The relationship between experiencing a recession during the formative years of an individual's early adulthood and their long-term sentiments towards the EU

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ABSTRACT

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Are EU-sentiments and EU-fears exogenous? Or, do macroeconomic conditions when young play a critical role in the formation of an individual's lifelong attitudes towards the EU? This paper assesses whether differences in individuals' EU-sentiments can (partly) be attributed to variation in the macroeconomic environment experienced during the critical years of early adulthood. It finds that individuals who experience a recession when young are significantly less trustful towards the EU and its institutions, and that these individuals have significantly higher fears that the EU will erode social security and lead to loss of jobs, national identity and culture than cohorts who did not. To capture the effect of recessions on EU-sentiments, this paper exploits time and country variation in macroeconomic conditions using two different datasets, the European Values Study from 1990-2009 and the Eurobarometer from 2000-2019. It controls for a broad set of individual socio-economic characteristics, as well as for time, country, life-cycle, and cohort fixed effects. The results indicate that the deteriorating effect of experiencing recessions on individuals' attitudes towards the EU is long-lasting.

JEL Classification: D9, E7, O52
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1. Introduction

Euroscepticism, in the form of negative public sentiments towards the EU, poses an increasing challenge for the European Union (EU). Eurosceptic, far-right parties have witnessed increased electoral success in the recent 2019 European elections. The Brexit Referendum and the subsequent British withdrawal from the European Union beginning of 2020 showcase the most extreme consequences of broad societal skepticism and lack of political support towards the EU. Based on these recent events, scholars have highlighted the importance of citizens' support for the political legitimacy of the European Union. They stress that weak political legitimacy will threaten to undermine and erode the political unity behind it, which glues the European Union together (Thomassen 2009). It is therefore of paramount importance to understand how individual views, sentiments and preferences towards the European Union are formed.

Especially in regard to the European financial and sovereign debt crisis, different scholars have assessed how sentiments towards the Union are formed, and how and why they vary over time. They found that macroeconomic shocks, in the form of decreased GDP growth and increased unemployment, deteriorate public perception of the EU and enhance electoral support of Eurosceptic parties (Gomez 2015, Algan, et al. 2017, Dustmann, et al. 2017). This is in line with the strand in literature, which states that individuals form their preferences and beliefs based on shared experiences (Jaeger 1985). In psychology and neuroscience, it has been argued that the impressionable years, defined as the ages of 18 until 25, play a particularly import role for the formation of people's attitudes and beliefs, as during this period individuals are particularly susceptive in regard to their external environment. It is claimed that an individual's core opinions and sentiments are formed during this period of great mental plasticity, remaining largely unaltered hereinafter, implying that experiences later in life are less relevant for attitude formation (Krosnick and Alwin 1989).

Giuliano and Spilimbergo (2014) and Cotofan et al. (2020) have both found empirical evidence in line with the impressionable years hypothesis. The former have identified that cohorts whom experienced a recession during the ages 18-25, on average, tend to believe that success in life depends more on luck than effort and showcase higher support for government redistribution. And that this effect is long-lasting (Giuliano and Spilimbergo 2014). The latter showcase that different macroeconomic conditions when young can partly explain variation of job preferences across different generations, with recessions creating cohorts of workers who prioritize job-income, while periods of positive economic growth shape cohorts who care more about job meaning, for the rest of their lives (Cotofan, et al. 2020).

This paper contributes to the existing literature by assessing whether and how specific macroeconomic environments during the impressionable years affect individuals' formation of EU-sentiments. It seeks to answer the question: can differences in EU-sentiments between individuals partly be attributed to variations in macroeconomic conditions they experienced during their critical years of early adulthood? And does macroeconomic environment when young hereby play a significant role in an individual's formation of long-term sentiments towards the EU? In this context this paper will assess if individuals do regularly amend their EU-sentiments based on changes in macroeconomic environment, or whether this exclusively

happens during the impressionable years. These questions bear special relevance in light of the current coronavirus pandemic. During the COVID-19 pandemic the EU has witnessed a recession of unprecedented dimensions and is showing a slow recovery (as in Q1 2021). Should empirical results illustrate that experiencing adverse economic conditions during one's impressionable years has a negative effect on EU-sentiment formation, this would indicate significant repercussions for EU-support and legitimacy among the next (working) generation.

The two separate sets of results within this paper will draw from two different datasets: the European Values Study between 1990 and 2009, and the Eurobarometer between 2000 and 2019. Drawing data from two different datasets offers among others the advantage of being able to ensure the robustness of the results across different time periods. Boomgaarden et al. (2011) emphasized that EU-sentiments are of "multifaceted nature". Drawing from two separate datasets furthermore enables to better represent this multidimensionality, as the European Values Study data captures more economic-cultural aspects, whereas the Eurobarometer data includes more general institutional features. To identify country-specific economic shocks, this paper will be using World Bank annual GDP growth data from 1961-2019. The major challenge lies in isolating the effect of macroeconomic shocks. Individuals share a large number of socio-economic experiences ranging from economic recessions or booms, globalization and migration features, to technological progress and different unobservable characteristics. To this end, this paper controls for a rich set of individual background and socio-economic characteristics, as well as for year, country, life-cycle and cohort effects, which might – beside the regressor - also account for differences in EU-sentiments.

Evidence from this paper suggests that the macroeconomic environment experienced during the impressionable years, that being the critical years of early adulthood, plays a statistically and economically significant role in shaping an individual's long-term multidimensional attitudes and fears towards the EU. Its results indicate that adverse economic conditions when young, on average, deteriorate an individual's long-term sentiments towards the EU; with cohorts who lived through a recession during their impressionable years, on average, showcasing lower confidence, image and trust levels towards the EU. This is in combination with enhanced expressed levels of fear associated with the Union, ranging from loss of social security and jobs, to loss of national identity and culture. These findings, that experiencing recessions during the impressionable years deteriorates an individual's long-term EU-sentiments, are supported across both datasets of the European Values Study and the Eurobarometer. They are robust across the inclusion of individual characteristics and socio-economic endowments, as well as across a rich set of other country, year, life-cycle and cohort specific controls.

To begin with, this paper will briefly review existing literature on the topic. Thereafter, it will introduce the data and its variables and specify the empirical model. It will then formulate its hypotheses and illustrate descriptive statistics. In chapter 6 the empirical results will be showcased, followed by a series of robustness checks under chapter 7.

2. Theory

This chapter will provide a literature overview on the impact of macroeconomic shocks on sentiments towards EU, placing specific emphasis on the 'impressionable years'. It will first highlight the importance of public views and support towards the EU. Then it will showcase the academic work on the effect of economic recessions on public opinion and sentiments towards the EU. Hereinafter, this chapter will review empirical evidence on the relevance of experiencing macroeconomic shocks in one's impressionable years on long-term belief and value creation.

Relevance of public opinion for EU legitimacy and success

Different scholars have been underlining the importance of positive sentiments towards the EU and on contrary the danger of increasing Eurosceptic attitudes across the EU. Thomassen (2009) stresses that citizens' support is crucial for the political legitimacy of the European Union. The scholar highlights that weak political legitimacy will threaten to undermine and erode the political unity behind it, which glues the European Union together. Similarly, Kosfeld et al. (2005), Kaltenthaler et al. (2010) and Roth et al. (2013) state that in absence of public trust not only the legitimacy but also the authority of the institution is endangered, which might even threaten its dissolution. Hobolt and de Vries (2016) emphasize how Eurosceptic sentiments act as constraint on policy making, which may have significant consequences for the efficiency and effectiveness of the European Union and its politico-economic integration. It is therefore of grand interest to better comprehend determinants of sentiment creation towards the EU.

Impact of macroeconomic shocks on public opinion, preferences and policy

A broad strand of literature finds that individuals' political views and economic preferences are shaped by their personal experiences (Alesina and Fuchs-Schündeln 2007, Malmendier and Nagel 2011, Malmendier and Nagel 2015, Fuchs-Schündeln and Schündeln 2015, Corneo and Neher 2014, Laudenbach, Malmendier and Niessen-Ruenzi 2019). Fisman, Jakiela and Kariv (2015) have studied the relation between macroeconomic shocks and distributional preferences within a laboratory experiment, which captured a subject's selfishness (the weight of one's own payoff) and equality-efficiency tradeoffs (concerns for reducing differences in payoffs versus increasing total payoffs). They found that subjects exposed to economic downturn exhibit greater selfishness and higher emphasis on efficiency relative to equality. This evidence supports that experiencing adverse economic shocks has a significant effect on political views and economic preferences.

Economic downturn within the recent financial and sovereign debt crisis has exacerbated opposition towards a larger EU budget and redistribution from richer towards poorer EU member states (Breuss, et al. 2010; Pantazatou 2015). Particularly the so-called 'net contributors', the states who pay more into the common budget than they receive from it (mostly central European and Scandinavian countries), tend to oppose and 'net beneficiaries', who receive more from the common budget than they contribute into it (mostly Southern and Eastern European countries), tend to favor a larger budget and redistribution of EU funds among member states (Breuss, at al. 2010). Labor market shocks caused by the migration of the 2004 EU enlargement have also driven redistributive effects among and within EU member

states. Baldwin and Wyplosz (2004)'s model indicates the impact of EU-migration for net sending and receiving countries within the Union. The scholars emphasize how with EU-integration, workers of the richer (poorer) country experience a welfare loss (gain) due to the decrease (increase) in wages based on increased (decreased now scarcer) labor supply. Moreover, they suggest that specifically low-skilled workers in receiving countries are affected, as they experience deteriorated wage levels due to low-skilled competition from sending countries. Whereas capital-owners experience a welfare gain (loss) based on the decline (increase) in production costs and an increased (decreases and scarcer) labor force (Baldwin and Wyplosz 2004).

Scholars have identified that macroeconomic shocks represent important variables for explaining the formation of individual attitudes towards the EU. Gomez (2015) has discovered a strong effect of economic variables such as GDP growth, unemployment rate and interest rates on support for the EU during the financial crisis. He found that particularly higher unemployment and higher interest rates were strongly associated with lower levels of support towards the EU (Gomez 2015). His findings also suggest that not all cohorts respond equally strong to adverse economic conditions, with evidence showcasing that younger citizens tend to react more strongly compared to their older peers. In line with the argument of a direct relation between a recession and lower support towards the EU, Roth et al. (2013), Frieden (2016), Dustmann et al. (2017) and Algan et al. (2017) document a decline in trust in European institutions as consequence to the financial crisis. Roth et al. (2013) demonstrate that the significant increase in unemployment rates in Spain, Greece Portugal and Ireland during the financial and sovereign debt crisis led to a pronounced fall in trust in the European Commission and Parliament. Dustmann et al. (2017) and Algan et al. (2017) confirm that increased unemployment rates during the financial crisis are substantial determinants for political distrust towards the EU. Moreover, they find that the described adverse economic conditions were associated with the rise of anti-establishment and the decline of pro-EU parties (Dustmann, et al. 2017, Algan, et al. 2017).

Macroeconomic shocks may affect sentiments towards the EU through individual endowments. Among others, Giuliano and Spilimbergo (2014) have highlighted that economic recessions may influence individual endowments through, for example; education, skill level or labor market status. Individual endowments, in turn, influence the formation of EU-sentiments (Lechler 2018). Indeed, a number of scholars have identified that particular endowments such as unemployment and a low-skill level seem to be variables which on average strongly favor the formation of a negative sentiment towards the EU (Frieden 2016, Dustmann, et al. 2017, Algan, et al. 2017, Lechler 2018). Therefore, differences in the extent of EU-support can largely be attributed to socio-economic characteristics; with less skilled, less educated and older citizens being more skeptical about European integration and more educated and professional workers, same as students being more positive inclined towards European integration (Frieden 2016).

To date, literature has consistently highlighted evidence showcasing that young individuals are significantly more supportive of the EU than their older peers (Rohrschneider 2000, Steenbergen and Jones 2002, Down and Wilson 2013). However, Dinas (2012 & 2013) and Gomez (2015) have found evidence suggesting that the negative consequences of the EU financial crisis have disproportionately affected the lives and prospects of the young EU citizen. In terms of sentiment formation, they further identified that younger cohorts react more strongly to macroeconomic shocks compared to their older peers. Dinas (2012 & 2013)

and Gomez (2015) suggest that these implications might be able to reverse the current pattern and significantly reduce the differences between younger and older individuals when it comes to supporting the EU and its integration.

To this end, current evidence assesses the change of average EU-sentiments across different life-cycles, socio-economic characteristics and macroeconomic shocks. It does not however observe whether differences in EU-sentiments can be partly explained by differences among cohorts who experienced a recession and those who did not during different age periods, particularly the impressionable years. The contribution of this paper therefore lies in the fact of assessing whether different experiences of macroeconomic conditions during the critical years of adulthood – the impressionable years – are (partly) driving differences in the formation of lifelong sentiments towards the EU.

The case of impressionable years experiences on sentiment formation

Evidence from social psychology and neuroscience indicates that individuals during early adulthood are particularly susceptive towards their external environment, implying that later experiences play a less relevant role in the formation of an individual's attitudes, preferences and beliefs. To this end, the *impressionable years hypothesis* states that core sentiments are formed during this period of great mental plasticity, ranging from the ages of 18-25, remaining largely unaltered thereafter (Greenstein 1965, Hess and Torney 1967, Easton and Dennis 1969, Dennis 1973, Cutler 1974, Sears 1981, Sears 1983, Spear 2000). It therefore assumes that individuals do not regularly amend their views and tendencies in response to changes in their external environment. Rather, that this exclusively happens during a time of great mental plasticity within the impressionable years (Krosnick and Alwin 1989).

On the basis of this theory, Giuliano and Spilimbergo (2014) have explored the relation between growing up in a recession and distributional preferences. They found that individuals who experienced a recession when young believe than success in life depends more on luck than on effort (Giuliano and Spilimbergo 2014). Moreover, according to their empirical results, individuals differed in their desire for government intervention depending on the macroeconomic environment they experienced when younger. With cohorts who experienced an economic recession during their critical years of adolescence, between the ages of 18 and 25 years, showcasing a statistically and economically significant increase in individual desire for governmental redistribution (Giuliano and Spilimbergo 2014). A one standard deviation increase in their shock measure is associated with an increase of 0.014 standard deviations of the preferences for redistribution (Giuliano and Spilimbergo 2014). To put the magnitude into perspective: the result is about two-thirds of the effect of being unemployed, yet a lot smaller than the effect of education. Giuliano and Spilimbergo's (2014) evidence validates the impressionable years hypothesis, emphasizing that the macroeconomic context experienced during the impressionable years has a significant and long-lasting effect on the formation of political-economic views and preferences, which hereinafter remain largely unaltered.

Cotofan et al. (2020) also assess the impressionable years hypothesis and examine to which extent macroeconomic conditions experienced within the impressionable years affect job preferences for work meaning and income. They find that economic shocks during the ages 18-25 shape workers' preferences for the rest of their lives, with recessions creating cohorts of workers who give higher priority to income whereas periods of positive economic growth make cohorts care more about job meaning (Cotofan, et al. 2020). A one standard deviation increase in experienced income during the impressionable years translates into a decrease of -

0.14 in the average ranking of preferences for income and an increase of 0.17 in the average ranking of preferences for meaning (Cotofan, et al. 2020). Notably, the magnitude of the effect of (a one standard deviation increase in) experienced income on preferences for income is over 1.8 times that of the impact of gender, and as large as the effect of unemployment (Cotofan, et al. 2020). On the other hand, the magnitude of the effect of (a one standard deviation increase in) experienced income on preferences for job meaning is 0.65 as big as the gender effect and 3.4 times the effect caused by unemployment (Cotofan, et al. 2020). Considering that the highest possible preference rank is five and the lowest possible rank is one, the sizes of the coefficients indicate that the effects are economically significant.

These findings corroborate the impressionable years hypothesis. They provide empirical evidence that macroeconomic conditions during the ages 18-25 influence an individual's long-term politico-economic attitudes, preferences and beliefs. The core results are that cohorts who experienced a recession when young on average showcase a higher preference for governmental redistribution (Giuliano and Spilimbergo 2014) and attribute higher importance to job-income over job-meaning (Cotofan, et al. 2020). This highlights the fact that experiencing a recession during the ages 18-25 creates cohorts who on average express greater fear of economic insecurity and instability. This paper seeks to assess whether this enhanced sentiment of economic vulnerability will partly be associated with supranational institutions, in this case the EU.

