the environment.' (European Comission, 2021a)
EAFRD	European Agricultural Fund for Regional Development	'The common agricultural policy supports the vibrancy and economic viability of rural areas through funding and actions that support rural development.' (European Comission, 2021f)
ESF	European Social Fund	'Each year the ESF helps millions of Europeans improve their lives by learning new skills and finding better jobs.' (European Comission, 2021c)
FEAD	Fund for European Aid to the Most Deprived	'The Fund for European Aid to the Most Deprived (FEAD) supports EU countries' actions to provide food and/or basic material assistance to the most deprived.' (European Comission, 2021d)
EMFF	European Maritime and Fisheries Fund	'EMFF helps fishers to adopt sustainable fishing practices and coastal communities to diversify their economies, improving quality of life along European coasts.' (European Commission, 2021g)
YEI	Youth Employment Initiative	'The Youth Employment Initiative (YEI) is one of the main EU financial resources to support the implementation of Youth Guarantee schemes until 2023. The EU launched it in 2012 to provide support to young people living in regions where youth unemployment was higher than 25%.' (European Commission, 2021h)

Appendix 8: Section 3.2 - Histograms and scatterplots over time by variable

Dyadic Nationalism and Xenophobia

Frequency distribution	Over time	Communist-Capitalist
Catholic-Protestant	Catholic-Orthodox	Protestant-Orthodox
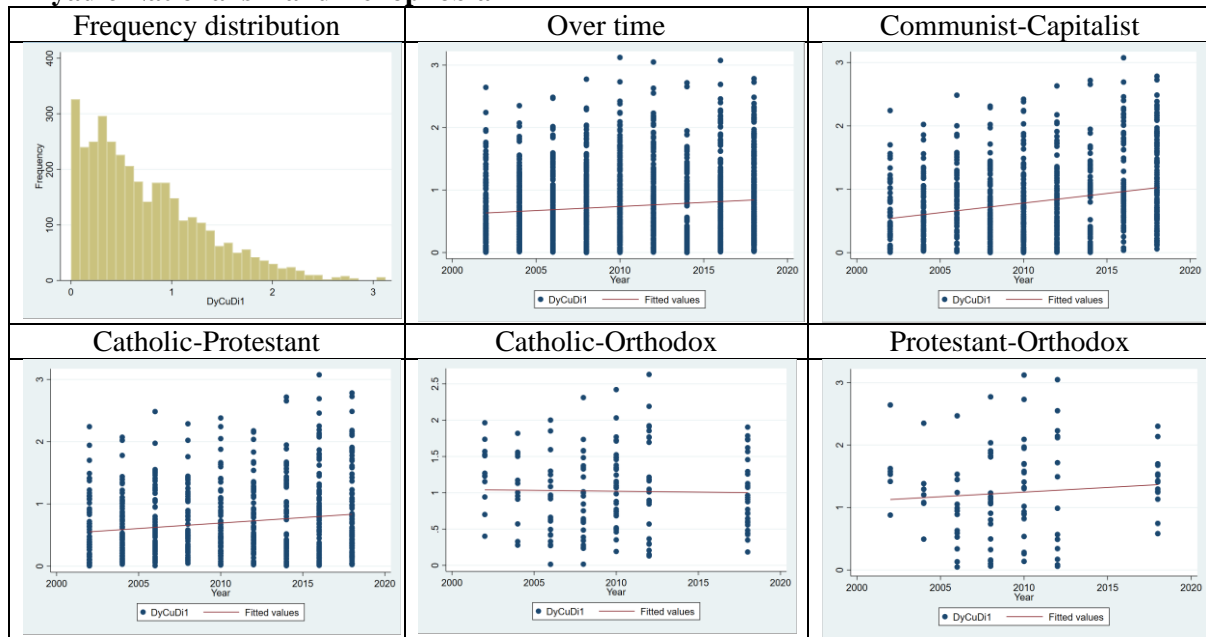
Dyadic Trade and Entrepreneurship

Frequency distribution	Over time	Communist-Capitalist
Catholic-Protestant	Catholic-Orthodox	Protestant-Orthodox
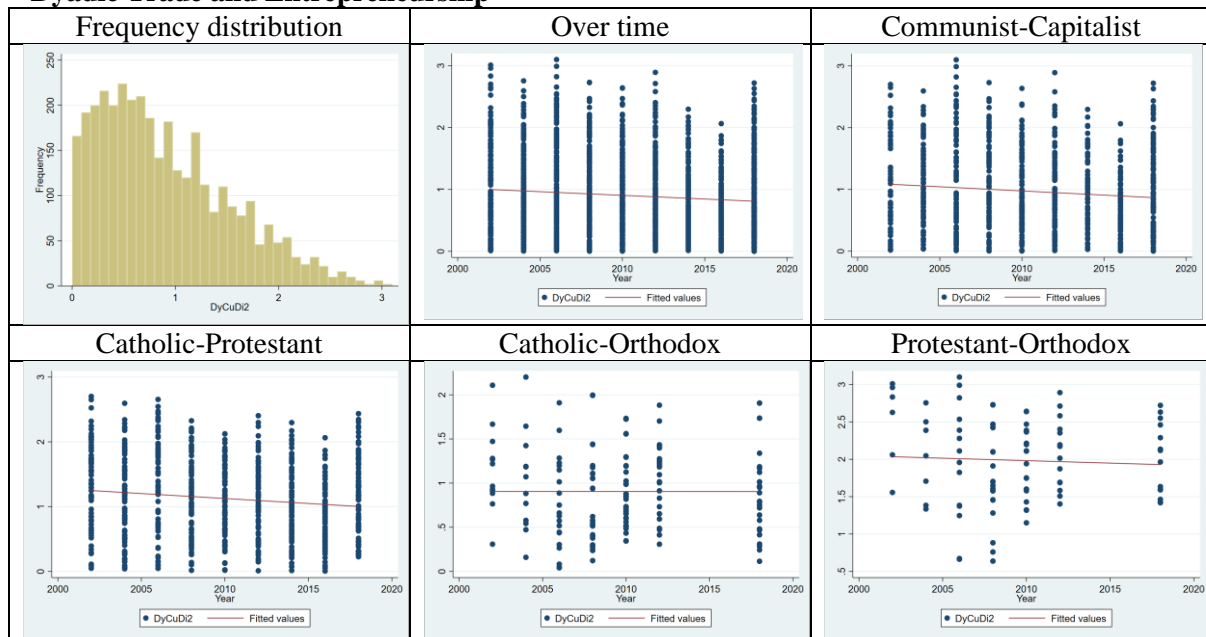
Dyadic Economic Governance and the Role of the State