3. Data and empirical strategy

3.1 Data

As mentioned in the introduction, the data on sentiments towards the European Union will be drawn from two different datasets. It will utilize survey panel data from the European Values Study (hereinafter labeled "EVS") from 1990 to 2009[1] and from the Eurobarometer (hereinafter labeled "EB") from 2000 to 2019. Both datasets provide insights into individual level characteristics, behaviors and social, politico-economic preferences. They include different survey questions on public sentiments towards the EU. Both datasets rely on a multi-stage and stratified – hereby representative – sample of the adult population (18 years old and older) of each EU member country. Detailed descriptive statistics on EU-sentiments and individual socio-economic characteristics for both datasets can be found under chapter 5 and within the Appendix.

Boomgaarden et al. (2011) emphasized how EU-sentiments are of "multifaceted nature", hereby highlighting the importance of relying on a comprehensive depiction of individual attitudes towards the EU when studying the subject. Both the EVS and the EB survey datasets contain this "multifaceted nature", as they capture a broad spectrum of social-cultural, economic and politico-institutional dimensions of an individual's views towards the EU. The EVS survey data includes individual EU-sentiments in terms of confidence towards the Union, level of fear that the EU will lead to a loss of social security, jobs and/or national identity and culture, as well as individual stand towards EU enlargement. The EB data on the other hand captures EU-sentiments in terms of general image towards the EU, evaluation on if one's country's EU membership is a good or bad thing and whether one's country has benefited or

[1] Survey waves in 1990, 1991, 1992, 1993, 1999, 2000 and 2008 for *CEU*. Whereas the variables/questions on *EUFSS*, *EUFLJ*, *EUFNI* and *EUEN* are only covered in the survey waves of 2008 and 2009

not from its EU membership, as well as individual level of trust in EU institutions, European Parliament and Commission. Therefore, the EVS dataset mostly captures the socio-cultural and economic dimension of EU-sentiments, particularly through the questions on fears linked to the EU. Whereas the EB dataset on the other side captures the institutional dimension of EU-sentiments through survey data on institutional trust-levels and overall perception of EU membership as good/beneficial or bad/non-beneficial.

For the EVS data, to measure individual EU-sentiments this paper will use the survey-answers to these five questions:

1. "How much confidence do you have in the European Union? Is it a great deal (3), quite a lot (2), not very much (1) or none at all (0)?". Within the results this dimension of EU-sentiments will be labeled "Confidence in EU", abbreviated as *CEU*.
2. "Some people may have fears about the building of the European Union. Personally, are you currently afraid that the EU will lead to loss of social security? Where are you placing yourself in this scale, where 1 means very much afraid and 10 not afraid at all." Within the results this dimension of EU-sentiments will be labeled "European Union Fear: Loss of Social Security", abbreviated as *EUFSS*.
3. "Some people may have fears about the building of the European Union. Personally, are you currently afraid that the EU will lead to job-loss? Where are you placing yourself in this scale, where 1 means very much afraid and 10 not afraid at all". Within the results this dimension of EU-sentiments will be labeled "European Union Fear: Loss of Jobs", abbreviated as *EUFLJ*.
4. "Some people may have fears about the building of the European Union. Personally, are you currently afraid that the EU will lead to loss of national identity and culture? Where are you placing yourself in this scale, where 1 means very much afraid and 10 not afraid at all". Within the results this dimension of EU-sentiments will be labeled "European Union Fear: Loss of National Identity and Culture", abbreviated as *EUFNI*.
5. "Some people say that the European Union enlargement should go further. Others say it has already gone too far. Using this card, which number best describes your position, where 1 means should go further and 10 has gone too far". Within the results this dimension of EU-sentiments will be labeled "European Union Enlargement", abbreviated as *EUEN*.

On the other hand, to measure individual EU-sentiments for the EB data, this paper will use the survey-answers to these six questions:

1. "In general, does the EU conjure up for you a very positive (4), fairly positive (3), neutral (2), fairly negative (1) or very negative (0) image?". Within the results this aspect of EU-sentiments will be labeled "European Union Image", abbreviated as *EUI*.
2. "Generally speaking, do you think that your country's membership of the EU is a good thing (2), a bad thing (0) or neither nor (1)?". Within the results this aspect of EU-sentiments will be labeled "European Union Membership", abbreviated as *EUM*.
3. "Taking everything into account, would you say that your country has on balance benefited (1) or not (0) from being a member of the EU?". Within the results this aspect of EU-sentiments will be labeled "European Union Membership Country Benefit", abbreviated as *EUMCB*.

4. "Do you tend to trust (1) or tend not to trust (0) the European Parliament?". Within the results this aspect of EU-sentiments will be labeled "European Union Parliament Trust", abbreviated as *EUPT*.
5. "Do you tend to trust (1) or tend not to trust (0) the European Commission?". Within the results this aspect of EU-sentiments will be labeled "European Union Commission Trust", abbreviated as *EUCT*.
6. "How much trust do you have towards institutions of the European Union. Do you tend to trust (1) or tend not to trust (0) them?". Within the results this aspect of EU-sentiments will be labeled "Trust in the Institutions of the EU", abbreviated as *TIEU*.

As mentioned in chapter 2, individual characteristics and endowments represent important determinants in the formation of public opinion and politico-economic EU-sentiments. They will therefore be included as control variables, as showcased more in detail under chapter 3.2. Both the EVS and the EB dataset includes comprehensive information on individual characteristics and endowments such as age, gender, education and employment/unemployment status. The EVS survey data furthermore includes information on individual income level, parental education and skill background. Moreover, it encompasses a proxy for parental income level through a variable which provides insights into whether the parental household of the surveyed individual experienced financial problems. The EB dataset does not include survey questions on socio-economic features of parental background and hereby will not be able to control for these factors. However, it will be able to control for unskilled /low-skilled workers. As a proxy for income level, it will utilize a dummy indicating whether the surveyed individual often experiences issues paying the bills or not, as well as dummies for self-affiliation into either working or higher class.

Giuliano and Spilimbergo (2014) and Cotofan et al. (2020) have utilized measures of either annual GDP growth or annual income per capita to capture macroeconomic shocks. As done by Giuliano and Spilimbergo (2014), this paper will define recessions in terms of negative annual GDP growth. It will utilize macroeconomic data on annual GDP growth from 1961 to 2019 from the World Bank. This paper will conceptualize a recession based on negative annual GDP growth rather than for example based on two consecutive negative quarterly GDP growth rates, as often done in literature, as especially older GDP growth data is more largely and reliably available on an annual level. Additionally, the survey data used in this paper is collected on an annual level.

3.2 Model specification

This paper applies a very similar empirical methodology to the specification of Giuliano and Spilimbergo (2014). The key variables for the analysis are different measures of EU-sentiments as dependent outcome variable and a dummy variable capturing whether an individual experienced a recession during the impressionable years as independent explanatory variable.

To establish the relation between growing up in a recession and sentiments towards the EU, this paper compares individuals based on the macroeconomic environment they witnessed within their ages 18-25. For this purpose, this work constructs the following variable for each individual from the EVS and EB dataset: A dummy growing up in a recession value "Recession 18-25" that indicates whether an individual has witnessed an economic recession during his/her ages 18-25 or not. This variable is equal to one for individuals that experienced a negative GDP growth at least once in their country during their ages 18-25 and zero across all

individuals that experienced positive GDP growth in their country during their ages 18-25. To construct this growing up in a recession "Recession 18-25" dummy, this paper uses individual data on country of residence and birthyear from the EVS and EB dataset to calculate in which years an individual was aged 18-25 and matches this with country-specific macroeconomic GDP growth data from the World Bank. If an individual witnessed negative GDP growth at least one year among his/her impressionable years, the "Recession 18-25" dummy takes on the value of one. The only difference to the empirical specification of Giuliano and Spilimbergo (2014) is that their explanatory dummy variable indicates whether an individual experienced a recession in his/her region (in the US) during the impressionable years, whereas this paper's explanatory dummy captures whether an individual experienced a recession in his/her EU member state during the ages 18-25. It relies on national rather than regional economic shocks, as its used survey data (in a majority of the times) does not contain regional information on the surveyed individuals as, for example, in which European NUTS 2 region he/she lives.

Both the EVS and EB survey data do not include information on the country in which the individual lived at the ages 18-25 during his/her impressionable years. This study therefore assumes that the individual lived in the same country him/her got surveyed in during his/her impressionable years. Hereby a possible measurement error arises, as a person could have moved and lived abroad in a different country compared to the country in which he/she was interviewed in for the EVS and EB. To address this issue, similarly to Giuliano and Spilimbergo (2014) and Cotofan et al. (2020), the regression is run on a reduced sample of the original EVS and EB dataset, which excludes individuals whom have stated that they moved to the country in which they were interviewed in after their birth. This seeks to minimize the measurement error that a surveyed individual lived in another country during his/her impressionable years.

For ease of interpretation all regressions are obtained by using OLS. The baseline specification for this paper is the following:

$$\text{EU Sentiments}_{ict} = \alpha + \beta\ \text{Recession 18-25}_{ict\_imp} + \Upsilon\ X_{ict} + \zeta_i + \delta_{ct} + \theta_i + \varepsilon_{ict}$$

Where $\text{EU Sentiments}_{ict}$ indicates the outcome variable of interest for individual i in country c in year t. The growing up in a recession explanatory variable labeled as "Recession 18-25" represents a binary variable, which assigns "1" to individuals who experienced a recession - defined as GDP growth below zero - at least once during their impressionable years (age 18-25) and "0" to those whom did not. X_{ict} is a vector of individual characteristics including age, gender, education, employment status, (proxies for) income level, life satisfaction and in the case of the EVS dataset parental background. ζ_i represents age dummies. δ_{ct} are year and country (at the time of the interview) interaction fixed effects. Finally, the term θ_i captures time-invariant cohort fixed effects. To avoid the issue of collinearity between age, year, and cohort fixed effects, but still be able to capture cohort differences, this paper will use the same assumption of Cotofan et al. (2020) that the effect of the birth year on the outcome variable is the same for all individuals born within the same decade.

As Giuliano and Spilimbergo's (2014) evidence suggests, macroeconomic shocks can both directly and indirectly (through the impact on endowments as for example employment status) influence individual views and sentiments towards the EU. The specified model captures both the direct effect of macroeconomic conditions on attitude formation through the explanatory variable of growing up in a recession. As well as the indirect effect recessions exhibit on EU-sentiments formation through individual endowments as education, income or

employment status. Here for, the model leverages the insights specified under the vector of individual characteristics X_{ict}.

As mentioned within Giuliano and Spilimbergo (2014), who apply a similar empirical model, the growing up in a recession explanatory variable of interest exhibits significant variation between countries and cohorts. The scholars emphasize that recent US region-specific trends could be driving results. Moreover, they highlight that other time-varying characteristics other than macroeconomic shocks could be impacting individual attitudes and sentiments (Giuliano and Spilimbergo 2014). This is also the case for this paper's model and the explanatory variable "Recession 18-25". This paper addresses these possible issues and controls for any omitted variables through the inclusion of a broad set of fixed effects; through age dummies, ζ_i controls for age-specific trends and life-cycle effects. Year and country interaction term δ_{ct} enables to control for year-varying, country-specific tendencies, which could account for differences in public opinion and EU-sentiments. The θ_i term helps to exclude the potential bias that results are driven by cohort effects. By controlling for a rich set of socio-economic individual characteristics, as well as for a broad set of year, country, life-cycle and cohort effects, this paper's empirical specification is closely related to the empirical models of both Giuliano and Spilimbergo (2014) and Cotofan et al. (2020).

4. Hypothesis formulation

On basis of the literature within chapter 2 and the model and variable specification within chapter 3, this chapter will formulate hypotheses for the expected effects of experiencing a recession during the impressionable years on EU-sentiment formation.

4.1 European Values Study

As discussed in chapter 2, adverse economic conditions, in the form of negative annual GDP growth, have a negative effect on public sentiments, support and trust levels towards the EU (Roth, Otter and Nowak-Lehmann 2013, Dustmann, et al. 2017, Algan, et al. 2017). The impressionable years hypothesis argues that an individual forms its core (politico-economic) attitudes and beliefs during the ages 18-25, not showcasing any significant changes in these developed stands and positions hereinafter (Krosnick and Alwin 1989). Combining these two intuitions, this paper expects that cohorts, who experience a recession (at least once) during their impressionable years, on average, support and trust the EU less, compared to cohorts who experience purely positively economic growth during their ages 18-25. Therefore, we expect the growing up in a recession explanatory variable "Recession 18-25" to showcase a negative coefficient and effect on the "Confidence in EU" variable, abbreviated as *CEU*.

Academic literature suggests that recessions enhance economic vulnerability (Frieden 2016). As seen within the empirical evidence of Giuliano and Spilimbergo (2014) and Cotofan's et al. (2020), this enhanced feeling of fear of economic insecurity and instability of cohorts, who lived through a recession when young, prevails throughout their lives. Such greater fear of economic vulnerability can be associated with different actors and institutions. This paper expects that individuals will partly associate it with the EU, as it is Europe's highest supranational political organ and institution. To this end, it predicts that cohorts who grew up in the midst of a recession, on average, express greater fear that the EU will lead to the loss of social security and of jobs throughout their lives, compared to cohorts whom did not. This paper therefore expects that the growing up in a recession "Recession 18-25" variable will have a negative

coefficient and effect on the variables "European Union Fear: Loss of Social Security", abbreviated as *EUFSS*, and "European Union Fear: Loss of Jobs", abbreviated as *EUFLJ*. Such a negative coefficient would be in line with the hypothesis that recession-cohorts will express great fear of economic vulnerability linked to EU membership compared to positive economic growth cohorts, as the answer-scale runs from 1-10, with 1 indicating that an individual is very much afraid.

Guiso et al. (2017), Algan et al. (2017) and Dustmann et al (2017) found evidence suggesting that macroeconomic shocks are important determinants for right-wing populist parties with nationalistic narratives. As emphasized prior, adverse economic conditions enhance feelings and fears of economic insecurity and instability. Scholars find that enhanced socio-economic vulnerability represents an important driver for nationalistic sentiments, decreased support for economic and socio-cultural integration, as well as enhanced preferences for protectionism (Colatone and Stanig 2018). To this end, the hypothesis is that individuals who experienced a recession in their impressionable years will on average showcase greater economic vulnerability and stronger nationalistic sentiments compared to cohorts who did not. Therefore, it predicts that the "Recession 18-25" variable will have a negative coefficient on the outcome variable "European Union Fear: Loss of National Identity and Culture", abbreviated as *EUFNI*. Based on the empirical finding that adverse economic conditions create cohorts who express greater economic vulnerability, desire for protectionism and less support for economic and socio-cultural integration, this paper predicts that cohorts who grew up in a recession will on average more strongly oppose EU enlargement throughout their lives than cohorts who did not. To this end, it expects that the "Recession 18-25" variable will indicate a negative coefficient on the "European Union Enlargement" variable, abbreviated as *EUEN*.

4.2 Eurobarometer

The impressionable years hypothesis suggests that macroeconomic context during the ages 18-25, scientifically recognized as a time-period of great mental plasticity, shapes political views, sentiments and preferences, which will largely remain unaltered hereinafter (Krosnick and Alwin 1989). Moreover, empirical evidence emphasizes that recessions have a negative effect on public sentiments, support and trust levels towards the EU (Roth, Otter and Nowak-Lehmann 2013, Dustmann, et al. 2017, Algan, et al. 2017). Jointly, these intuitions suggest that cohorts, who experience a recession during their impressionable years, on average will support and trust the EU less, compared to cohorts who experience purely positive economic growth during their ages 18-25. Therefore, this paper predicts that recessions create cohorts who on average entail a more negative image towards the EU, whereas periods with positive economic growth form cohorts who hold a more positive image of the Union. It expects the "Recession 18-25" variable to have a negative coefficient on the "European Union Image" variable, abbreviated as *EUI*.

Closely related, we expect that experiencing enhanced economic precarity amidst the impressionable years, which play an essential role in the long-term politico-economic attitude formation of an individual, will affect an individual's long-term utilitarian calculation comparing benefits and harms of an EU membership for oneself and one's own EU member state. Combining the intuition of literature and the impressionable years hypothesis, this paper expects that periods with positive economic growth will create cohorts who on average attribute EU membership as more beneficial/a benefit for oneself and one's own EU member state. Contrarily, it predicts that recessions will form cohorts who – due to enhanced

experienced economic vulnerability – will on average regard EU membership as less beneficial/a negative thing. To this end, this paper expects the "Recession 18-25" variable to showcase a negative effect on the variables "European Union Membership", abbreviated as *EUM*, and "European Union Membership Country Benefit", abbreviated as *EUMCB*. This would indicate that adverse macroeconomic conditions during early adulthood would be driving negative long-term sentiments towards the EU and enhance lifelong perceptions, that EU membership is neither beneficial for oneself nor for one's own country.

Roth et al. (2013), Frieden (2016), Dustmann et al. (2017) and Algan et al. (2017) document a decline in trust in European institutions, as well as the European Parliament and Commission as consequence to the financial crisis. They highlight that adverse economic conditions in the form of negative GDP growth represent an important determinant for political distrust towards the EU. To this end, this paper expects that growing up in a recession during the impressionable years will have a negative effect on trust towards both European institutions and political bodies, which will persist throughout life. Therefore, it predicts a negative coefficient and effect of the growing up in a recession "Recession 18-25" dummy on the outcome measures "European Union Parliament Trust", abbreviated as *EUPT*, "European Union Commission Trust", abbreviated as *EUCT* and "Trust in the Institutions of the EU", abbreviated as *TIEU*. This paper expects that cohorts who grew up amidst of adverse economic conditions, will on average showcase higher levels of mistrust towards the EU compared to those cohorts, who did not.

5. Descriptive Statistics

This chapter will describe the data and the sample used in this paper. Moreover, it will illustrate the development of GDP across the EU over time.

Figure 1 showcases the annual GDP growth, as key indicator of macroeconomic conditions, from 1990 until 2019, the period covered by the EVS and EB survey data, for each EU region. The figure indicates that the EU has witnessed different recession across the last decades. Recessions took place in the early nineties across some European regions, namely Eastern Europe, Scandinavia and the Baltic States. Whereas the entire EU was most recently hit during the financial and sovereign debt crisis in 2008,2009, 2011 and 2012. As can be seen by the curves from Figure 1, the severity of the recent crises varied across EU regions and member states. For example, the Baltic States were comparatively to other EU-regions particularly strongly hit by the financial crisis in 2008 and 2009. Whereas Southern Europe, particularly Greece, experienced the most severe economic shock during the sovereign debt crisis in 2011, 2012 and 2013. More detailed illustrations of single member states of each EU region and its GDP growth development over the years can be found in the Appendix.

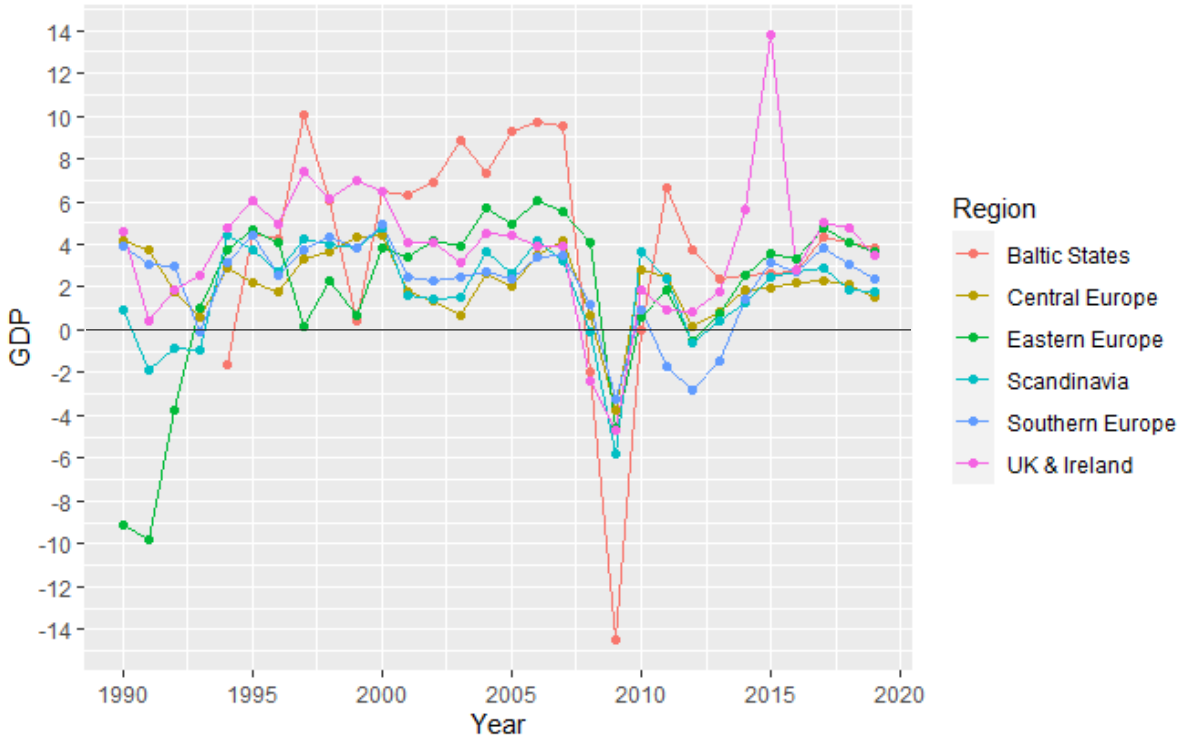

Figure 1 – EU annual GDP growth 1990-2019

When assessing the variation in EU-sentiments it is essential to carefully control for country, time, life-cycle, and cohort effects. Figures 2 illustrates how on average individuals from different age groups ranked their image towards the EU from 2000 until 2019. Combining these insights with Figure 1, similarly to Cotofan et al. (2020), three points become evident: First, the ranking of overall image towards the EU varies substantially over time. A cyclical pattern seems to be observable, with EU-sentiments, on average, deteriorating during economic crises. Second, there seem to be substantial life-cycle effects. Individuals aged 18-25 consistently rank EU-sentiments higher than older respondents. And lastly, besides life-cycle effects, there also seem to be cohort effects. For example, in recent years 2010, 2011 and 2012 individuals aged 18-25 showcased significantly lower levels of image towards the EU than earlier cohorts did during this age. During this period the EU witnessed the sovereign debt crisis. Individuals share a large number of socio-economic experiences and shocks, among others, including globalization, technological progress and migration, which might also be driving the formation of EU-sentiments. Within chapter 6, this paper will assess how much of the variation of EU-sentiments recognized in Figure 2 (and the additional ones in the Appendix) can be explained by differences in macroeconomic conditions experienced by individuals in their impressionable years.

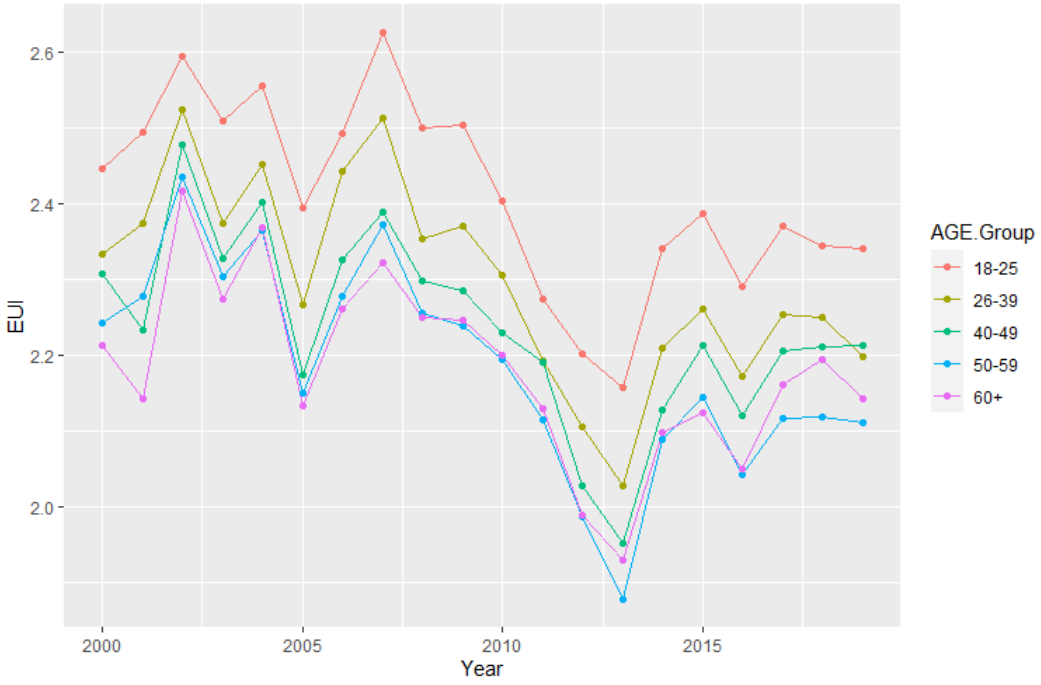

Figure 2 – Average expressed image towards EU (EUI) 2000-2019

Table 1 describes the EVS sample used within this paper. The sample's average age is 45 years. 54% of the sample are females and on average the sample's individuals completed their full-time education at the age of 18. 6% of the sample are unemployed, whereas 5% are unskilled. The sample's average income level ranks at 0.98, where the variable is coded as follow: 0 for low, 1 for medium and 2 for high income. With a scale ranging from 1 (=dissatisfied) to 10 (=satisfied) the average life satisfaction of the individuals of the sample is 7.07. 7% of individuals of the sample come from a parental background with financial problems, 3% come from a low educated and 6% from an unskilled parental household. Finally, 50% of individuals out of the EVS sample have experienced a recession at least once during their impressionable years, whereas the rest 50% have exclusively experienced positive economic growth during this period.

Table 2 illustrates the socio-economic characteristics of the EB sample. Here, the average age is 46 years. 55% of the sample are female. Moreover, on average the sample completed their full-time education at the age of 27 years. 7% of the sample are unemployed, whereas 3% are unskilled. 13% of the sample expressed that they have financial problems. 31% of the sample have identified themselves as part of the working class. From a scale ranging from 'Not at all satisfied'=0, 'Not very satisfied'=1, 'Fairly satisfied'=2, 'Very satisfied'=3, on average, the sample ranked its life satisfaction at a 1.95. Out of the individuals surveyed within the Eurobarometer, 49% experienced a recession during their impressionable years. Even more detailed descriptive statistics for both the EVS and EB survey data can be found in the Appendix.

Table 1 - EVS descriptive statistics

	Mean	Standard deviation
EU – sentiments		
CEU	1.47	0.84
EUFSS	4.84	3.03
EUFLJ	4.21	3.01
EUFNI	5.35	3.07
EUEN	5.04	2.85
Socio-Demographics		
Age	45.25	17.75
Female	0.54	0.50
Education	18.37	5.33
Unemployed	0.06	0.19
Unskilled	0.05	0.22
Income Level	0.98	0.79
Life Satisfaction	7.07	2.21
Parents Financial Problems	0.07	0.25
Parents Low Education	0.03	0.18
Parents Unskilled	0.06	0.24
Macroeconomic Conditions		
Recession 18-25	0.50	0.50

Table 2 - EB descriptive statistics

	Mean	Standard deviation
EU – sentiments		
EUI	2.22	0.92
EUM	1.47	0.69
EUMCB	0.68	0.47
EUPT	0.61	0.49
EUCT	0.60	0.49
TIEU	0.52	0.500
Socio-Demographics		
Age	46.41	16.63
Female	0.55	0.50
Education	26.59	23.12
Unemployed	0.07	0.26
Unskilled	0.030	0.18
Financial Problems	0.13	0.33
Working Class	0.31	0.46
Higher Class	0.01	0.07
Life Satisfaction	1.95	0.78
Experiences 18-25		
Recession 18-25	0.49	0.50

6. Empirical Results

6.1 European Values Study

The empirical results across the EVS baseline and advanced specification suggest that the macroeconomic environment experienced within the impressionable years indeed has a statistically significant long-term effect on the formation of an individual's EU-sentiments: positive macroeconomic conditions during the ages 18-25 create cohorts who on average hold more positive views and attitudes towards the EU, whereas recessions form cohorts who on average hold more negative sentiments towards the EU throughout their lives. The empirical results hereby suggest that variations in the experienced macroeconomic environment when young can partly explain differences in EU-sentiments. Similarly to Giuliano and Spilimbergo (2014), the robustness of these findings will be tested through the inclusion of additional age categories in the robustness checks, under chapter 7.

Besides individual background and socio-economic characteristics, the baseline specification illustrated in Table 3 controls for country-year interaction, as well as age dummy fixed effects. As mentioned under chapter 3.2 the explanatory variable "Recession 18-25" is equal to one for individuals that experienced a negative GDP growth at least once in their country during their ages 18-25 and zero across all individuals that experienced positive GDP growth in their EU member state during their ages 18-25. Column one illustrates that experiencing adverse economic conditions within the impressionable years "Recession 18-25" has a (highly) significant negative effect on the expressed confidence level of an individual towards the EU, labeled as *CEU*: The coefficient is negative at -0.047 percent points at a 0.01 significance level. The results showcase that being unemployed and coming from a parental household with financial problems (proxy for low income) also have a significant negative effect on the expressed confidence level of an individual towards the EU. Whereas education, high income and overall life satisfaction positively impact the asserted EU-confidence, as can be inferred from their positive and significant coefficients.

In order to enable a better assessment of the magnitude of these results, this paper will calculate beta coefficients. As emphasized by Giuliano and Spilimbergo (2014), beta coefficients represent estimates derived from an analysis carried out solely on independent variables, which have been standardized so that their variance is one. These coefficients express to how many standard deviations a dependent variable will change per standard deviation increase in the explanatory variable (Giuliano and Spilimbergo 2014). In terms of the baseline specification, a one standard deviation increase in the impressionable years shock measure is associated with a decrease of -0.017 standard deviations in the confidence in the EU *CEU* variable. To put this into context, the magnitude of this effect on the level of expressed confidence towards the EU is 0.63 times the impact of being unemployed and 0.77 times the impact of being unskilled. Moreover, it is equivalent to 0.26 times the effect of income and 0.27 times the effect of overall life satisfaction. The sizes of the coefficients hereby indicate clearly that the effect of experiencing a recession within one's impressionable year is not only statistically but likely also politically significant as political sentiments often shape actual voting behavior.

Table 3 column two highlights that experiencing a recession during the impressionable years has a negative long-lasting effect on the expressed fear of loss of social security, that an individual attributes to the EU. The explanatory variable "Recession 18-25" showcases a

negative coefficient of -0.145 percentage points on *EUFSS* at a 0.05 significance level. The negative coefficient is in line with the formulated hypothesis in chapter 4, as the answer-scale of expressed fears related to the EU ranges from one to ten, with one meaning that a person is very much afraid. Subsequently meaning that adverse economic conditions during the critical years of early adulthood enhance an individual's fears associated with the EU; in the case of *EUFSS*, that the EU will lead to loss of social security and stability. Expressed through beta coefficients, a one standard deviation increase in the impressionable years shock measure is associated with a decrease of -0.049 standard deviations in an individual's fear that the EU will lead to loss of social security, variable *EUFSS*. The magnitude of this effect is 0.21 times that of education, 0.23 times that of income and 0.27 times that of gender. Whereas it accounts up to 1.35 times that of having a low-income parental background.

Similarly to column two, results from column three suggest that experiencing a recession in midst of one's impressionable years enhances an individual's long-term socio-economic fears related to the EU, in this case that the EU will lead to loss of jobs. The key variable of interest "Recession 18-25" showcases a negative coefficient of -0.149 percentage points on *EUFLJ* at a 0.01 significance level, indicating that a person becomes on average more afraid about EU-induced job-loss (1-10 scale, with 1 meaning "very much afraid") whenever experiencing an adverse economic environment during the ages 18-25: a one standard deviation increase in the impressionable years shock measure is associated with a decrease of -0.038 standard deviations of the *EUFLJ* variable. To put the magnitude of this effect into perspective: The impact of experiencing economic shocks during the impressionable years on *EUFLJ* is 0.1 times that of education and 0.18 times that of income. Adverse macroeconomic conditions when young, on average, account to up to 0.67 times the effect of unemployment and 0.62 times the effect of coming from a parental background with financial problems. This once more emphasizes the fact that macroeconomic conditions experienced during the ages 18-25 play a statistically significant role in the formation of long-term sentiments and socio-economic fears towards the EU.