Frequency distribution	Over time	Communist-Capitalist

Catholic-Protestant	Catholic-Orthodox	Protestant-Orthodox
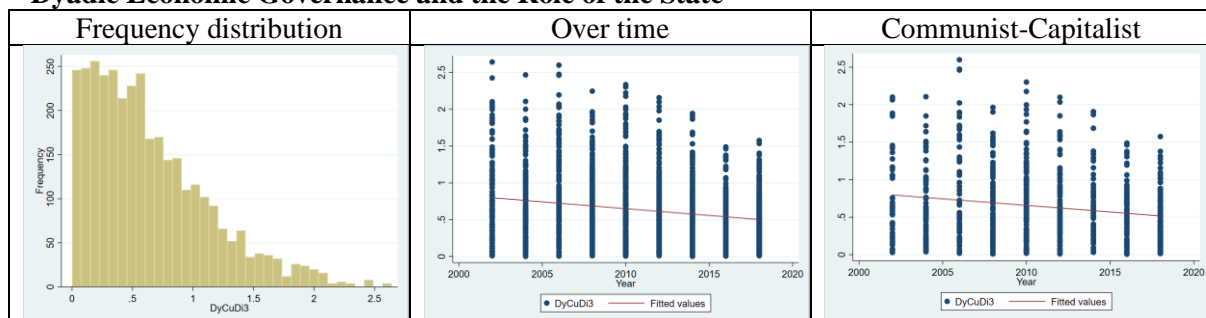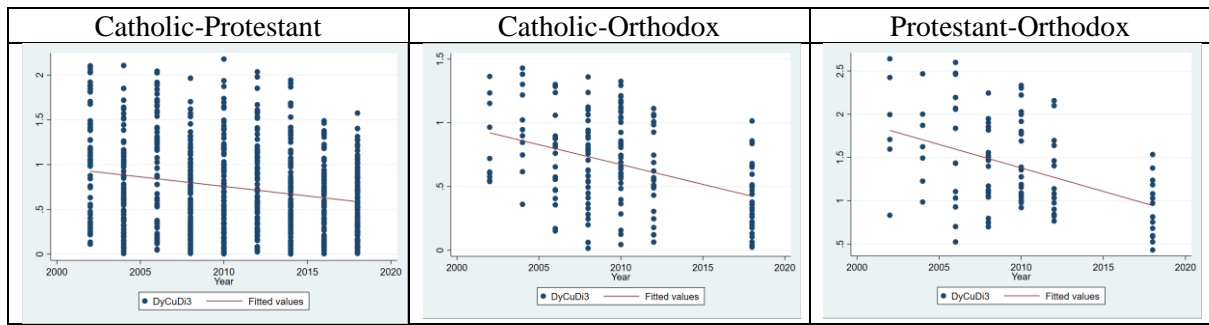
Dyadic Trade and EU Variables

Average Bilateral Imports	Average Cultural Imports	Average Printed Imports
Average EU Funds	Joint EU Membership	Real GDP per capita difference
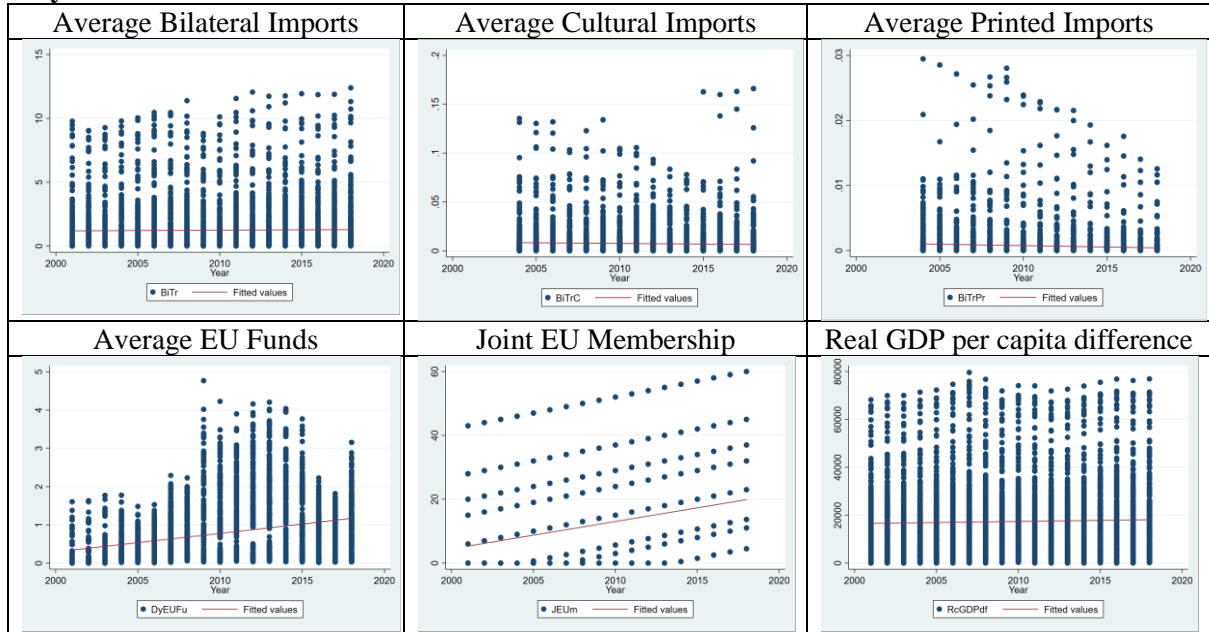
Appendix 9: Figure 10.1 – Bilateral Trade and Cultural Distance Orthodoxy adjustment

Cultural Distance and Bilateral Trade - Adjusted for Orthodox countries
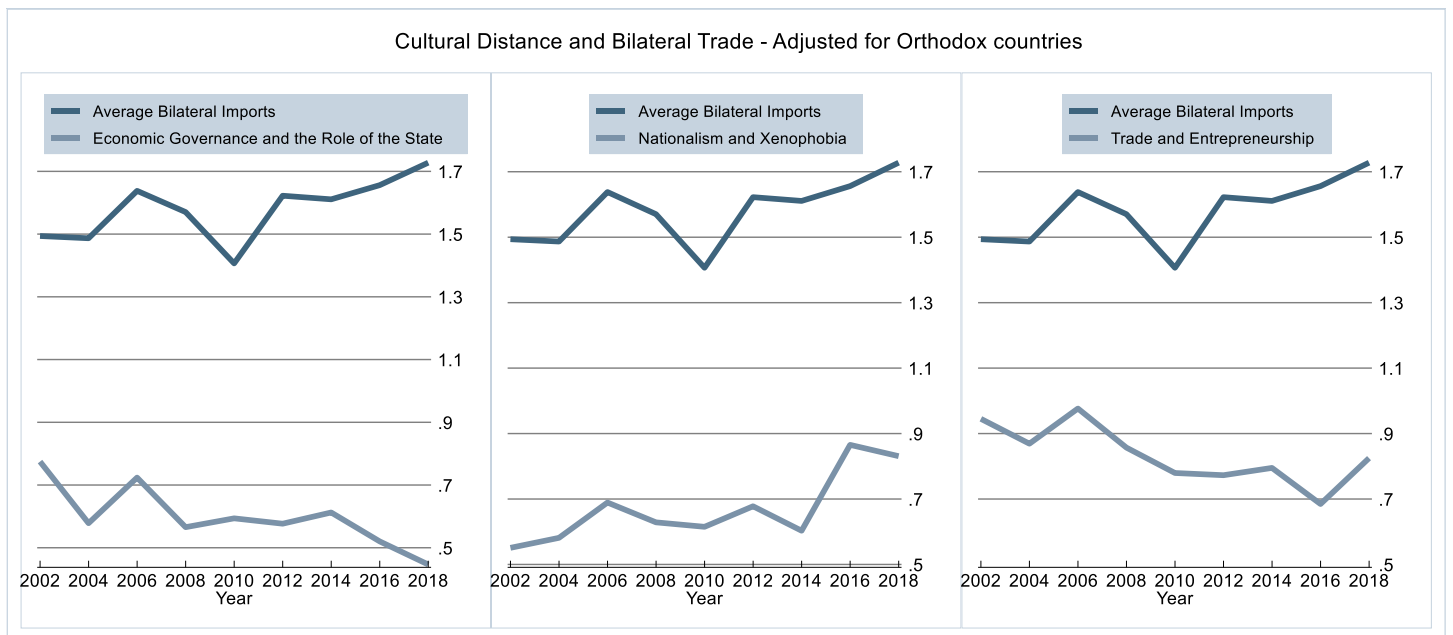
Figure 10.1: Average Cultural Distance and Average Bilateral Imports over time with Dyads consisting of an Orthodox and non-Orthodox country removed from the sample.