As can be seen under column four, the key variable of interest "Recession 18-25" has a negative coefficient on the outcome variable *EUFNI*, representing the expressed fear of an individual that the EU will lead to loss of national identity and culture. This suggests that experiencing a recession during the impressionable years on average enhances an individual's fear that the EU will result in loss of national identity and culture, in this case by -0.110 percentage points (1-10 scale, with 1 meaning "very much afraid") at a 0.1 significance level. Expressed as beta coefficient, a one standard deviation increase in the impressionable years shock measure is associated with a decrease in the *EUFNI* variable by -0.034 standard deviations. This compares to 0.15 times the effect of education and 0.24 times the effect of income. Moreover, it accounts to 0.43 times the effect of coming from a low educated parental household.

Finally, under column five, the results indicate that macroeconomic conditions under which an individual grows up in impact individuals' attitudes towards EU enlargement, which will persist throughout life: The explanatory variable "Recession 18-25" demonstrates a negative coefficient of -0.095 percentage points at a 0.05 significance level. With the EU enlargement *EUEN* variable answer scale ranging from 1- "has gone to far" to 10- "should go further", this suggests that recessions create cohorts who on average are more opposed towards EU enlargement, whereas positive economic growth seems to form cohorts who on average are more supportive in regards to EU enlargement. To better assess the magnitude of this effect: A one standard deviation increase in the impressionable years shock measure is associated

with a decrease in the *EUEN* variable by -0.016 standard deviations. This is equivalent to 0.1 times the impact of education and 0.14 times the impact of income. To this end, the results emphasize that macroeconomic environment in the critical years of early adulthood is not only statistically but likely also politically significant as sentiments often drive actual voting behavior in elections.

The results of the baseline specification from Table 3 remain robust across Table 4, which additionally to country, year and life-cycle fixed effects also includes and controls for cohort effects[2]. To this end, the empirical evidence is in line with the formulated hypotheses under chapter 4: Experiencing adverse economic conditions during years of great mental plasticity and susceptiveness towards external environment, the impressionable years, negatively affects and deteriorates the perception of the young towards the European Union, which will persist throughout their lives hereinafter. As can be seen within Table 3 and Table 4, this negative impact ranges across the multidimensionality of the measure from expressed confidence, over economic and socio-cultural fears linked to the Union, to stands towards its enlargement. Viewed in the context of existing evidence from Giuliano and Spilimbergo (2014) and Cotofan et al. (2020) the findings reiterate empirical evidence supporting the impressionable years hypothesis and suggesting that personal experiences within the impressionable years are relevant in shaping long-term political and economic sentiments. This paper highlights that this also applies to the formation of attitudes towards supranational institutions, in this case the European Union. Moreover, it finds that besides affecting fears of economic vulnerability macroeconomic conditions when young are also able to shape long-term individual socio-cultural fears linked to the EU and desired-scope of European integration.

[2] As mentioned under chapter 3.2 this paper conceptualizes cohort effects by grouping birthyears, which fall under the same decade.

Table 3 – EVS Baseline Specification

	Dependent variable				
	CEU	EUFSS	EUFLJ	EUFNI	EUEN
	(1)	(2)	(3)	(4)	(5)
Recession 18-25	-0.047***	-0.145**	-0.149***	-0.110*	-0.095*
	(0.009)	(0.045)	(0.044)	(0.047)	(0.043)
Age	-0.002***	0.004**	0.007***	-0.0005	-0.010***
	(0.0004)	(0.002)	(0.002)	(0.002)	(0.002)
Female	-0.021**	-0.348***	-0.290***	-0.181***	-0.102**
	(0.009)	(0.043)	(0.043)	(0.045)	(0.041)
Education	0.006***	0.049***	0.075***	0.041***	0.033***
	(0.001)	(0.004)	(0.004)	(0.004)	(0.004)
Unemployed	-0.039***	0.003	0.093	-0.123**	0.029
	(0.010)	(0.048)	(0.048)	(0.050)	(0.046)
Unskilled	-0.044				
	(0.028)				
Income Level	0.062***	0.274***	0.326***	0.164***	0.128***
	(0.006)	(0.030)	(0.029)	(0.031)	(0.028)
Parents Fin. Problems	-0.048***	-0.216***	-0.281***	-0.070	-0.097
	(0.017)	(0.062)	(0.061)	(0.065)	(0.060)
Parents Low Education	0.029	-0.125	-0.037	-0.310***	0.168**
	(0.024)	(0.086)	(0.085)	(0.089)	(0.083)
Parents Unskilled	-0.010	-0.142**	-0.304***	-0.074	-0.121**
	(0.016)	(0.056)	(0.056)	(0.058)	(0.054)
Life Satisfaction	0.034***	0.159***	0.106***	0.067***	0.030***
	(0.002)	(0.011)	(0.011)	(0.011)	(0.011)
Observations	31,113	18,263	18,378	18,340	17,511
R^2	0.050	0.060	0.080	0.030	0.060
Adjusted R^2	0.050	0.059	0.080	0.029	0.059

Note: Included FE: Age, year, country
*p<0.1; **p<0.05; ***p<0.01

Table 4 – EVS Specification with Cohort Effects

	Dependent variable:				
	CEU	EUFSS	EUFLJ	EUFNI	EUEN
	(1)	(2)	(3)	(4)	(5)
Recession 18-25	-0.035***	-0.109*	-0.118*	-0.142**	-0.104*
	(0.010)	(0.048)	(0.048)	(0.050)	(0.046)
Age	-0.005***	-0.004	0.006	-0.004	-0.023***
	(0.002)	(0.008)	(0.008)	(0.008)	(0.007)
Female	-0.016*	-0.336***	-0.286***	-0.195***	-0.095**
	(0.009)	(0.043)	(0.043)	(0.045)	(0.042)
Education	0.006***	0.049***	0.075***	0.041***	0.033***
	(0.001)	(0.004)	(0.004)	(0.004)	(0.004)
Unemployed	-0.016	0.068	0.107*	0.044	0.057
	(0.011)	(0.053)	(0.052)	(0.055)	(0.051)
Unskilled	-0.046				
	(0.028)				
Income Level	0.064***	0.280***	0.330***	0.157***	0.132***
	(0.006)	(0.030)	(0.029)	(0.031)	(0.028)
Parents Fin. Problems	-0.048***	-0.216***	-0.283***	-0.065	-0.102*
	(0.017)	(0.062)	(0.061)	(0.065)	(0.060)
Parents Low Education	0.034	-0.131	-0.038	-0.314***	0.171**
	(0.024)	(0.086)	(0.085)	(0.089)	(0.083)
Parents Unskilled	-0.008	-0.137**	-0.303***	-0.084	-0.119**
	(0.016)	(0.056)	(0.056)	(0.058)	(0.054)
Life Satisfaction	0.033***	0.157***	0.105***	0.071***	0.029***
	(0.002)	(0.011)	(0.011)	(0.011)	(0.011)
Observations	31,113	18,263	18,378	18,340	17,511
R^2	0.052	0.061	0.081	0.031	0.061
Adjusted R^2	0.051	0.060	0.080	0.030	0.060

Note: Included FE: Age, year, country, cohorts
*p<0.1; **p<0.05; ***p<0.01

6.2 Eurobarometer

The results from Table 5 are in line with the findings from the European Values Study dataset illustrated in chapter 6.1. They show that macroeconomic shocks experienced during the critical years of early adulthood shape individuals' long-term sentiments towards the EU: With individuals who witnessed positive economic growth during the ages 18-25 on average showcasing higher levels of support towards the EU, whereas conversely individuals who experienced economic recessions during this critical age period demonstrate more negative attitudes towards the EU. The coefficients of the explanatory variable indicating that an individual experienced a recession during his/her impressionable are all negative, reiterating the deteriorating effect of adverse economic conditions when young on the formation of sentiments towards the EU. Yet, the effect of experiencing recessions when young is only statistically significant on *EUI* and *TIEU*.

Within column one the growing up in a recession variable "Recession 18-25" showcases a negative coefficient on an individual's expressed image towards the EU (*EUI*). With *EUI* being constructed from 0-4 from "very negative" until "very positive", the coefficient suggests that experiencing adverse economic conditions during one's impressionable years on average lowers an individual's image towards the EU by -0.03 percentage points at a 0.01 significance level. The coefficients of the individual control variables show that education has a positive, whereas unemployment and having financial problems have a negative effect on expressed EU-image. The negative coefficient of "Giver" indicates that, on average, coming from an EU member state, which net pays more into the EU-Budget than it receives out from it, also deteriorates an individual's image towards the EU. Measured as beta coefficient, the key variable of interest "Recession 18-25" has a coefficient of -0.018. Where a one standard deviation increase in the impressionable years shock measure is associated with a decrease in image towards the EU (*EUI*) by -0.018 standard deviations. To put this into context, this is equivalent to 0.86 times the effect of unemployment, 0.6 times the effect of education and 0.26 times the effect of having financial problems. As highlighted in chapter 2, unemployment and education are some of the most relevant drivers of political and economic sentiment formation. The size of the effect of experiencing a recession during the impressionable years on asserted image towards the EU (*EUI*) is equivalent to up to 0.86 times the effect of unemployment and 0.6 times the effect of education. This therefore emphasizes that the impact on EU-sentiment formation of adverse macroeconomic conditions during early adulthood is large and that it is economically significant.

As can be inferred from column six in Table 5, macroeconomic conditions during the impressionable years also represent an important determinant for the formation of long-term trust levels towards EU institutions: The explanatory variable "Recession 18-25" has a negative coefficient on *TIEU* with -0.015 percentage points at a 0.01 confidence level. Similarly, also being unemployed, having financial problems and coming from a net EU-Budget "Giver" country, on average, has a negative effect on asserted trust towards EU institutions. Whereas high education and life satisfaction positively impact expressed trust. In terms of beta coefficients, a one standard deviation increase in the impressionable years shock measure is associated with a decrease in an individual's level of trust towards European institutions by -0.008 standard deviations. This equals to a third the effect of education, 0.22 times that of having financial problems and 1.14 times the effect of unemployment. This once more reiterates the weight and relevance macroeconomic conditions during the impressionable

years bear in terms of formation of long-term sentiments towards the EU. And that to this end the effect is not only statistically, but also politically significant as it is likely that sentiments are a key driver of actual Eurosceptic voting behavior.

The results remain robust across Table 6, which (as Table 4 with the EVS data) includes cohort effects additionally to time, country and age fixed effects utilized in Table 5. The findings support formulated hypotheses on the expected effect on *EUI* and *TIEU* from chapter 4. Interestingly, in Table 6 also the effect of experiencing a recession within the impressionable years on an individual's expressed trust towards the EU's executive body, the European Commission, becomes significant. The explanatory variable "Recession 18-25" showcases a negative -0.008 coefficient on *EUCT*, indicating the expressed trust towards the European Commission. To put the magnitude of this effect into perspective, this is equivalent to about a fifth of the effect of education and 0.36 times of the effect of being unemployed. The magnitude of the effect on *EUI*, *EUCT* and *TIEU* in regards to other important drivers of sentiment formation, as education and unemployment, reiterates that macroeconomic shocks experienced during the impressionable years have an un-negligible statistically and economically significant shaping effect on the formation of political EU-sentiments. This result is robust across two different datasets extending over different time periods across the inclusion of a rich set of individual socio-economic characteristics and fixed effects controls.

Table 5 - EB Baseline Specification

	Dependent variable:					
	EUI	EUM	EUMCB	EUPT	EUCT	TIEU
	(1)	(2)	(3)	(4)	(5)	(6)
Recession 18-25	-0.030***	-0.003	-0.008	-0.004	-0.006	-0.015***
	(0.005)	(0.010)	(0.009)	(0.004)	(0.004)	(0.004)
Age	-0.002***	0.0001	-0.001***	-0.0003**	-0.0004***	-0.001***
	(0.0002)	(0.0003)	(0.0003)	(0.0001)	(0.0001)	(0.0001)
Female	-0.017***	-0.034***	-0.013	0.007**	0.008**	-0.005
	(0.005)	(0.009)	(0.009)	(0.003)	(0.004)	(0.003)
Education	0.002***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.0001)	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
Unemployed	-0.070***	-0.073***	-0.022	-0.038***	-0.040***	-0.024***
	(0.009)	(0.018)	(0.019)	(0.006)	(0.006)	(0.006)
Unskilled	-0.012	-0.044	-0.065**	-0.010	-0.004	0.005
	(0.015)	(0.029)	(0.028)	(0.011)	(0.011)	(0.010)
Financial Problems	-0.201***	-0.127***	-0.105***	-0.102***	-0.104***	-0.088***
	(0.008)	(0.017)	(0.018)	(0.006)	(0.006)	(0.006)
Working Class	-0.143***	-0.134***	-0.114***	-0.095***	-0.098***	-0.075***
	(0.006)	(0.012)	(0.012)	(0.004)	(0.004)	(0.004)
Higher Class	0.148***	0.082	0.044	0.087***	0.069**	0.108***
	(0.035)	(0.056)	(0.062)	(0.028)	(0.029)	(0.028)
Life Satisfaction	0.241***	0.119***	0.092***	0.089***	0.094***	0.091***
	(0.004)	(0.007)	(0.007)	(0.003)	(0.003)	(0.003)
Giver	-0.050***	-0.159***	-0.189***	0.016**	0.022***	-0.017**
	(0.009)	(0.016)	(0.015)	(0.007)	(0.007)	(0.007)
Observations	136,255	16,250	8,697	75,402	72,716	78,559
R^2	0.093	0.072	0.089	0.084	0.098	0.082
Adjusted R^2	0.093	0.069	0.085	0.083	0.097	0.081

Note: Included FE: Age, year, country
*p<0.1; **p<0.05; ***p<0.01

Table 6 -EB Specification with Cohort Effects

	Dependent variable:					
	EUI	EUM	EUMCB	EUPT	EUCT	TIEU
	(1)	(2)	(3)	(4)	(5)	(6)
Recession 18-25	-0.016**	-0.005	-0.003	-0.002	-0.008*	-0.011**
	(0.005)	(0.010)	(0.010)	(0.004)	(0.004)	(0.004)
Age	-0.001	-0.001	-0.0001	-0.0002	-0.0001	-0.001
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Female	-0.017***	-0.035***	-0.013	0.007**	0.008**	-0.005
	(0.005)	(0.009)	(0.009)	(0.003)	(0.004)	(0.003)
Education	0.002***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.0001)	(0.0003)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
Unemployed	-0.068***	-0.072***	-0.020	-0.037***	-0.039***	-0.024***
	(0.009)	(0.018)	(0.019)	(0.006)	(0.006)	(0.006)
Unskilled	-0.010	-0.044	-0.063**	-0.010	-0.004	0.005
	(0.015)	(0.029)	(0.028)	(0.011)	(0.011)	(0.010)
Financial Problems	-0.202***	-0.127***	-0.105***	-0.103***	-0.104***	-0.088***
	(0.008)	(0.017)	(0.018)	(0.006)	(0.006)	(0.006)
Working Class	-0.143***	-0.134***	-0.114***	-0.095***	-0.098***	-0.076***
	(0.006)	(0.012)	(0.012)	(0.004)	(0.004)	(0.004)
Higher Class	0.151***	0.081	0.045	0.086***	0.068**	0.109***
	(0.035)	(0.056)	(0.062)	(0.028)	(0.029)	(0.028)
Life Satisfaction	0.241***	0.119***	0.092***	0.089***	0.094***	0.091***
	(0.004)	(0.007)	(0.007)	(0.003)	(0.003)	(0.003)
Giver	-0.048***	-0.159***	-0.190***	0.017**	0.022***	-0.016**
	(0.009)	(0.016)	(0.015)	(0.007)	(0.007)	(0.007)
Observations	136,255	16,250	8,697	75,402	72,716	78,559
R^2	0.094	0.072	0.089	0.084	0.098	0.082
Adjusted R^2	0.093	0.069	0.085	0.083	0.097	0.081

Note: Included FE: Age, year, country, cohorts
*p<0.1; **p<0.05; ***p<0.01

Evidence from Table 4 and Table 6 suggests that results found in Table 3 and Table 5, the baseline specifications, remain robust through the inclusion of cohort controls. This indicates that the experience of recessions during the impressionable years influences an individual's long-term formation of EU-sentiments: With cohorts who grew during recessions on average showcasing deteriorated sentiments towards the EU. To this end, results from Table 4 and

Table 6, emphasize that this deteriorated effect can be purely attributed to differences in macroeconomic conditions during the ages 18-25 and not to differences across other possible EU-sentiment drivers as life-cycle, country, cohort and year effects.

In the European context, these results bear special relevance and weight considering the current COVID-19 pandemic: In the second quarter of 2020 the average GDP of the European Union fell by – 11.7%, compared to the OECD average of -9.8% (OECD 2020). Economists predict that economic recovery will be slower and lower in the European Union compared to Western peers as the United States, Canada or the United Kingdom (OECD 2020). Also in comparison to the extent of the recession during the financial and sovereign-debt crisis, the adverse economic conditions in the European Union caused by the Coronavirus pandemic seem to be greater in scope according to economists (OECD 2020).

Based on the empirical evidence of this paper, it is feasible to assume that the severity of the current economic crisis within the EU will have significant repercussions for its political legitimacy: The established causal effect of this paper suggests that this recession will likely create cohorts, who are on average characterized by a deteriorated image and attitude towards the EU. As seen within this paper's results such a negative effect of macroeconomic conditions ranges across the entire multidimensionality of EU-sentiments: From overall image, confidence and trust towards the EU, to enhanced negative socio-economic and cultural associations with the EU, as fear of social security, job and national identity loss. The magnitude of the effect of macroeconomic conditions during the impressionable years on EU-sentiments is not only statistically, but also economically significant in the formation of political attitudes toward the EU: It accounts to up to 1.14 times the effect of unemployment on trust in European institutions (*TIEU*) and up to 0.71 times the effect of education on confidence towards the EU (*CEU*). Individual views and attitudes form the foundation of actual behavioral decisions. Deteriorated EU-sentiments hereby enhance the threat of Eurosceptic voting behavior, which threatens to undermine the EU's political legitimacy and the authority and effectiveness of EU-institutions. Due to the magnitude of the impact of adverse economic conditions during the impressionable years on the formation of EU-sentiments and its likely repercussions on Eurosceptic voting behavior, the effect should be taken seriously by policy-makers.

7. Robustness Checks

This chapter will undertake different robustness checks, in order to ensure that the just illustrated results from chapter 6 remain robust also when including additional controls. It will first add further macro shock-indicators as import, crime and inequality measures, as these, according to literature, represent a relevant shaping influence on the formation of political attitudes. Hereinafter, this paper will run its regression model with dummies across different age groups, to assure whether exclusively the macroeconomic conditions during the impressionable years affect the formation of an individual's sentiments towards the EU. Finally, it will compare recent and older survey period responses to assess whether the observed effect has become stronger as the EU has gained more institutional powers and competencies over the past years.

7.1 Additional macro controls

A potential concern, which has already been mentioned in chapter 3.2 is that macroeconomic shocks may not be the only regressor which showcases variation during the impressionable years within a given country. There may be other confounding factors and varying characteristics, which drive the formation of sentiments towards the EU. To control for such other confounding factors, the regression model will be re-run including measures on annual China import rates, inequality and crime, as according to the literature, they represent relevant and significant drivers of political sentiments.

An important driver for the formation of political sentiments which has been highlighted in recent literature is import competition and more notably import competition from China. It entails the outsourcing of local industries and jobs to China, which according to scholars bears the potential to significantly disrupt prevailing political sentiments related to the EU. Colantone and Stanig (2018) identified that import shocks from China had a statistically and politically highly significant shaping effect on actual anti-EU voting behavior in the Brexit referendum: The scholars found that regions most effected by import competition from China in the UK showcased a higher vote share for "Leave" in the Brexit Referendum (Colatone and Stanig 2018). These results indicate that import rates from China were one of the strongest drivers of anti-EU voting behavior[3]. These findings emphasize the relevance and weight import shocks from China carry on the formation of politico-economic sentiments also in relation to the EU. In terms of robustness checks it is therefore essential to check whether differences in EU-sentiments can indeed be attributed to differences in macroeconomic condition during the impressionable years, or whether they are driven by other differences in experiences of macroeconomic shocks as import shocks from China. To this end, this paper will extend the current model by including the control variable of annual China import rates from the World Integrated Trade Solution (WITS) database. Should the explanatory variable "Recession 18-25" turn out to be insignificant in the extended model, this would indicate that the result from chapter 6 were bias and driven by China-import shocks rather than by the regressor.

Inequality represents another factor which significantly shapes the formation of political attitudes according to literature. Different scholars suggest that excessive social inequality challenges the legitimacy of democratic institutions. Among others, Kuhn et al. (2014) have identified that inequality represents an important determinant of Euroscepticism. They find that an increase in within-country income inequality has a negative effect on citizens' attitudes towards not only national public institutions but also trans-national institutions. Moreover, they identify that changes in economic inequality have a positive effect on Euroscepticism, even after controlling for unemployment, inflation, and globalization (Kuhn, et al. 2014). This emphasizes that inequality represents an important causal determinant for EU-sentiment formation. Including this measure in the model, will therefore control for the fact that Eurosceptic sentiments are indeed driven by the regressor and not by shocks related to inequality. To this end, this paper will include Gini coefficient data from the World Bank within the model.

[3] This effect was significantly (seven times as large) greater than the effect of migration growth on the "Leave" vote share (Colatone and Stanig 2018). This is particularly interesting considering the immigration-focused narrative the "Leave" camp advocated on.

Another regional time-varying characteristic which could also be driving the formation of political sentiments and in particular attitudes towards the EU are crime rates. As highlighted by Cohen (2008), crime has a significant effect on subjective well-being and quality of life. The scholars Di Tella et al. (2008) assessed the relation between crime and ideological beliefs in the Latin America, finding that cohorts exposed to more crime showcase a larger disapproval of privatization and an enhanced perception that income is distributed unfairly. This emphasizes the relevance of crime as a driver for the formation of politico-economic attitudes of an individual. To this end, this paper will include country-specific annual crime rates from Eurostat, to control that the effect of the regressor on EU-sentiments is purely driven by experienced macroeconomic conditions during the impressionable years and not by country-variation in crime rates.

These new robustness checks will exclusively be run on the Eurobarometer dataset. The European Values Study dataset entails data from research waves in 1990, 1991, 1992, 1993, 1999, 2000, 2008 and 2009. Within the World Bank's "World Development Indicators" dataset, data on inequality captured according to the Gini index becomes sufficiently available in 2004. Data on annual crime rates from Eurostat is available from 2008 onwards. China import rates from the World Integrated Trade Solution (WITS) database conversely start being available in 2000. To this end, data on inequality, crime and imports from China is largely not available for the period covered under the EVS dataset. Therefore, the additional control variables will solely be added and run on the EB dataset. While limited to purely the EB dataset, this still creates valuable insights for this paper because, should the new results indicate that the inclusion of crime, import and inequality measures alters the findings from chapter 6, this would infer that the EB-evidence from chapter 6 (and therefore likely also the EVS-evidence) is not robust. These new results will clarify whether indeed differences in macroeconomic conditions when young, rather than other confounding factors and varying characteristics, are driving the deterioration of EU-sentiments.

Table 7 – EB Robustness Check Additional Controls

	Dependent Variable					
	EUI	EUM	EUMCB	EUPT	EUCT	TIEU
	(1)	(2)	(3)	(4)	(5)	(6)
Recession 18-25	-0.022***	-0.003	-0.005	-0.003	-0.006	-0.014***
	(0.005)	(0.011)	(0.013)	(0.004)	(0.004)	(0.004)
Age	-0.002***	0.0002	-0.002***	-0.0003**	-0.0004***	-0.001***
	(0.0002)	(0.0004)	(0.0005)	(0.0001)	(0.0001)	(0.0001)
Female	-0.016***	-0.039***	-0.013	0.006*	0.007*	-0.007*
	(0.005)	(0.010)	(0.013)	(0.004)	(0.004)	(0.004)
Education	0.002***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.0001)	(0.0003)	(0.0003)	(0.0001)	(0.0001)	(0.0001)
Unemployed	-0.065***	-0.061***	-0.013	-0.038***	-0.039***	-0.025***
	(0.009)	(0.019)	(0.026)	(0.006)	(0.007)	(0.006)
Unskilled	-0.016	-0.024	-0.021	-0.013	-0.006	0.001
	(0.016)	(0.033)	(0.040)	(0.011)	(0.011)	(0.011)
Fin. Problems	-0.204***	-0.115***	-0.117***	-0.102***	-0.104***	-0.088***
	(0.008)	(0.019)	(0.024)	(0.006)	(0.006)	(0.006)
Working Class	-0.140***	-0.106***	-0.130***	-0.094***	-0.097***	-0.074***
	(0.006)	(0.013)	(0.017)	(0.004)	(0.004)	(0.004)
Higher Class	0.161***	0.076	0.065	0.104***	0.088***	0.113***
	(0.037)	(0.061)	(0.096)	(0.030)	(0.030)	(0.029)
Life Satisfaction	0.252***	0.112***	0.099***	0.094***	0.098***	0.095***
	(0.004)	(0.008)	(0.010)	(0.003)	(0.003)	(0.003)
Giver	0.034***	-0.115***	-0.197***	0.049***	0.050***	0.010
	(0.010)	(0.020)	(0.026)	(0.007)	(0.007)	(0.007)
Import China	-0.001***	-0.001***	-0.001**	-0.001***	-0.001***	-0.001***
	(0.0001)	(0.0002)	(0.0003)	(0.0001)	(0.0001)	(0.0001)
Gini Coefficient	0.032***	0.009***	-0.002	0.009***	0.006***	0.007***
	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.001)
Crime	-0.035***	0.019	-0.061	0.018***	0.020***	0.024***
	(0.009)	(0.019)	(0.040)	(0.006)	(0.006)	(0.006)
Observations	120,080	12,019	4,646	69,936	67,335	71,528
R^2	0.102	0.068	0.098	0.090	0.103	0.088
Adjusted R^2	0.102	0.066	0.094	0.090	0.103	0.087

Note: Included FE: Age, year, country
*p<0.1; **p<0.05; ***p<0.01

The results from chapter 6 remain robust through the inclusion of different additional controls: Table 7 suggests that experiencing a recession during the impressionable years deteriorates an individual's long-term image and trust towards the EU. This can be induced by the fact that, as in chapter 6, the explanatory variable "Recession 18-25" showcases negative and statistically significant coefficients on *EUI* and *TIEU*. Respectively by -0.022 percentage points on *EUI* and by -0.014 percentage points on *TIEU*, both at a 0.01 significance level. Interestingly, Table 7 indicates that the Gini Coefficient has a positive coefficient on EU-sentiments. This suggests that if a surveyed individual comes from an EU member state with comparatively high inequality, this on average has a positive effect on individuals' EU-sentiments formation. This could be positively attributed to the Union's redistribution efforts to minimize income discrepancies between and within member states.

The variable "crime" showcases a negative coefficient of -0.035 percentage points, at a 0.01 significance level, on *EUI*. This suggests that a higher crime rate on average deteriorates individuals' image towards the EU. However, the variable illustrates positive significant coefficients on all trust outcome variables *EUPT*, *EUCT* and *TIEU*. This interestingly suggests that a higher crime rate positively affects average expressed trust in European institutions, the European Parliament and the European Commission. Lastly, the variable "Import Rate China" has negative coefficients on all EU-sentiments. This is in line with evidence indicating that higher import competition from China has contributed to increased Eurosceptic voting behavior on the margins of the Brexit referendum (Colatone and Stanig 2018).

To better capture the change of the effect of experiencing a recession during the impressionable years on *EUI* and *TIEU* through the addition of more control variables in the model, this paper will calculate new and compare these with old beta coefficients from chapter 6. When including Gini coefficients, crime and China import rates, a one standard deviation increase in the impressionable years shock measure is associated with a decrease in asserted image towards the EU (*EUI*) by -0.014 standard deviations. This accounts to 0.48 times the effect of education and to 0.67 times that of being unemployed. Moreover, the magnitude of this effect is equivalent to 0.18 times that of having financial problems. In chapter 6, the effect of experiencing a recession when young "Recession 18-25" on EU-image (*EUI*) translated into 0.86 times the effect of being unemployed, 0.6 times the effect of education and 0.25 times the effect of having financial problems. This emphasizes that the effect decreases a bit through the inclusion of additional controls. However, it still remains clearly statistically and economically significant in regards to the formation of political sentiments towards the EU.

A similar trend is observable across column six. Expressed in beta coefficients, a one standard deviation increase in the impressionable years shock measure is associated with a decrease in trust towards the European institutions (*TIEU*) by -0.007 standard deviations. In terms of magnitude, this is equivalent to 0.32 times the effect of education and to 0.78 times the effect of being unemployed. Moreover, it amounts to up to 0.2 times the effect of having financial problems. In comparison, in chapter 6 the effect was equivalent to 0.33 times the effect of education, 1.14 times the effect of being unemployed and 0.22 times the effect of having financial problems. This highlights that the effect changed a bit, but remained both statistically and economically significant. This once more emphasizes the fact that macroeconomic conditions when young represent a non-neglectable shaping driver in the long-term formation and deterioration of EU-sentiments. It moreover proves, that this effect is indeed driven by the regressor and not confounded or omitted by other political and economic sentiment drivers as inequality, crime and import competition.

7.2 Additional age range intervals

To check the robustness of the results of chapter 6 it is essential to compare the effect of recessions on EU-sentiment formation across different age groups. Do individuals regularly amend their views and tendencies towards the EU in response to changes in the macroeconomic context? Or, does this exclusively happen during a time of great mental plasticity, within the impressionable years? In order to test this, this section repeats the baseline model specification from chapter 6 among seven different age intervals. As with the "Recession 18-25" variable, a dummy variable is created indicating whether an individual experienced a recession at least once during a given age range. These intervals are grouped as 26-30, 31-35, 36-40, 41-45, 46-50, 51-55 and 56-60. This section will run the EVS and EB baseline specification using subsamples for each age group, as done by Giuliano and Spilimbergo (2014). Results using a single regression specification with all age category dummies rather than subsamples, can be found within the Appendix. The findings of the two approaches indicate the same result to chapter 6: that impressionable years indeed hold special relevance in the formation of long-term politico-economic attitudes and beliefs towards the EU. Moreover, they suggest that experiencing a recession during the age period of 26-30, 31-35, 36-40, 41-45, 46-50, 51-55 and 56-60 does not affect EU-sentiments, as seemingly adverse conditions after the impressionable years, on average, mostly do not prompt individuals to significantly amend their attitudes towards the EU.

7.2.1 European Values Study

Table 8 showcases the results for running the regression model with different dummy variables, which indicate whether an individual experienced a recession during a given age period. As can be seen through the coefficients, apart from minor exceptions[4], the results from chapter 6 remain robust: Experiencing adverse economic conditions in the form of negative GDP growth during age intervals other than the impressionable years does not have a statistically significant shaping effect on the formation of long-term sentiments towards the EU. These results suggest that individuals do not regularly amend their sentiments towards the EU whenever macroeconomic conditions change. Rather that this is particularly the case during the impressionable years: Where as seen within chapter 6, experiencing a recession during the age interval 18-25 has a statistically and economically significant negative effect on the formation of attitudes towards the EU, which will remain unchanged throughout life hereinafter. This finding supports the impressionable years hypothesis, emphasizing how individuals during the ages 18-25 are particularly susceptible towards their external environment and how this age period is particularly relevant for the formation of long-term political and economic sentiments.

[4] Giuliano and Spilimbergo (2014) also find significant effects of experiencing economic recessions on formation of political and economic sentiments across age groups other than the impressionable years. Specifically, they identify a significant effect across the 26-33, 42-49 and 50-57 age range. The significance becomes smaller, the higher the age range. To this end, the authors argue that the declining effect of experiencing a recession on political sentiments and behavior is in line with the impressionable years hypothesis, which states that the years 18-25 are the most relevant for the formation of political sentiments and behavior. The authors state that the effect fades over time though not entirely.