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Appendix 10: Goods included in '*Average Cultural Imports*'

Antiques; postage or revenue stamps; collections and collector's pieces
Works of art (paintings, engravings, sculptures, designs, etc.)
Craft (handmade fabrics and ornamental articles)
Articles of jewellery (of precious and semi-precious metals and stones)
Books (*Average Book Imports*)
Newspapers, journals and periodicals (*Average Printed Imports*)
Maps and hydrographical or similar charts
Plans and drawings for architectural or other similar purposes
Photographic plates and film, exposed and developed
Music in manuscript, gramophone records, recorded magnetic tapes and optical media (CDs); audio-visual and interactive media (films, videos and video games excl. video game consoles) (*Average Audio-visual Imports*)
Video games used with television receiver
Video game consoles (excl. operated by any means of payment)
Musical instruments; parts and accessories thereof

Appendix 11: Durbin-Wu-Hausman test results

Regression	Prob>chi2
Test 1: Cultural Values *Economic Governance and the Role of the State*	0.1143
Test 2: Cultural Values *Nationalism and Xenophobia*	0.4441
Test 3: Cultural Values *Trade and Entrepreneurship*	0.3442
Test 4: Cultural Distance *Economic Governance and the Role of the State – Average Bilateral Imports*	0.0000
Test 5: Cultural Distance *Economic Governance and the Role of the State – Average Cultural Imports*	0.0000
Test 6: Cultural Distance *Economic Governance and the Role of the State – Average Printed Imports*	0.0000
Test 7: Cultural Distance *Nationalism and Xenophobia – Average Bilateral Imports*	0.0000
Test 8: Cultural Distance *Nationalism and Xenophobia – Average Cultural Imports*	0.0000
Test 9: Cultural Distance *Nationalism and Xenophobia – Average Printed Imports*	0.0000
Test 10: Cultural Distance *Trade and Entrepreneurship – Average Bilateral Imports*	0.0000
Test 11: Cultural Distance *Trade and Entrepreneurship – Average Cultural Imports*	0.0000
Test 12: Cultural Distance *Trade and Entrepreneurship – Average Printed Imports*	0.0000

Note: all tests were conducted using the full models with the Stata option 'sigmamore' added to the Hausman-test syntax, this option is considered more suitable for the comparison of random and fixed effects regressions (Stata, 2021).

Appendix 12: Full regression tables

Table 7: Cultural distance *Economic Governance and the Role of the State – Conventional trade*

Dependent Variable: Economic Governance and the Role of the State	(4) Basic	(5) GDP difference added	(6) EU membership added	(7) EU Funds added	(8) Distance interaction added	(9) History interactions added	(10) Year Dummies added
Average Bilateral Imports	0.007 (0.630)	0.008 (0.605)	0.056*** (0.000)	0.059*** (0.000)	0.065*** (0.005)	0.112*** (0.000)	0.136*** (0.000)
Real GDP Per Capita Difference		-0.014*** (0.000)	-0.006*** (0.009)	-0.007*** (0.002)	-0.007*** (0.002)	-0.007*** (0.002)	-0.004* (0.065)
Joint EU Membership			-0.016*** (0.000)	-0.015*** (0.000)	-0.014*** (0.000)	-0.014*** (0.000)	-0.029*** (0.001)
Average EU Funds				-0.038*** (0.000)	-0.038*** (0.000)	-0.036*** (0.000)	-0.048*** (0.000)
Trade*Distance					-0.000 (0.737)	0.00006* (0.099)	0.00008** (0.031)
Communist-Capitalist Trade						-0.182*** (0.000)	-0.203*** (0.000)
Catholic-Protestant Trade						0.007 (0.801)	0.006 (0.844)
Catholic-Orthodox Trade						-0.187 (0.141)	-0.121 (0.328)
Protestant-Orthodox Trade						-0.142 (0.354)	-0.066 (0.658)
2002 Dummy							0 (.)
2004 Dummy							-0.090*** (0.000)
2006 Dummy							0.069** (0.048)
2008 Dummy							-0.026 (0.611)
2010 Dummy							0.119* (0.100)
2012 Dummy							0.113 (0.190)
2014 Dummy							0.212** (0.039)
2016 Dummy							0.219* (0.062)
2018 Dummy							0.121 (0.369)
Constant	0.634*** (0.000)	0.838*** (0.000)	0.864*** (0.000)	0.894*** (0.000)	0.898*** (0.000)	0.852*** (0.000)	0.906*** (0.000)
N	3372	3372	3372	3372	3372	3372	3372
R^2 Within	0.0001	0.0147	0.0904	0.0949	0.0949	0.1075	0.1604
R^2 Between	0.0462	0.0406	0.0401	0.0470	0.0504	0.0506	0.0308
R^2 Overall	0.0287	0.0888	0.0113	0.0147	0.0161	0.0234	0.0067