Table 8 – EVS Age Range Robustness Check

	Dependent Variable				
	CEU	EUFSS	EUFLJ	EUFNI	EUEN
	(1)	(2)	(3)	(4)	(5)
Recession 26-30	-0.007	-0.034	-0.074	0.0004	-0.037
	(0.009)	(0.045)	(0.044)	(0.047)	(0.044)
Observations	34,513	20,085	20,216	20,171	19,178
R^2	0.100	0.108	0.141	0.052	0.083
Recession 31-35	-0.001	0.002	0.027	0.008	-0.073
	(0.009)	(0.045)	(0.044)	(0.047)	(0.043)
Observations	37,237	21,297	21,432	21,389	20,241
R^2	0.098	0.111	0.142	0.052	0.086
Recession 36-40	-0.026**	-0.001	-0.047	-0.028	-0.051
	(0.009)	(0.045)	(0.043)	(0.047)	(0.044)
Observations	38,157	20,927	21,041	21,013	19,768
R^2	0.096	0.117	0.146	0.055	0.090
Recession 41-45	0.005	-0.066	-0.033	0.040	-0.080
	(0.009)	(0.046)	(0.044)	(0.048)	(0.045)
Observations	(0.009)	(0.046)	(0.044)	(0.048)	(0.045)
R^2	0.094	0.120	0.147	0.058	0.093
Recession 46-50	-0.008	-0.029	-0.105*	-0.016	-0.015
	(0.010)	(0.049)	(0.047)	(0.051)	(0.048)
Observations	34,776	18,565	18,690	18,674	17,413
R^2	0.093	0.125	0.148	0.059	0.095
Recession 51-55	0.001	0.023	-0.001	-0.070	-0.001
	(0.010)	(0.051)	(0.049)	(0.053)	(0.050)
Observations	31,665	16,912	17,034	17,022	15,786
R^2	0.093	0.125	0.148	0.059	0.100
Recession 56-60	-0.019	0.019	-0.006	0.024	0.027
	(0.011)	(0.057)	(0.055)	(0.059)	(0.056)
Observations	28,902	15,437	15,553	15,543	14,373
R^2	0.093	0.126	0.145	0.059	0.102

Note: Included FE: Age, year, country, cohorts
*p<0.1; **p<0.05; ***p<0.01

7.2.2 Eurobarometer

The results from Table 9 from the Eurobarometer dataset suggest similar evidence to Table 8 from the European Values Study dataset: dummy variables indicating whether an individual experienced a recession during a given age period do not possess – apart from minor exceptions - significant coefficients. This suggests that experiencing a recession during the age period of 26-30, 31-35, 36-40, 41-45, 46-50, 51-55 and 56-60 does not significantly affect EU-sentiments, as seemingly adverse economic conditions after the impressionable years on average do not prompt individuals to significantly amend their attitudes towards the EU. Evidence from Table 9 indicates that impressionable years indeed hold special relevance in the formation of long-term politico-economic attitudes and beliefs, while the effect of macroeconomic environment on the formation of political sentiments towards the EU declines after the ages 18-25. The results are in line with the robustness results from Giuliano and Spilimbergo (2014) suggesting that individuals are especially susceptible to their macroeconomic environment during their impressionable years, while the effect of macroeconomic conditions on political sentiment formation declines hereinafter. In combination with evidence from chapter 6.2 these robustness results suggest that periods of positive economic growth during the impressionable years, on average, create cohorts with a more positive image and greater levels of trust towards European institutions and executive bodies. Whereas recessions, on average, contrarily generate cohorts with a more negative image and deteriorated trust towards the EU.

Table 9 – EB Age Range Robustness Check

	Dependent Variable					
	EUI	EUM	EUMCB	EUPT	EUCT	TIEU
	(1)	(2)	(3)	(4)	(5)	(6)
Recession 26-30	-0.006	-0.001	-0.001	0.010*	0.010*	0.003
	(0.006)	(0.011)	(0.011)	(0.004)	(0.004)	(0.004)
Observations	124,572	14,718	7,775	69,640	67,321	72,341
R^2	0.117	0.105	0.110	0.106	0.120	0.100
Recession 31-35	0.004	0.002	0.009	0.002	-0.001	0.005
	(0.006)	(0.011)	(0.012)	(0.004)	(0.004)	(0.004)
Observations	119,697	14,028	7,351	67,109	64,957	69,622
R^2	0.116	0.109	0.113	0.105	0.118	0.100
Recession 36-40	0.001	0.010	0.011	0.0004	0.003	0.007
	(0.006)	(0.012)	(0.012)	(0.004)	(0.004)	(0.004)
Observations	113,923	13,203	6,796	64,169	62,124	66,505
R^2	0.115	0.115	0.113	0.102	0.115	0.096
Recession 41-45	0.012	-0.011	0.001	0.006	0.0005	0.006
	(0.006)	(0.012)	(0.012)	(0.004)	(0.004)	(0.004)
Observations	105,682	12,223	6,143	59,755	57,820	61,855
R^2	0.115	0.119	0.122	0.101	0.112	0.092
Recession 46-50	-0.008	0.010	0.002	-0.009	-0.007	-0.013**
	(0.007)	(0.013)	(0.013)	(0.005)	(0.005)	(0.005)
Observations	96,587	11,251	5,589	54,463	52,627	56,304
R^2	0.114	0.118	0.122	0.100	0.112	0.092
Recession 51-55	-0.024***	-0.012	0.004	-0.006	-0.009	-0.008
	(0.007)	(0.014)	(0.015)	(0.005)	(0.005)	(0.005)
Observations	85,934	9,949	4,847	48,337	46,628	49,928
R^2	0.111	0.124	0.121	0.101	0.111	0.093
Recession 56-60	-0.021**	-0.014	-0.039*	-0.003	-0.008	-0.001
	(0.008)	(0.015)	(0.017)	(0.006)	(0.006)	(0.006)
Observations	73,797	8,506	4,077	41,307	39,729	42,766
R^2	0.110	0.128	0.136	0.102	0.114	0.096

Note: Included FE: Age, year, country, cohorts
*p<0.1; **p<0.05; ***p<0.01

7.3 Development of the effect over time

Since its foundation as 'European Economic Community' (EEC) in 1957, the European Union has grown, evolved and gained new competencies and powers. Many of these competencies and powers were given to the Union by its member states through the 'Treaty of European Union', also known as the Maastricht Treaty (entered into force in 1993), the Treaty of Nice (entered into force in 2003) and the Treaty of Lisbon (entered into force in 2009)[5]. The competencies and powers instilled by these treaties have ultimately given the EU more influence on its citizens' lives. This section will therefore create time period subsamples, in order to assess whether the effect of experiencing recessions during the impressionable years on EU-sentiment formation has become stronger in more recent years, now that the EU has greater competencies, powers and influence. To this end, using Eurobarometer data, this paper will construct subsamples for the years 2000-2004, 2005-2009, 2010-2014 and 2015-2019, and will run the baseline regression model on each of these subsamples. It will utilize year ranges instead of comparing single years individually, to control for year fixed effects and hereby minimize the error that results are driven by year specific trends. The regression will exclusively be run on EB data, as EVS data does not contain annual survey waves for the entire period ranging from 1990 until 2008.

In Table 10 column one and two, representing the year ranges 2000-2004 and 2005-2009, the explanatory variable "Recession 18-25" showcases negative coefficients of -0.004 and -0.006 percentage points on *EUI* at a 0.1 significance level. To better understand the magnitude of this effect in terms of beta coefficient: in 2000-2004, a one standard deviation increase in the experienced impressionable years shock measure translates into a decrease of -0.001 standard deviations in the average ranking of image towards the EU, *EUI*. This effect amounts up to 0.02 times that of education, 0.06 times that of being unemployed and 0.04 times that of being unskilled. In 2005-2009, on the other hand a one standard deviation increase in the experienced impressionable years shock measure is associated with a decrease of -0.002 standard deviations in average asserted EU-image. The effect is equivalent to 0.04 times the effect of education, 0.08 times that of being unemployed and 0.11 times that of being unskilled.

Likewise in column three and four, capturing the period from 2010-2014 and 2015-2019 respectively, the explanatory variable "Recession 18-25" also has negative and statistically significant coefficients on *EUI*. Yet comparatively to column one and two, the coefficients have a p-value smaller than 0.01 and hereby entail a higher significance level compared to the years 2000-2004 and 2005-2009. During 2010-2014 experiencing adverse macroeconomic conditions during the impressionable years "Recession 18-25" indicates a deteriorating effect on average expressed image towards the EU, *EUI*, of -0.026 percentage points. Expressed as beta coefficient, a one standards deviation increase in the impressionable years shock measure translates into a decrease in average expressed EU-image by -0.014 standard deviations. This is equivalent to 0.37 times the effect of education, 0.45 times the effect of being unemployed and 1.08 times the effect of being unskilled. Finally, in 2015-2019, the most recent time period captured by the Eurobarometer survey data, growing up in a recession "Recession 18-25" has

[5] The Treaty of Maastricht foresaw the introduction of a political union (citizenship, common foreign and internal affairs policy (European Union, n.d.). The Treaty of Nice reformed the EU institutions, changing the composition of the Commission and redefined the voting system in the Council. Whereas the Treaty of Lisbon among others gave the European Parliament stronger powers (European Union, n.d.).

a highly significant deteriorating effect of -0.029 percentage points on average asserted image towards the EU, *EUI*. In terms of beta coefficients, a one standard deviation increase in the impressionable years shock measure is associated with a decrease of -0.015 standard deviations in EU-image. This conversely corresponds to 0.35 times the effect of education, 0.6 times the effect of being unemployed and 0.65 times the effect of being unskilled.

Comparing the coefficients, the significance levels, and the beta coefficients across the different year ranges, it becomes evident that the deteriorating effect of experiencing a recession when young on individuals' formation of EU-sentiments has gotten stronger over time. Controlling for life-cycle, country and year effects, these results suggest that the magnitude of the effect has increased from 2000-2019 as the EU has gained more competencies, powers and hereby enhanced influence on its citizens' lives.

Table 10 – EB EUI Robustness Check Over Time

	Dependent variable:			
	EUI			
	2000-2004	2005-2009	2011-2014	2015-2019
Recession 18-25	-0.004*	-0.006*	-0.026***	-0.029***
	(0.010)	(0.009)	(0.006)	(0.008)
Age	-0.002***	-0.002***	-0.001***	-0.002***
	(0.0004)	(0.0004)	(0.0002)	(0.0003)
Female	-0.088***	-0.081***	-0.043***	0.010
	(0.010)	(0.008)	(0.006)	(0.007)
Education	0.002***	0.002***	0.002***	0.002***
	(0.0002)	(0.0002)	(0.0001)	(0.0002)
Unemployed	-0.059***	-0.106***	-0.106***	-0.102***
	(0.020)	(0.017)	(0.010)	(0.015)
Unskilled	-0.113***	-0.116***	-0.079***	-0.139***
	(0.022)	(0.023)	(0.017)	(0.022)
Life Satisfaction	0.215***	0.232***	0.272***	0.265***
	(0.007)	(0.006)	(0.004)	(0.006)
Observations	33,697	47,252	95,564	56,795
R^2	0.046	0.050	0.070	0.053
Adjusted R^2	0.045	0.049	0.069	0.052
Note: Included FE: Age, year, country			*p<0.1; **p<0.05; ***p<0.01	

Table 11 indicates similar results to Table 10: the deteriorating effect of experiencing a recession during the impressionable years on EU-trust levels, *TIEU*, becomes stronger over time. The coefficient of the explanatory variable "Recession 18-25" on *TIEU* is -0.018 percentage points in 2000-2004 and -0.002 percentage points in 2005-2009. Both coefficients are statistically significant at a 0.1 significance level. Expressed in beta coefficients, in 2000-2004, a one standard deviation increase in the impressionable years shock measure is associated with

a decrease in expressed trust towards the EU institutions, *TIEU*, by -0.009 standards deviations. To put the magnitude of this effect into perspective, this is equivalent to 0.3 times the effect of education and equally as large as the effect of being unskilled. On the contrary, in 2005-2009, a one standard deviation increase in the impressionable years shock measure translates into a decrease in average institutional EU-trust levels by -0.001 standard deviations. This accounts to up to 0.04 times the effect of education and 0.07 times the effect of being unemployed and unskilled.

In 2010-2014 and 2015-2019 growing up in a recession on average deteriorates expressed trust towards EU institutions by -0.009 and -0.023 percentage points, respectively at a 0.1 and 0.05 significance level. Expressed in beta coefficients, a one standard deviation increase in the impressionable years shock measure is associated with a decrease in average expressed trust in European institutions, *TIEU*, by -0.005 standard deviations in 2010-2014 and by -0.012 standard deviations in 2015-2019. In the period of 2010-2014 the magnitude of this effect compares to around 0.2 times the effect of education, 0.5 times the effect of unemployment and 0.71 times the effect of being unskilled. Whereas, in 2015-2019, the most recent period captured by the Eurobarometer, the effect is equivalent to 0.44 times that of education, 1.09 times that of unemployment and 1.2 times that of being unskilled.

Table 11 – EB TIEU Robustness Check Over Time

	Dependent variable:			
	TIEU			
	2000-2004	2005-2009	2011-2014	2015-2019
Recession 18-25	-0.018*	-0.002*	-0.009*	-0.023**
	(0.008)	(0.005)	(0.004)	(0.008)
Age	-0.002***	-0.001***	-0.001***	-0.001***
	(0.0003)	(0.0002)	(0.0001)	(0.0003)
Female	-0.004	-0.017***	-0.012***	0.015**
	(0.008)	(0.005)	(0.003)	(0.007)
Education	0.001***	0.001***	0.001***	0.001***
	(0.0002)	(0.0001)	(0.0001)	(0.0002)
Unemployed	-0.028*	-0.061***	-0.034***	-0.045***
	(0.015)	(0.010)	(0.006)	(0.014)
Unskilled	-0.042**	-0.086***	-0.041***	-0.062***
	(0.018)	(0.013)	(0.011)	(0.023)
Life Satisfaction	0.088***	0.109***	0.112***	0.114***
	(0.006)	(0.004)	(0.003)	(0.006)
Observations	15,363	43,079	73,469	17,648
R^2	0.034	0.049	0.053	0.042
Adjusted R^2	0.031	0.048	0.053	0.039
Note: Included FE: Age, year, country			*p<0.1; **p<0.05; ***p<0.01	

The empirical results of this subchapter have emphasized how the deteriorating effect of experiencing a recession during the impressionable years on average asserted image and trust levels towards the EU has increased over the previous years as the EU has received more power and influence. This finding is particularly interesting in light of the current coronavirus pandemic. On the margins of the pandemic, the executive body of the Union, the EU Commission, holds the centralized power to source vaccines for each of its member states, the most important tool to fight the coronavirus. Moreover, in May 2020 the Commission proposed the historically largest stimulus package "Next Generation EU" designated to boost recovery and rebuild a post-Covid greener, more digital and more resilient Europe (European Commission n.d.). It holds the competency and power to reject national recovery plans on what and how to spend the funds from the recovery package (European Commission n.d.). These two factors highlight new relevant competencies the EU and its executive body have in light of the current coronavirus pandemic. Results from this subchapter suggest that the effect found in this paper, that growing up in a recession deteriorates individuals' long-term sentiments towards the EU, becomes stronger once the EU gains enhanced competencies, powers and influence. The current context entailing increased centralized powers by the EU Commission therefore makes it feasible to assume that the observed deteriorating effect of experiencing a recession during the impressionable years on EU-sentiments is set to become even stronger.

8. Conclusion

Negative sentiments towards the EU place an increasing threat to its legitimacy and effectiveness. To this end, this paper has sought to better understand possible drivers of the deterioration of EU attitudes. It has placed special relevance on understanding whether EU-sentiments and EU-fears are exogenous. Or, if rather specific macroeconomic conditions play a critical role in the formation and adaptation of lifelong sentiments towards the EU. It has assessed whether differences in EU-sentiments can (partly) be attributed to variations in macroeconomic conditions experienced during the critical and formative years of early adulthood, the impressionable years. This paper has found that indeed these play a statistically and economically significant role in shaping an individual's long-term multidimensional attitudes and fears towards the EU. It has identified that individuals who grew up in a recession on average showcase more negative sentiments towards the EU, whereas cohorts who experienced positive economic growth during their critical years of early adulthood express more positive attitudes towards the EU. These findings are supported by the evidence of two different datasets, the European Values Study and the Eurobarometer. They are robust across the inclusion of individual characteristics and endowments, as well as across a rich set of life-cycle, country, year, and cohort controls.

Across the European Values Study data, this paper identified that experiencing a recession during the impressionable years deteriorates individuals' long-term confidence-levels towards the EU. Moreover, cohorts who lived through a recession are significantly more afraid that the EU will lead to loss of social security, jobs and national identity. They also showcase a statistically significant higher belief that EU enlargement has gone too far. It has found similar evidence across Eurobarometer data, suggesting that recessions experienced during the critical years of early adulthood deteriorate an individual's lifelong image towards the EU, as well as its trust-levels towards EU institutions. These results from both EVS and EB data hereby reiterate that macroeconomic shocks experienced during the impressionable years

represent a statistically and economically significant shaping driver of long-term sentiments towards the EU. And moreover as seen in chapter 7.3, that this effect becomes stronger as the EU obtains more competencies, powers and influence over its citizen's lives.

The empirical evidence of this paper hereby indicates that differences in macroeconomic environment when young can partly explain variation and deterioration in EU-sentiments. This bears special relevance in the current climate. On margins of the coronavirus pandemic, the EU has witnessed a significant economic downturn, which in severity - captured by GDP growth - even surpassed the recent financial crisis. Based on this paper's results, it is plausible to assume that this recession will shape a generation of cohorts, whom on average have a deteriorated image and perception of the EU. Individual sentiments form the foundation for actual behavior. It therefore seems feasible to assume that the deteriorating effect of experiencing recessions during the impressionable years on EU-sentiment formation could be driving enhanced Eurosceptic voting. To this end, this effect should be taken seriously by policy-makers, as it bears a serious threat to undermine the Union's legitimacy and trust across the very generation which will be driving the economic recovery after the pandemic.

Useful policy advice might be to ensure that a substantial amount of government recovery funds is specifically targeted to reduce the recession-induced harm on young adults. In this regard scholars have highlighted the lack of empirical evidence as foundation for policy makers to identify effective policies to reduce long-term implications of recessions on affected young individuals (Bell and Blanchflower 2011). This highlights the need for policy makers to invest in research on effective policy instruments, among others, on how to improve education, labor market access, after-crisis wage bargaining power and intergenerational mobility, especially among disadvantaged young adults. As seen within this paper's results, education, labor market position, income and socio-economic position have a large shaping impact on the formation of an individual's sentiments towards the EU. Policies which enhance these factors, especially among disadvantaged young adults, could hereby contribute to significantly reduce the deteriorating effect of experiencing a recession during the impressionable years on attitudes towards the EU.

The empirical validity of this paper could be improved if, especially the EVS panel dataset, could cover a longer time frame. It would be valuable if it were to obtain data from more survey waves covering the variables/questions on EU-fears linked to loss of social security (*EUFSS*), jobs (*EUFLJ*) and national identity (*EUFNI*), as well as the variable/question on EU enlargement (*EUEN*), as these currently exclusively cover the timeframe of two years, 2008 and 2009. Another factor is that the evidence of this paper focuses on data on overall politico-economic and cultural sentiments towards the EU. While subjective attitudes and fears form the foundation of an individual's actions, they do not showcase actual political behavior as, for example, voting demeanor within elections. To this end, in regard to future research, it would be interesting to measure whether differences in voting preferences in, for example, European elections or the Brexit referendum, could partly be attributed to and explained by differences in macroeconomic conditions during early adulthood. For example, whether cohorts whom experienced adverse economic conditions during early adulthood are on average more prone to vote anti-EU parties.

References

Alesina, Alberto, and Nicola Fuchs-Schündeln. "Goodbye Lenin (or Not?): The Effect of Communism on People's Preferences." *American Economic Review 97 (4)*, 2007: 1507-1528.

Algan, Yann, Sergei Guriev, Elias Papaioannou, and Evgenia Passari. "The European Trust Crisis and the Rise of Populism." *Brooking's Papers on Economic Activity*, 2017.

Anderson, Christopher J., and Karl C. Kaltenthaler. "The Dynamics of Public Opinion toward the European Integration, 1973-93." *European Jounral of International Relations*, 1996: 175-199.

Baldwin, Richard, and Charles Wyplosz. *The Economics of European Integration.* 2004.

Bell, David N. F., and David G. Blanchflower. "Young people and the Great Recession." *Oxford Review of Economic Policy*, 2011: 241-267.

Boomgaarden, Hajo G:, Adreas R.T. Schuck, Matthijs Elenbaas, and Claes H. de Vreese. "Mapping EU Attitudes: Conceptual and Empirical Dimensions of Euroscepticism and EU Support." *European Union Politics*, 2011: 241-266.

Breuss, Fritz, Peter Egger, and Michael Pfaffermayr. "Structural funds, EU enlargement, and the redistribution of FDI in Europe." *Rev WOrld Econom*, 2010: 469-494.

Cohen, Mark A. "The Effect of Crime on Life Satisfaction." *Journal for Legal Studies*, 2008: 325-353.

Colantone, Italo, and Piero Stanig. "The Trade Origins of Economic Nationalism: Import Competition and Voting Behavior in Western Europe." *American Journal of Political Science* , 2018: 936-953.

Colatone, I., and P. Stanig. "Global Competition and Brexit." *American Political Sience Review 112 (2)*, 2018: 201-218.

Corneo, Giacomo, and Frank Neher. "Income inequality and self-reported values." *The Journal of Economic Inequality*, 2014: 49-71.

Cotofan, Maria, Lea Cassar, Robert Dur, and Stephan Meier. "Macroeconomic Conditions When Young Shape Job Preferences for Life." *IZA Institute for Labor Economics Discussion Paper Series No. 13123*, 2020.

Cutler, N.E. "Aging and Generations in Politics: The Conflict of Explanations and Inference." In *Political Opinion and Political Attitudes*, by A.R. Wilcox, 440-462. New York: Wiley, 1974.

De Wilde, Pieter, and Hans-Jörg Trenz. "Denouncing European integration: Euroscepticism as policy contestation. ." *European Journal of Social Theory*, 2012: 537-554.

Dennis, J. *The Socialization of Politics: A Reader.* New York: Wiley, 1973.

Di Tella, R., S.F. Galiani, and R. Schargrodsky. "The Formation of Beliefs: Evidence from the Allocation of Land Titles to Squatters." *Quarterly Journal of Economics* , 2007: 209-241.

Dinas, E. "The Formation of Voting Habits." *Journal of Elections. Public Opinion and Parties*, 2012: 431-456.

—. "Opening "Openness to Change": Political Events and Increased Sensitivity of Young Adults." *Political Research Quarterly*, 2013: 868-882.

Dippel, Christian, Robert Gold, and Stephan Heblich. "Globalization and Its (Dis)Cintent: Trade Shocks and Voting Behavior." *Working paper*, 2016.

Down, I., and C.J. Wilson. "A Rising Generation of Europeans? Life-Cycle and Cohort Effects on Support for "Europe"." *European Journal of Political Research*, 2013: 431-456.

Dustmann, Christian, et al. "Europe's Trust Deficit. Causes and Remedies." *Monitoring International Integration CEPR Press*, 2017.

Easton, D., and J. Dennis. *Children in the Political System: Origins of Political Legitimacy.* New York: McGraw-Hill, 1969.

Eurobarometer. *GESIS - EU Image: Positive/Negative.* 2019. https://www.gesis.org/en/eurobarometer-data-service/search-data-access/eb-trends-trend-files/list-of-trends/eu-image (accessed May 14, 2021).

—. *GESIS - EU Membership: Benefit.* 2019. https://www.gesis.org/en/eurobarometer-data-service/search-data-access/eb-trends-trend-files/list-of-trends/membership-benefit (accessed May 14, 2021).

—. *GESIS - Main Eurobarometer Trends EU-Topics.* 2019. https://www.gesis.org/en/eurobarometer-data-service/search-data-access/eb-trends-trend-files/list-of-trends (accessed May 14, 2021).

European Commission. *Recovery plan for Europe.* n.d. https://ec.europa.eu/info/strategy/recovery-plan-europe_en#the-largest-stimulus-package-ever (accessed May 18, 2021).

European Values Study . "EVS 1981 - 2008 Variable Report." *European Values Study and GESIS Data Archive for the Social Sciences*, 2015: 1460.

European Values Study. *European Values Study Longitudinal Data File 1981-2008 (EVS 1981-2008) GESIS .* 2020. https://search.gesis.org/research_data/ZA4804 (accessed May 15, 2021).

Frieden, Jeffry. "The Crisis, the Public, and the Future of European Integration." In *After the Crisis: Reform, Recovery, and Growth in Europe*, by Francesco Caselli, 1-45. Oxford University Press, 2016.

Fuchs-Schündeln, Nicola, and Matthias Schündeln. "On the endogeneity of political preferences: Evidence from individual experience with democracy ." *Science*, 2015: 1145-1148.

Garry, John, and James Tilley. "The Macroeconomic Factors Conditioning the Impact of Identity on Attitudes towards the EU." *European Union Politics* , 2009: 361-379.

Giddens, Anthony. "Risiko, Vertrauen und Reflexivität." In *Reflexive Modernisierung*, by U. Beck, A. Giddens and S. Lash. Suhrkamp, 1996.

Giuliano, Paola, and Antonio Spilimbergo. "Growing up in a Recession." *Review of Economic Studies*, 2014: 787-817.

Golder, Matt. "Far Right Parties in Europe." *Annual Review of Political Science*, 2016: 477-497.

Gomez, Raul. "The Economy Strikes Back: Support for the EU during the Great Recession." *Journal of Common Market Studies*, 2015: 577-592.

Greenstein, F.I. *Children and Politics.* New Haven, CN: Yale University Press, 1965.

Guiso, Luigi, Helios Herrera, Massimo Morelli, and Tommaso Sonno. *Demand and Supply of Populism.* 2017.

Hess, R.D., and J.V. Torney. *The Development of Political Attitudes in Children.* Chicago: Aldine, 1967.

Hobolt, Sara B., de Vries, Catherine E. "Public Support for European Integration." *Annual Review of Political Science*, 2016.

Jaeger, Hans. "Generations in history: Reflections on a controversial concept." *History and Theory*, 1985: 273-292.

Kaltenthaler, K., C.J. Anderson, and W.J. Miller. "Accountability and Independent Central Banks: Europeans and Distrust of the European Central Bank." *Journal of Common Market Studies*, 2010: 1261-1281.

Kosfeld, M., M. Heinrichs, P.J. Zak, U. Fischbacher, and E. Fehr. "Oxytocin increases trust in humans." *Nature*, 2005: 673-676.

Krosnick, Jon A., and Duane F. Alwin. "Aging and susceptibility to attitude change." *Journal of Personality and Social Psychology 57 (3)*, 1989: 416.

Kuhn, Theresa, Erika van Elsas, Hakhverdian, and Wouter van der Brug. "An even wider gap in an ever closer union: Rising inequalities and euroscepticism in 12 West European democracies, 1975-2009." *Socio-Economic Review*, 2014: 27-45.

Laudenbach, Christine, Ulrike Malmendier, and Alexandra Niessen-Ruenzi. "Emotional tagging and belief formation - The long-lasting effect of experiencing communism." *American Economic Review*, 2019: 567-571.

Lechler, Marie. *Employment Shocks and anti-EU Sentiments.* Munich: University of Munich Department of Eocnomics, 2018.

Loveless, Matthew, and Robert Rohrschneider. "Public Perceptions of the EU as a System of Governance." *Living Reviews in European Governance*, 2011: 5-28.

Malmendier, Ulrike, and Stefam Nagel. "Depression babes: do macroeconomic experiences affect risk taking?" *The Quarterly Journal of Economics 126 (1)*, 2011: 373-416.

Malmendier, Ulrike, and Stefan Nagel. "Learning from inflation experiences." *The Quarterly Journal of Economics 131 (1)*, 2015: 53-87.

OECD. *G20 GDP Growth - Second quarter of 2020, OECD.* 2020. https://www.oecd.org/sdd/na/g20-gdp-growth-second-quarter-2020-oecd.htm (accessed May 21, 2021).

Pantazatou, Katerina. "Promoting solidarity in crisis times: Building on the EU Budget and the EU funds." *Perspectives on Federalism*, 2015: 49-76.

Rohrschneider, Robert. "The democracy deficit and mass support for an EU-wide government." *American Journal of Political Science*, 2000: 463-475.

Roth, Felix, Thomas Otter, and Felicitas Nowak-Lehmann. "Crisis and Trust in National and European Union Institutions: Panel Evidence for the EU, 1999 to 2012." *EUI Working Paper RSCAS*, 2013: 1-37.

Sears, D.O. "Life Stage Effects on Attitude Change, Especially Among the Elderly." In *Aging: Social Change*, by S.B. Kiesler, J.N. Morgan and V.K. Oppenheim, 183-204. New York: Academic Press, 1981.

—. "The Persistence of Early Political Predispositions: The Role of Attitude Object and Life Stage." *Review of Personality and Social Psychology*, 1983: 79-116.

Serricchio, Fabio, Myrto Tsakatika, and Lucia Quaglia. "Euroscepticism and the Global Financial Crisis." *Journal of Common Market Studies*, 2013: 51-64.

Spear, L.P. "Neurobehavioral Changes in Adolescence." *Current Directions in Psychological Science*, 2000: 111-114.

Steenbergen, M.R., and B.S. Jones. "Modeling Multilevel Data Structures." *American Journal of Political Science*, 2002: 218-237.

Thomassen, J. *The Legitimacy of the European Union after Enlargement*. Oxford: Oxford University Press, 2009.

Appendix for "The relationship between experiencing a recession during the formative years of an individual's early adulthood and their long-term sentiments towards the EU"