p-values in parentheses
$^{*}\ p < 0.1,\ ^{**}\ p < 0.05,\ ^{***}\ p < 0.01$

Dependent Variable: Economic Governance and the Role of the State	(10) Cultural goods	(11) Printed goods	(12) Cultural goods + independents	(13) Printed goods + independents	(14) Cultural goods + Year dummies	(15) Printed goods + Year dummies	(16) Cultural goods full model	(17) Printed goods full model
Average Cultural/Printed Imports	0.067	-5.888	-0.685	-4.597	-0.085	-3.014	-0.011	-2.550
	(0.901)	(0.901)	(0.601)	(0.357)	(0.947)	(0.533)	(0.993)	(0.599)
Real GDP Per Capita Difference	-0.009***	-0.008***	-0.009***	-0.007***	-0.007***	-0.005***	-0.006***	-0.005**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.010)	(0.005)	(0.024)
Joint EU Membership	-0.011***	-0.012***	-0.011***	-0.012***	-0.003	-0.009	-0.003	-0.009
	(0.000)	(0.000)	(0.000)	(0.000)	(0.747)	(0.344)	(0.779)	(0.348)
Average EU Funds	-0.040***	-0.033***	-0.039***	-0.033***	-0.047***	-0.039***	-0.057***	-0.048***
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)
Cultural/Printed Communist-Capitalist Trade			1.213	-12.807	0.840	-16.748**	-0.565	-15.909*
			(0.276)	(0.145)	(0.443)	(0.049)	(0.608)	(0.061)
Cultural/Printed Catholic-Protestant Trade			-0.322	8.557	-0.577	8.392	-0.962	5.534
			(0.821)	(0.305)	(0.676)	(0.299)	(0.488)	(0.496)
Cultural/Printed Catholic-Orthodox Trade			-11.664	-65.490	-10.379	-73.773*	-9.294	-72.495
			(0.237)	(0.157)	(0.277)	(0.100)	(0.330)	(0.106)
Cultural/Printed Protestant-Orthodox Trade			20.424***	99.530	17.850***	-22.570	17.684***	-21.535
			(0.000)	(0.603)	(0.000)	(0.903)	(0.000)	(0.908)
Average Bilateral Imports							0.050***	0.048***
							(0.002)	(0.002)
2004 Dummy					0	0	0	0
					(.)	(.)	(.)	(.)
2006 Dummy					0.134***	0.144***	0.117***	0.129***
					(0.000)	(0.000)	(0.000)	(0.000)
2008 Dummy					-0.022	0.001	-0.035	-0.010
					(0.628)	(0.974)	(0.440)	(0.825)
2010 Dummy					0.047	0.087	0.043	0.084
					(0.456)	(0.151)	(0.501)	(0.161)
2012 Dummy					0.021	0.057	0.012	0.051
					(0.799)	(0.474)	(0.889)	(0.521)
2014 Dummy					0.062	0.115	0.050	0.107
					(0.549)	(0.239)	(0.630)	(0.274)
2016 Dummy					0.018	0.088	-0.001	0.074
					(0.881)	(0.443)	(0.995)	(0.519)
2018 Dummy					-0.104	-0.029	-0.129	-0.049
					(0.461)	(0.825)	(0.360)	(0.712)
Constant	0.634***	0.838***	0.960***	0.934***	0.799***	0.817***	0.738***	0.760***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	3082	3142	3082	3142	3082	3142	3052	3112
R^2 Within	0.0793	0.0767	0.0924	0.0785	0.1532	0.1407	0.1586	0.1454
R^2 Between	0.0188	0.0113	0.0100	0.0106	0.0075	0.0074	0.0406	0.0462
R^2 Overall	0.0077	0.0026	0.0029	0.0023	0.0006	0.0012	0.0051	0.0031

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Cultural distance *Nationalism and Xenophobia – Conventional trade*

Dependent Variable: Nationalism and Xenophobia	(18) Basic	(19) GDP difference added	(20) EU membership added	(21) EU Funds added	(22) Distance interaction added	(23) History interactions added	(24) Year Dummies added
Average Bilateral Imports	0.149***	0.149***	0.092***	0.092***	0.074**	-0.174***	-0.178***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.022)	(0.000)	(0.000)
Real GDP Per Capita Difference		0.019***	0.009***	0.009***	0.009***	0.009***	0.006**
		(0.000)	(0.002)	(0.002)	(0.002)	(0.002)	(0.046)
Joint EU Membership			0.018***	0.018***	0.018***	0.017***	-0.023*
			(0.000)	(0.000)	(0.000)	(0.000)	(0.054)
Average EU Funds				0.000	0.000	-0.004	0.048***
				(0.999)	(0.991)	(0.780)	(0.010)
Trade*Distance					0.000	0.000	-0.000
					(0.456)	(0.402)	(0.847)
Communist-Capitalist Trade						0.327***	0.320***
						(0.000)	(0.000)
Catholic-Protestant Trade						0.159***	0.169***
						(0.000)	(0.000)
Catholic-Orthodox Trade						-0.320*	**-0.252**
						(0.068)	**(0.143)**
Protestant-Orthodox Trade						-0.415**	**-0.340**
						(0.050)	**(0.103)**
2002 Dummy							0
							(.)
2004 Dummy							0.022
							(0.476)
2006 Dummy							0.202***
							(0.000)
2008 Dummy							0.136*
							(0.055)
2010 Dummy							0.225**
							(0.016)
2012 Dummy							0.322***
							(0.006)
2014 Dummy							0.272*
							(0.054)
2016 Dummy							0.601***
							(0.000)
2018 Dummy							0.620***
							(0.001)
Constant	0.532***	0.248***	0.227***	0.227***	0.217***	0.303***	0.653***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	3442	3442	3442	3442	3442	3442	3442
R^2 Within	0.0178	0.0325	0.0844	0.0844	0.0845	0.1165	0.1546
R^2 Between	0.0145	0.0041	0.0353	0.0353	0.0333	0.0031	0.0092
R^2 Overall	0.0051	0.0005	0.0139	0.0139	0.0128	0.0018	0.0426

p-values in parentheses
$^{*}\ p < 0.1$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$

Table 10: Cultural distance *Nationalism and Xenophobia – Cultural trade*

Dependent Variable: Nationalism and Xenophobia	(25) Cultural goods	(26) Printed goods	(27) Cultural goods + independents	(28) Printed goods + independents	(29) Cultural goods + Year dummies	(30) Printed goods + Year dummies	(31) Cultural goods full model	(32) Printed goods full model
Average Cultural/Printed Imports	4.683***	8.765	6.268***	25.929***	5.290***	26.718***	5.559***	27.607***
	(0.000)	(0.143)	(0.002)	(0.001)	(0.009)	(0.000)	(0.006)	(0.000)
Real GDP Per Capita Difference	0.013***	0.011***	0.014***	0.011***	0.010***	0.007**	0.010***	0.008**
	(0.000)	(0.001)	(0.000)	(0.001)	(0.004)	(0.024)	(0.003)	(0.017)
Joint EU Membership	0.021***	0.020***	0.022***	0.021***	-0.001	-0.003	-0.001	-0.002
	(0.000)	(0.000)	(0.000)	(0.000)	(0.942)	(0.860)	(0.970)	(0.887)
Average EU Funds	-0.024	-0.020	-0.026*	-0.019	0.034*	0.040**	0.034*	0.038*
	(0.104)	(0.172)	(0.081)	(0.202)	(0.072)	(0.033)	(0.086)	(0.056)
Cultural/Printed Communist-Capitalist Trade			-3.590**	-52.580***	-3.905**	-53.795***	-4.137**	-53.618***
			(0.041)	(0.000)	(0.024)	(0.000)	(0.017)	(0.000)
Cultural/Printed Catholic-Protestant Trade			0.507	-3.948	0.868	-6.716	0.539	**-10.035**
			(0.818)	(0.761)	(0.690)	(0.598)	(0.806)	**(0.435)**
Cultural/Printed Catholic-Orthodox Trade			6.586	-112.039	4.333	-117.767*	4.543	**-118.079***
			(0.667)	(0.120)	(0.774)	(0.097)	(0.763)	**(0.096)**
Cultural/Printed Protestant-Orthodox Trade			-14.518**	-333.292	-15.894***	-449.398	-16.238***	-449.381
			(0.012)	(0.263)	(0.005)	(0.1245)	(0.005)	(0.125)
Average Bilateral Imports							0.019	0.051**
							(0.451)	(0.041)
2004 Dummy					0	0	0	0
					(.)	(.)	(.)	(.)
2006 Dummy					0.148***	0.160***	0.147***	0.154***
					(0.000)	(0.000)	(0.001)	(0.000)
2008 Dummy					0.030	0.033	0.028	0.028
					(0.670)	(0.625)	(0.662)	(0.683)
2010 Dummy					0.087	0.095	0.086	0.096
					(0.390)	(0.316)	(0.394)	(0.315)
2012 Dummy					0.140	0.159	0.137	0.153
					(0.289)	(0.203)	(0.302)	(0.222)
2014 Dummy					0.070	0.076	0.064	0.067
					(0.667)	(0.620)	(0.696)	(0.662)
2016 Dummy					0.340*	0.357**	0.323*	0.347*
					(0.078)	(0.048)	(0.083)	(0.056)
2018 Dummy					0.327	0.338	0.317	0.318
					(0.142)	(0.105)	(0.155)	(0.128)
Constant	0.239***	0.321***	0.215***	0.311***	0.410***	0.488***	0.375***	0.412***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.006)	(0.001)
N	3082	3142	3082	3142	3082	3142	3052	3112
R^2 Within	0.0842	0.0693	0.0880	0.0765	0.1207	0.1130	0.1203	0.1133
R^2 Between	0.0289	0.0303	0.0327	0.0381	0.0187	0.0095	0.0269	0.0237
R^2 Overall	0.0135	0.0152	0.0163	0.0186	0.0203	0.0318	0.0113	0.0123

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Cultural distance *Trade and Entrepreneurship – Conventional trade*

Dependent Variable: Trade and Entrepreneurship	(33) Basic	(34) GDP difference added	(35) EU membership added	(36) EU Funds added	(37) Distance interaction added	(38) History interactions added	(39) Year Dummies added
Average Bilateral Imports	0.052***	0.052***	0.080***	0.080***	0.108***	0.102***	0.089***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.003)
Real GDP Per Capita Difference		0.000	0.005**	0.005**	0.005**	0.005**	0.004*
		(0.931)	(0.013)	(0.016)	(0.018)	(0.018)	(0.084)
Joint EU Membership			-0.009***	-0.009***	-0.009***	-0.009***	0.025***
			(0.000)	(0.000)	(0.000)	(0.000)	(0.004)
Average EU Funds				-0.003	-0.003	-0.003	0.038***
				(0.767)	(0.750)	(0.734)	(0.004)
Trade*Distance					-0.000	-0.000	0.00009***
					(0.114)	(0.125)	(0.0144)
Communist-Capitalist Trade						0.002	0.020
						(0.945)	(0.491)
Catholic-Protestant Trade						0.014	0.030
						(0.618)	(0.302)
Catholic-Orthodox Trade						0.072	0.088
						(0.562)	(0.474)
Protestant-Orthodox Trade						0.018	0.031
						(0.905)	(0.836)
2002 Dummy							0
							(.)
2004 Dummy							-0.125***
							(0.000)
2006 Dummy							-0.147***
							(0.000)
2008 Dummy							-0.330***
							(0.000)
2010 Dummy							0.391***
							(0.000)
2012 Dummy							-0.428***
							(0.000)
2014 Dummy							-0.457***
							(0.000)
2016 Dummy							-0.529***
							(0.000)
2018 Dummy							-0.545***
							(0.000)
Constant	0.834***	0.831***	0.842***	0.844***	0.860***	0.863***	0.728***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	3442	3442	3442	3442	3442	3442	3442
R^2 Within	0.0048	0.0048	0.0326	0.0326	0.0334	0.0336	0.0732
R^2 Between	0.0846	0.0809	0.0049	0.0053	0.0095	0.0057	0.0120
R^2 Overall	0.0684	0.0647	0.0000	0.0001	0.0009	0.0001	0.0103

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Cultural distance *Trade and Entrepreneurship – Cultural trade*

Dependent Variable: Trade and Entrepreneurship	(40) Cultural goods	(41) Printed goods	(42) Cultural goods + independents	(43) Printed goods + independents	(44) Cultural goods + Year dummies	(45) Printed goods + Year dummies	(46) Cultural goods full model	(47) Printed goods full model
Average Cultural/Printed Imports	2.036***	-4.862	1.609	-3.311	1.596	-2.851	1.357	-2.131
	(0.000)	(0.204)	(0.215)	(0.503)	(0.214)	(0.559)	(0.295)	(0.664)
Real GDP Per Capita Difference	0.006***	0.005**	0.006***	0.005**	0.004*	0.003	0.004*	0.003
	(0.005)	(0.019)	(0.006)	(0.021)	(0.087)	(0.189)	(0.074)	(0.123)
Joint EU Membership	-0.005***	-0.006***	-0.005***	-0.006***	0.010	0.011	0.011	0.011
	(0.000)	(0.000)	(0.000)	(0.000)	(0.332)	(0.266)	(0.291)	(0.240)
Average EU Funds	0.003	0.016	0.002	0.015	0.035***	0.052***	0.032**	0.048***
	(0.788)	(0.104)	(0.814)	(0.113)	(0.004)	(0.000)	(0.012)	(0.000)
Cultural/Printed Communist-Capitalist Trade			-1.456	8.133	-1.183	10.006	-1.450	10.421
			(0.193)	(0.350)	(0.283)	(0.243)	(0.193)	(0.225)
Cultural/Printed Catholic-Protestant Trade			0.907	-7.089	0.403	-7.700	0.356	-11.070
			(0.519)	(0.391)	(0.772)	(0.344)	(0.799)	(0.178)
Cultural/Printed Catholic-Orthodox Trade			17.729*	-239.664***	13.112	-241.003***	14.323	-240.857***
			(0.069)	(0.000)	(0.173)	(0.000)	(0.138)	(0.000)
Cultural/Printed Protestant-Orthodox Trade			14.165***	-504.080***	12.345***	-599.879***	12.445***	599.337***
			(0.000)	(0.008)	(0.001)	(0.001)	(0.001)	(0.001)
Average Bilateral Imports							0.044***	0.054***
							(0.008)	(0.001)
2004 Dummy					0	0	0	0
					(.)	(.)	(.)	(.)
2006 Dummy					0.022	0.018	0.014	0.009
					(0.406)	(0.472)	(0.616)	(0.734)
2008 Dummy					-0.132***	-0.140***	-0.141***	-0.148***
					(0.004)	(0.001)	(0.002)	(0.001)
2010 Dummy					-0.179***	-0.190***	-0.183***	-0.191***
					(0.005)	(0.002)	(0.004)	(0.002)
2012 Dummy					-0.178**	-0.203**	-0.189**	-0.212***
					(0.035)	(0.011)	(0.026)	(0.008)
2014 Dummy					-0.171	-0.199**	-0.185*	-0.210**
					(0.101)	(0.044)	(0.078)	(0.034)
2016 Dummy					-0.220*	-0.240**	-0.235*	-0.254**
					(0.073)	(0.038)	(0.056)	(0.029)
2018 Dummy					-0.197	-0.230*	-0.222	-0.253*
					(0.165)	(0.085)	(0.119)	(0.058)
Constant	0.850***	0.889***	0.846***	0.900***	0.782***	0.813***	0.723***	0.737***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	3082	3142	3082	3142	3082	3142	3052	3112
R^2 Within	0.0160	0.0109	0.0241	0.0246	0.0598	0.0587	0.0627	0.0634
R^2 Between	0.0569	0.0669	0.0804	0.0400	0.0000	0.0022	0.0126	0.0292
R^2 Overall	0.1089	0.1037	0.1360	0.0759	0.0011	0.0000	0.0076	0.0180

p-values in parentheses
$^*\ p < 0.1$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$

Table A: Adjusted Regressions – *Conventional Trade*

Dependent Variable: Cultural Distance	(10A) Economic Governance and the Role of the State	(10B) Economic Governance and the Role of the State	(24A) Nationalism and Xenophobia	(24B) Nationalism and Xenophobia	(39A) Trade and Entrepreneurship	(39B) Trade and Entrepreneurship
Average Bilateral Imports	0.140***	0.079***	-0.057*	-0.087**	0.102***	0.095***
	(0.000)	(0.007)	(0.097)	(0.034)	(0.000)	(0.001)
Real GDP Per Capita Difference	-0.004*	-0.004**	0.006**	0.006**	0.004*	0.004*
	(0.067)	(0.050)	(0.039)	(0.041)	(0.083)	(0.083)
Joint EU Membership	-0.029***	-0.026***	-0.025**	-0.029**	0.025***	0.025***
	(0.001)	(0.003)	(0.043)	(0.019)	(0.004)	(0.004)
Average EU Funds	-0.048***	-0.049***	0.047***	0.049***	0.038***	0.038***
	(0.000)	(0.000)	(0.011)	(0.009)	(0.004)	(0.004)
Trade*Distance	0.00006**	0.00002	-0.00008**	-0.00008	-0.00009***	-0.00009**
	(0.050)	(0.558)	(0.060)	(0.109)	(0.009)	(0.017)
Communist-Capitalist Trade	-0.201***		0.344***		0.020	
	(0.000)		(0.000)		(0.471)	
Catholic-Protestant Trade		0.023		0.193***		0.031
		(0.431)		(0.000)		(0.276)
Catholic-Orthodox Trade		-0.047		**-0.369****		0.081
		(0.705)		**(0.034)**		(0.509)
Protestant-Orthodox Trade		-0.010		**-0.429****		0.025
		(0.947)		**(0.042)**		(0.864)
2002 Dummy	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
2004 Dummy	-0.090***	-0.099***	0.022	0.036	-0.125***	-0.124***
	(0.000)	(0.000)	(0.476)	(0.252)	(0.000)	(0.000)
2006 Dummy	0.071**	0.051**	0.209***	0.232***	-0.148***	-0.145***
	(0.042)	(0.148)	(0.000)	(0.000)	(0.000)	(0.000)
2008 Dummy	-0.025	-0.049	0.142**	0.175**	-0.330***	-0.327***
	(0.625)	(0.348)	(0.046)	(0.015)	(0.000)	(0.000)
2010 Dummy	0.114*	0.081	0.238**	0.277***	0.391***	0.388***
	(0.095)	(0.235)	(0.011)	(0.003)	(0.000)	(0.000)
2012 Dummy	0.115	0.076	0.334***	0.386***	-0.429***	-0.424***
	(0.181)	(0.382)	(0.005)	(0.001)	(0.000)	(0.000)
2014 Dummy	0.215**	0.167	0.286**	0.351**	-0.458***	-0.452***
	(0.036)	(0.107)	(0.044)	(0.014)	(0.000)	(0.000)
2016 Dummy	0.222*	0.166	0.617***	0.691***	-0.530***	-0.523***
	(0.058)	(0.158)	(0.000)	(0.000)	(0.000)	(0.000)
2018 Dummy	0.124	0.069	0.633***	0.711***	-0.547***	-0.539***
	(0.355)	(0.611)	(0.001)	(0.000)	(0.000)	(0.000)
Constant	0.911***	0.938***	0.646***	0.609***	0.753***	0.757***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	3372	3372	3442	3442	3442	3442
R^2 Within	0.1601	0.1454	0.1470	0.1355	0.0727	0.0730
R^2 Between	0.0277	0.0238	0.0142	0.0043	0.0160	0.0130
R^2 Overall	0.0052	0.0028	0.0507	0.0406	0.0138	0.0112

Table B: Adjusted Regressions – *Cultural Trade*

Dependent Variable: Cultural Distance	(16A) Economic Governance and the Role of the State	(16B) Economic Governance and the Role of the State	(31A) Nationalism and Xenophobia	(31B) Nationalism and Xenophobia	(46A) Trade and Entrepreneurship	(46B) Trade and Entrepreneurship
Average Cultural Imports	0.023	0.140	5.270***	4.453**	2.174***	0.970
	(0.975)	(0.911)	(0.000)	(0.024)	(0.003)	(0.295)
Real GDP Per Capita Difference	-0.006***	-0.006***	0.010***	0.010***	0.004*	0.004*
	(0.007)	(0.005)	(0.004)	(0.005)	(0.056)	(0.088)
Joint EU Membership	-0.003	-0.003	-0.001	-0.002	0.011	0.010
	(0.792)	(0.794)	(0.959)	(0.896)	(0.271)	(0.315)
Average EU Funds	-0.056***	-0.057***	0.034*	0.035*	0.033**	0.033**
	(0.000)	(0.000)	(0.094)	(0.079)	(0.010)	(0.011)
Cultural Communist-Capitalist Trade	-0.363		-3.357**		**-1.867***	
	(0.736)		(0.048)		**(0.085)**	
Cultural Catholic-Protestant Trade		-0.827		-0.448		0.011
		(0.543)		(0.835)		(0.994)
Cultural Catholic-Orthodox Trade		-9.085		3.012		13.786
		(0.341)		(0.842)		(0.153)
Cultural Protestant-Orthodox Trade		17.555***		-15.291***		12.777***
		(0.000)		(0.007)		(0.000)
Average Bilateral Imports	0.049***	0.050***	0.020	0.013	0.042***	0.042**
	(0.003)	(0.002)	(0.434)	(0.604)	(0.010)	(0.011)
2004 Dummy	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
2006 Dummy	0.122***	0.117***	0.143***	0.149***	0.016	0.014
	(0.000)	(0.000)	(0.001)	(0.000)	(0.561)	(0.606)
2008 Dummy	-0.035	-0.035	0.029	0.031	-0.144***	-0.140***
	(0.446)	(0.436)	(0.687)	(0.668)	(0.002)	(0.002)
2010 Dummy	0.043	0.043	0.087	0.086	-0.187***	-0.182***
	(0.503)	(0.504)	(0.389)	(0.379)	(0.004)	(0.005)
2012 Dummy	0.011	0.011	0.139	0.141	-0.193**	-0.188**
	(0.899)	(0.895)	(0.297)	(0.287)	(0.023)	(0.027)
2014 Dummy	0.051	0.049	0.064	0.071	-0.189*	-0.183*
	(0.628)	(0.636)	(0.695)	(0.666)	(0.072)	(0.082)
2016 Dummy	-0.001	-0.001	0.334*	0.338*	-0.240*	-0.234*
	(0.995)	(0.992)	(0.084)	(0.080)	(0.052)	(0.058)
2018 Dummy	-0.130	-0.131	0.319	0.327	-0.228	-0.218
	(0.358)	(0.354)	(0.153)	(0.143)	(0.110)	(0.126)
Constant	0.730***	0.733***	0.383***	0.411***	0.723***	0.735***
	(0.000)	(0.000)	(0.005)	(0.002)	(0.000)	(0.000)
N	3052	3052	3052	3052	3052	3052
R^2 Within	0.1484	0.1585	0.1170	0.1183	0.0573	0.0621
R^2 Between	0.0551	0.0403	0.0216	0.0098	0.0155	0.0115
R^2 Overall	0.0094	0.0053	0.0147	0.0283	0.0102	0.0063

Table C: Adjusted Regressions – *Printed Trade*

Dependent Variable: Cultural Distance	(17A) Economic Governance and the Role of the State	(17B) Economic Governance and the Role of the State	(32A) Nationalism and Xenophobia	(32B) Nationalism and Xenophobia	(47A) Trade and Entrepreneurship	(47B) Trade and Entrepreneurship
Average Printed Imports	-1.803	-5.810	24.078***	16.621**	-6.955	0.004
	(0.683)	(0.200)	(0.001)	(0.021)	(0.122)	(0.999)
Real GDP Per Capita Difference	-0.005**	-0.005**	0.008**	0.007**	0.003	0.003
	(0.025)	(0.021)	(0.016)	(0.024)	(0.108)	(0.114)
Joint EU Membership	-0.009	-0.009	-0.001	-0.003	0.013	0.012
	(0.359)	(0.336)	(0.928)	(0.849)	(0.191)	(0.234)
Average EU Funds	-0.048***	-0.048***	0.037*	0.038*	0.046***	0.048***
	(0.000)	(0.000)	(0.065)	(0.059)	(0.000)	(0.000)
Printed Communist-Capitalist Trade	-13.755*		-55.454***		9.293	
	(0.093)		(0.000)		(0.264)	
Printed Catholic-Protestant Trade		1.419		**-23.902***		-8.375
		(0.856)		**(0.054)**		(0.178)
Printed Catholic-Orthodox Trade		-70.007		**-109.691**		-242.4877***
		(0.119)		**(0.123)**		(0.000)
Printed Protestant-Orthodox Trade		-21.314		-449.381		599.482***
		(0.908)		(0.127)		(0.001)
Average Bilateral Imports	0.049***	0.048***	0.049**	0.051**	0.052***	0.054***
	(0.002)	(0.002)	(0.049)	(0.037)	(0.001)	(0.001)
2004 Dummy	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
2006 Dummy	0.126***	0.128***	0.149***	0.154***	0.000	0.009
	(0.000)	(0.000)	(0.000)	(0.000)	(0.995)	(0.717)
2008 Dummy	-0.012	-0.010	0.024	0.028	-0.156***	-0.148***
	(0.774)	(0.817)	(0.722)	(0.701)	(0.000)	(0.001)
2010 Dummy	0.083	0.083	0.092	0.096	-0.198***	-0.191***
	(0.168)	(0.167)	(0.331)	(0.338)	(0.001)	(0.002)
2012 Dummy	0.049	0.049	0.150	0.153	-0.218***	-0.211***
	(0.534)	(0.533)	(0.231)	(0.237)	(0.007)	(0.008)
2014 Dummy	0.104	0.106	0.061	0.067	-0.222**	-0.209**
	(0.288)	(0.277)	(0.693)	(0.673)	(0.026)	(0.034)
2016 Dummy	0.070	0.073	0.338*	0.347*	-0.270**	-0.253**
	(0.540)	(0.525)	(0.062)	(0.059)	(0.021)	(0.029)
2018 Dummy	-0.053	-0.049	0.310	0.318	-0.269**	-0.254*
	(0.691)	(0.710)	(0.137)	(0.131)	(0.046)	(0.058)
Constant	0.760***	0.765***	0.406***	0.412***	0.725***	0.734***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
N	3112	3112	3112	3112	3112	3112
R^2 Within	0.1443	0.1442	0.1133	0.1077	0.0487	0.0628
R^2 Between	0.0460	0.0465	0.0187	0.0134	0.0165	0.0300
R^2 Overall	0.0032	0.0034	0.0135	0.0212	0.0123	0.0187

Table D: Adjusted Regressions – *Test for direction of convergence*

Dependent Variable: Average Value Nationalism and Xenophobia	(24.1A) Average Value Nationalism and Xenophobia	(24.1B) Average Value Nationalism and Xenophobia
Average Bilateral Imports	-0.121***	-0.215***
	(0.000)	(0.000)
Average GDP	0.027***	0.026***
	(0.000)	(0.000)
Joint EU Membership	-0.002	-0.0003
	(0.772)	(0.965)
Average EU Funds	-0.038***	-0.037***
	(0.001)	(0.001)
Trade*Distance	0.00004*	0.0001***
	(0.071)	(0.000)
Communist-Capitalist Trade	-0.014	
	(0.578)	
Catholic-Protestant Trade		0.089***
		(0.000)
Catholic-Orthodox Trade		-0.565***
		(0.000)
Protestant-Orthodox Trade		-0.132
		(0.312)
2002 Dummy	0	0
	(.)	(.)
2004 Dummy	-0.081***	-0.081***
	(0.000)	(0.000)
2006 Dummy	-0.031	-0.042
	(0.317)	(0.170)
2008 Dummy	0.061	0.052
	(0.182)	(0.252)
2010 Dummy	0.023	0.007
	(0.702)	(0.908)
2012 Dummy	0.103	0.086
	(0.169)	(0.246)
2014 Dummy	0.059	0.037
	(0.511)	(0.677)
2016 Dummy	0.041	0.017
	(0.685)	(0.866)
2018 Dummy	0.129	0.107
	(0.272)	(0.358)
Constant	3.728***	3.742***
	(0.000)	(0.000)
N	3442	3442
R^2 Within	0.1511	0.1648
R^2 Between	0.1085	0.1334
R^2 Overall	0.1090	0.1220

Appendix 14: Model 24.1 – *Average Cultural Imports* added

Dependent Variable: Nationalism and Xenophobia	(24.2) Year Dummies added
Average Bilateral Imports	-0.211***
	(0.000)
Average Cultural Imports	2.285***
	(0.009)
Real GDP Per Capita Difference	0.007**
	(0.024)
Joint EU Membership	-0.005
	(0.743)
Average EU Funds	0.041**
	(0.037)
Trade*Distance	-0.000
	(0.571)
Communist-Capitalist Trade	0.375***
	(0.000)
Catholic-Protestant Trade	0.126***
	(0.008)
Catholic-Orthodox Trade	-0.184
	(0.312)
Protestant-Orthodox Trade	-0.291
	(0.182)
2004 Dummy	0
	(.)
2006 Dummy	0.138***
	(0.001)
2008 Dummy	0.036
	(0.605)
2010 Dummy	0.088
	(0.376)
2012 Dummy	0.145
	(0.269)
2014 Dummy	0.074
	(0.647)
2016 Dummy	0.353*
	(0.064)
2018 Dummy	0.361
	(0.101)
Constant	0.555***
	(0.000)
N	3052
R^2 Within	0.1442
R^2 Between	0.0073
R^2 Overall	0.0362

	(16.1) Economic Governance and the Role of the State	(31.1) Nationalism and Xenophobia	(46.1) Trade and Entrepreneurship
Average Cultural Imports	-1.531 (0.208)	3.810[*] (0.074)	1.917 (0.118)
Real GDP Per Capita Difference	0.004[*] (0.059)	0.011[***] (0.002)	0.004[**] (0.027)
Joint EU Membership	-0.014[***] (0.000)	0.013[***] (0.000)	-0.018 (0.265)
Average EU Funds	0.090[***] (0.000)	-0.004 (0.887)	0.025[*] (0.080)
Cultural Communist-Capitalist Trade	1.353 (0.202)	-2.855 (0.125)	-0.684 (0.521)
Cultural Catholic-Protestant Trade	0.439 (0.740)	1.787 (0.441)	-0.270 (0.839)
Cultural Catholic-Orthodox Trade	-3.553 (0.735)	6.008 (0.745)	25.009[**] (0.018)
Cultural Protestant-Orthodox Trade	22.873 (0.260)	-52.884 (0.138)	-29.528 (0.149)
Average Bilateral Imports	0.076[***] (0.000)	-0.021 (0.486)	0.028 (0.117)
2006 Dummy	0.210[***] (0.000)	0.075 (0.065)	0.167[***] (0.000)
2008 Dummy	0.002 (0.889)	-0.162[***] (0.000)	-0.051[***] (0.004)
2010 Dummy	0.116[***] (0.000)	-0.135[***] (0.000)	-0.048[***] (0.002)
2012 Dummy	0.100[***] (0.000)	-0.091[***] (0.001)	-0.032[**] (0.034)
2014 Dummy	0.160[***] (0.000)	-0.176[***] (0.000)	-0.006 (0.682)
2016 Dummy	0.103[***] (0.000)	0.036 (0.201)	-0.028[*] (0.090)
Constant	0.793[***] (0.000)	0.464[***] (0.000)	0.762[***] (0.000)
N	2574	2574	2574
R^2 Within	0.1857	0.1171	0.0773
R^2 Between	0.0368	0.0594	0.0075
R^2 Overall	0.0034	0.0118	0.0000

p-values in parentheses
[*] $p < 0.1$, [**] $p < 0.05$, [***] $p < 0.01$

Appendix 16: *Joint EU Membership < 2 years dropped – Multicollinearity control*

	(16.1A) Economic Governance and the Role of the State	(16.1B) Economic Governance and the Role of the State	(31.1A) Nationalism and Xenophobia	(31.1B) Nationalism and Xenophobia	(46.1A) Trade and Entrepreneurship	(46.1B) Trade and Entrepreneurship
Average Cultural Imports	-1.194*	-1.251	5.159*	3.219	1.732**	1.775
	(0.080)	(0.296)	(0.000)	(0.125)	(0.012)	(0.141)
Real GDP Per Capita Difference	-0.004*	-0.004*	0.011***	0.011***	0.004**	0.004**
	(0.063)	(0.067)	(0.001)	(0.002)	(0.031)	(0.029)
Joint EU Membership	-0.014***	-0.014***	0.013***	0.012***	-0.002	-0.002
	(0.000)	(0.000)	(0.000)	(0.000)	(0.283)	(0.228)
Average EU Funds	0.090***	0.090***	-0.004	-0.004	0.025*	0.025*
	(0.000)	(0.000)	(0.865)	(0.858)	(0.079)	(0.083)
Cultural Communist-Capitalist Trade	1.413		-2.551		-0.648	
	(0.173)		(0.161)		(0.535)	
Cultural Catholic-Protestant Trade		0.784		1.059		0.445
		(0.545)		(0.641)		(0.733)
Cultural Catholic-Orthodox Trade		-2.819		4.458		24.638**
		(0.788)		(0.809)		(0.020)
Cultural Protestant-Orthodox Trade		23.166		-53.503		-29.676
		(0.254)		(0.133)		(0.147)
Average Bilateral Imports	0.077***	0.078***	-0.022	-0.026	0.025	0.07
	(0.000)	(0.000)	(0.469)	(0.400)	(0.157)	(0.130)
2006 Dummy	0.210***	0.210***	0.074	0.076	0.166***	0.167***
	(0.000)	(0.000)	(0.067)	(0.060)	(0.000)	(0.000)
2008 Dummy	0.003	0.003	-0.164***	-0.162***	-0.053***	-0.051***
	(0.865)	(0.872)	(0.000)	(0.000)	(0.003)	(0.004)
2010 Dummy	0.117***	0.116***	-0.136***	-0.135***	-0.051***	-0.048***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)
2012 Dummy	0.100***	0.100***	-0.091***	-0.092***	-0.033**	-0.032**
	(0.000)	(0.000)	(0.001)	(0.001)	(0.030)	(0.033)
2014 Dummy	0.160***	0.160***	-0.176***	-0.175***	-0.005	-0.006
	(0.000)	(0.000)	(0.000)	(0.000)	(0.752)	(0.677)
2016 Dummy	0.103***	0.105***	0.035	0.033	-0.029*	-0.029*
	(0.000)	(0.000)	(0.216)	(0.252)	(0.075)	(0.078)
Constant	0.791***	0.782***	0.453***	0.486***	0.768***	0.767***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	2574	2574	2574	2574	2574	2574
R^2 Within	0.1851	0.1850	0.1158	0.1160	0.0737	0.0771
R^2 Between	0.0468	0.0387	0.0512	0.0542	0.0015	0.0058
R^2 Overall	0.0057	0.0040	0.0096	0.0077	0.0009	0.0000

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$