Content

Additional Figures – GDP

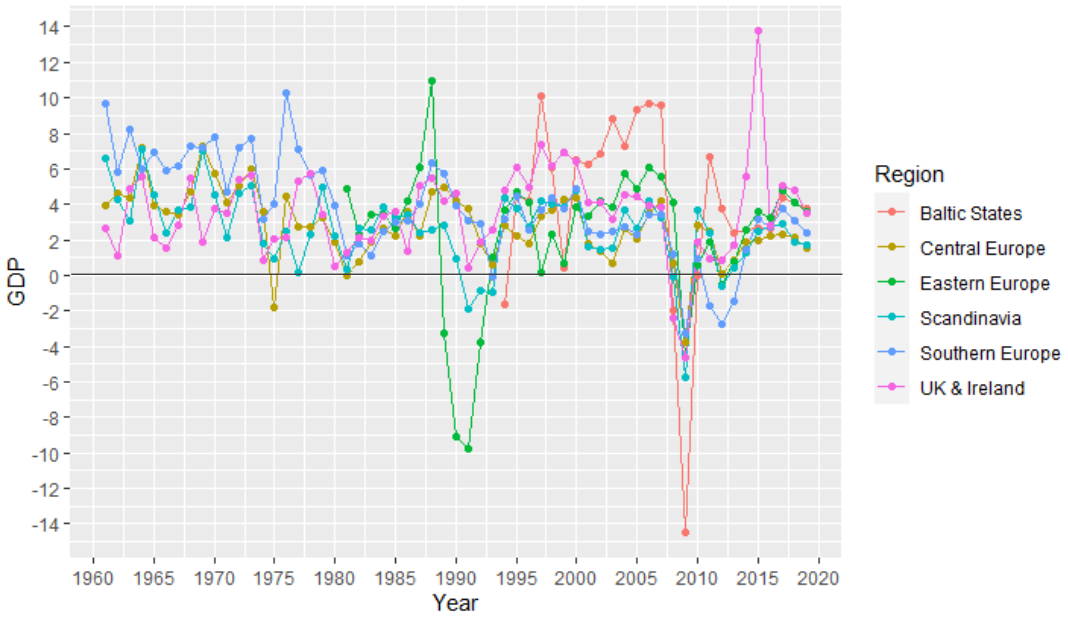

Figure 1 - GDP growth rates EU from 1961

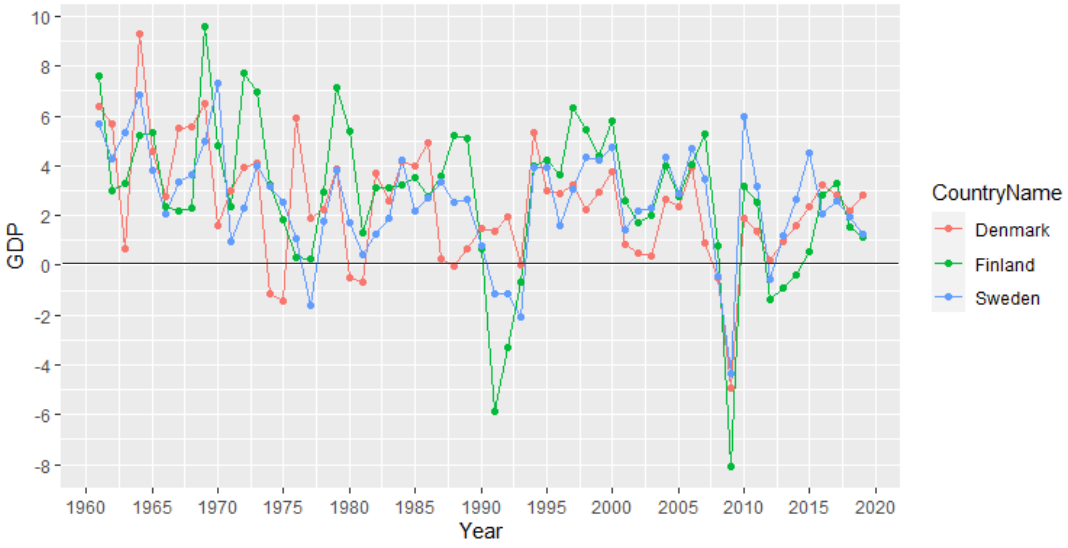

Figure 2 - GDP growth rates Scandinavia

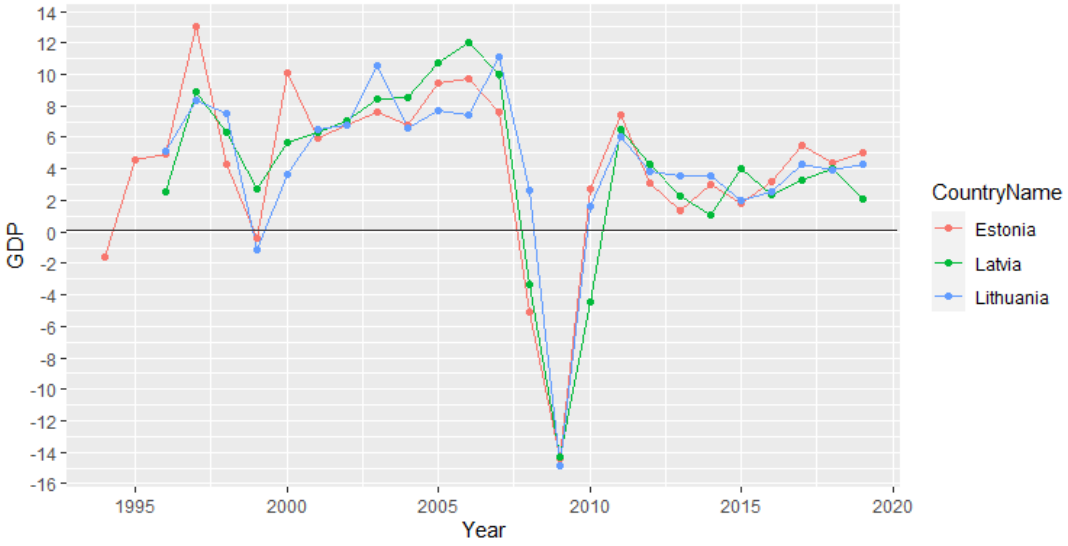

Figure 3 - GDP growth rates Baltic States

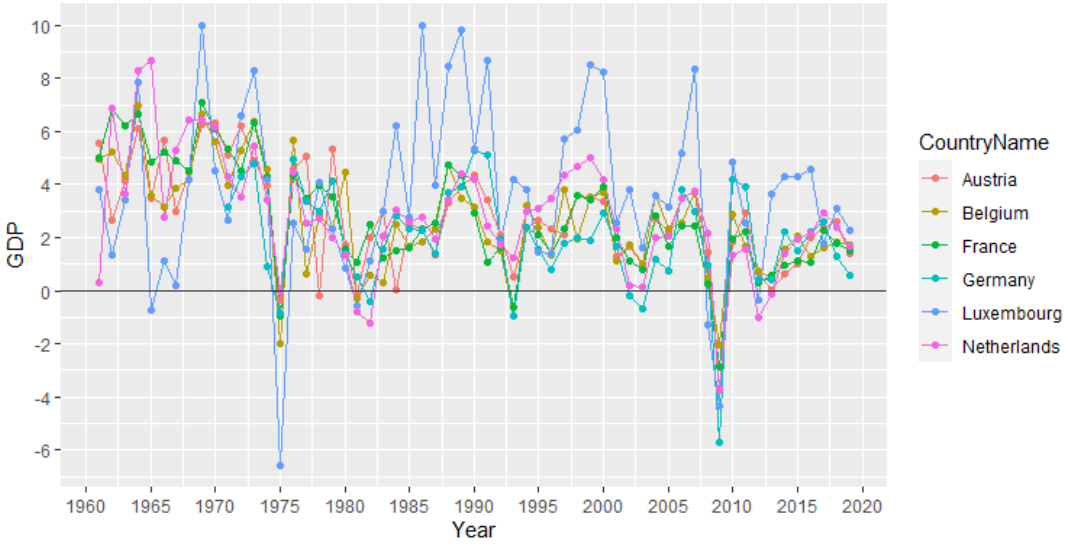

Figure 4 - GDP growth rates Central Europe

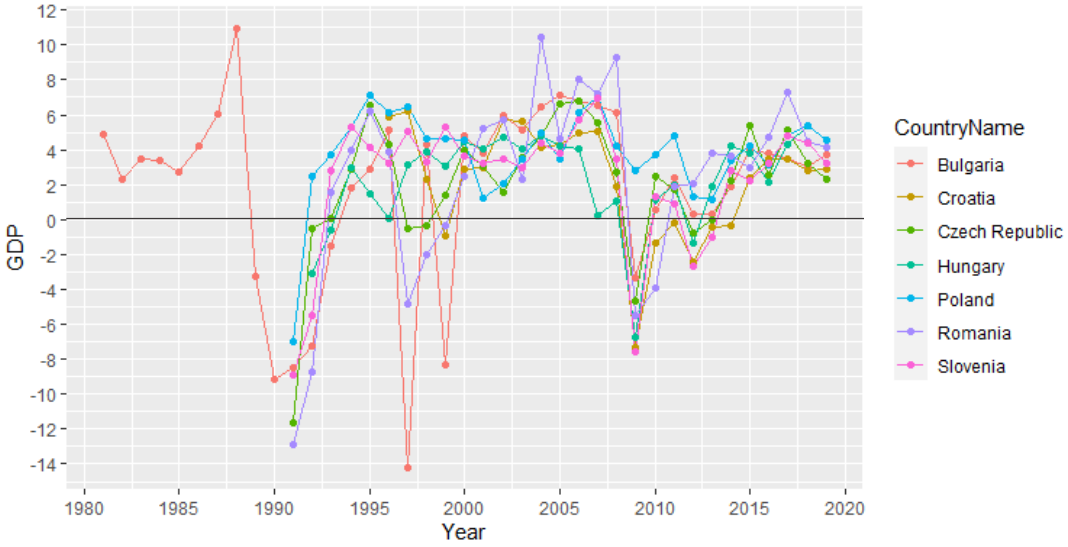

Figure 5 - GDP growth rates Eastern Europe

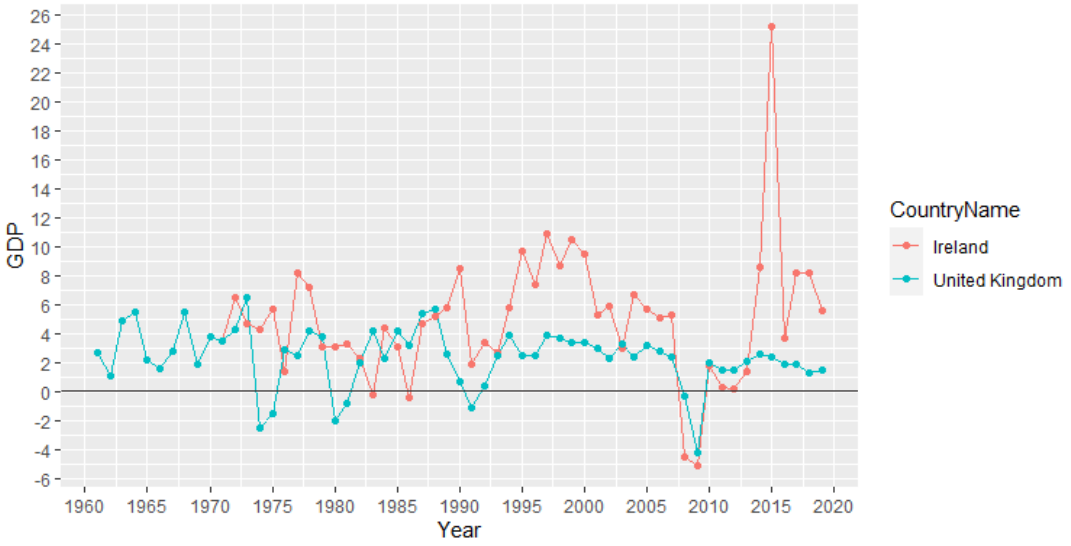

Figure 6 - GDP growth rates UK & Ireland

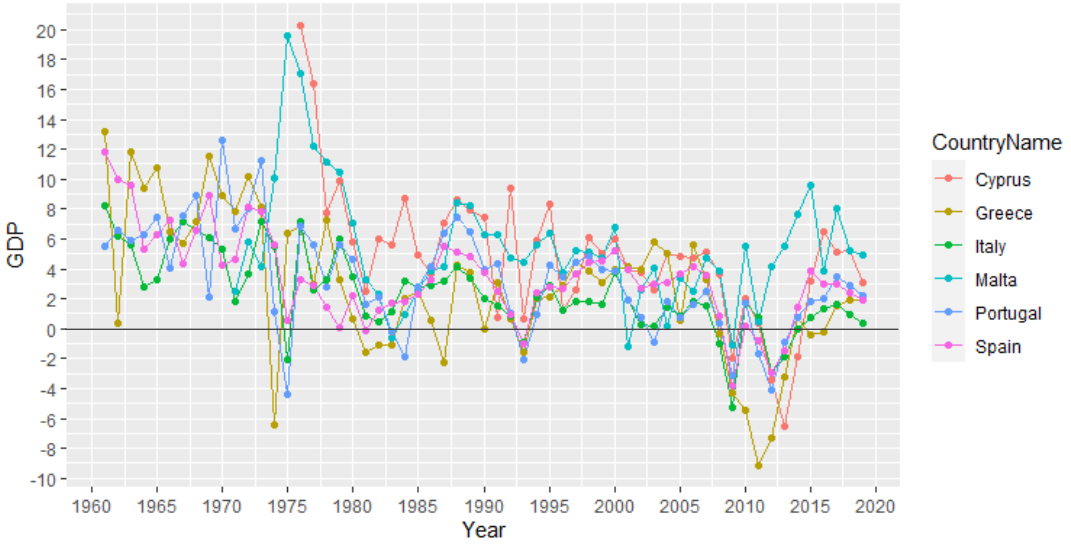

Figure 7 - GDP growth rates Southern Europe

Additional Figures – EVS

This chapter showcases the development of average expressed sentiments towards the EU across different age groups. In comparison to the EB dataset, it is difficult to graphically recognize and analyze variation of EU-attitudes of the EVS sample across time, life-cycles, and cohorts. This is due to the fact that the EVS sample does not include annual survey waves for each year for the period of 1990 until 2009. Yet, from the years covered by the EVS, it becomes evident that individuals aged 18-25, seem to be more confident towards the EU and less afraid that the EU will lead to loss of social security compared to older individuals.

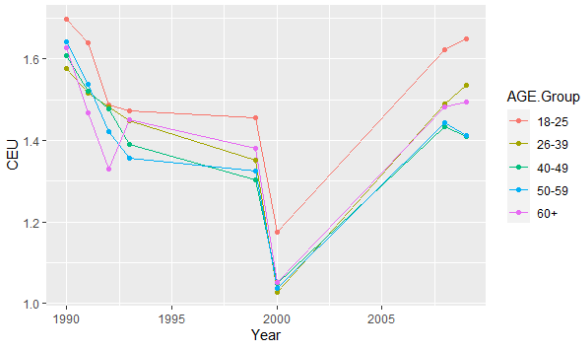

Figure 8 – CEU

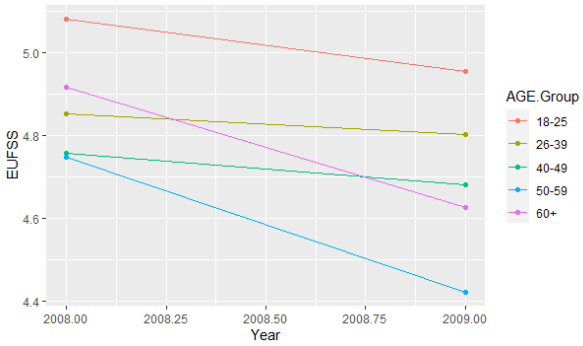

Figure 9 – EUFSS

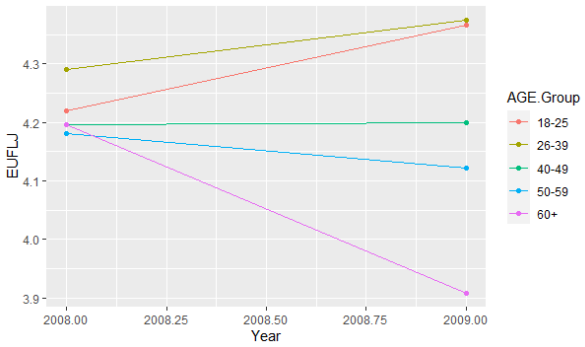

Figure 10 – EUFLJ

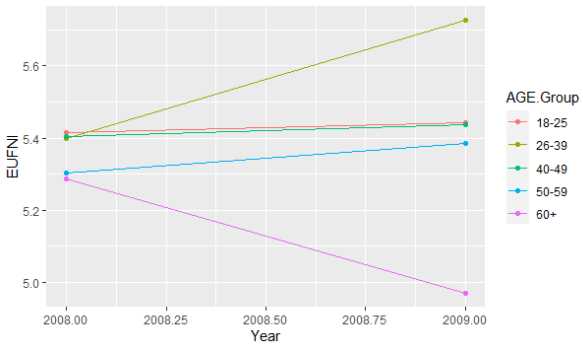

Figure 11 – EUFNI

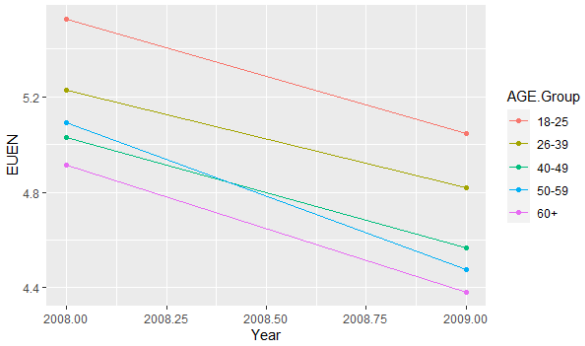

Figure 12 – EUEN

Additional Figures – EB

The following graphs illustrate the development of EU-sentiments across different age groups, using the EB dataset. As the Eurobarometer data entails annual survey waves, it is easier to graphically assess the variation of the sample's attitudes and views towards the EU over time as compared to the EVS dataset. The different graphs indicate that there seem to be clear life-cycle effects. Young adults aged 18-25 consistently rank EU membership and country benefit higher than older respondents. Moreover, they are on average also more trustful towards European institutions and political bodies compared to older individuals. Additionally to life-cycle there also appear to be cohort effects. During the years 2010, 2011 and 2012, the years of the EU sovereign debt crisis, individuals aged 18-25 showcased significantly lower levels of trust towards the EU and its institutions than earlier cohorts during this age period.

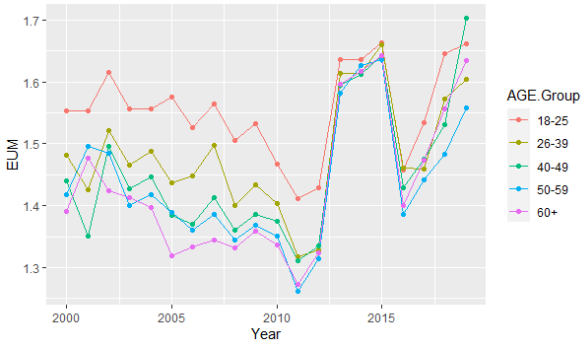

Figure 13 – EUM

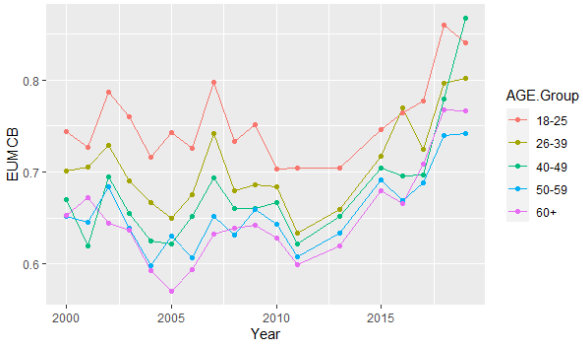

Figure 14 – EUMCB

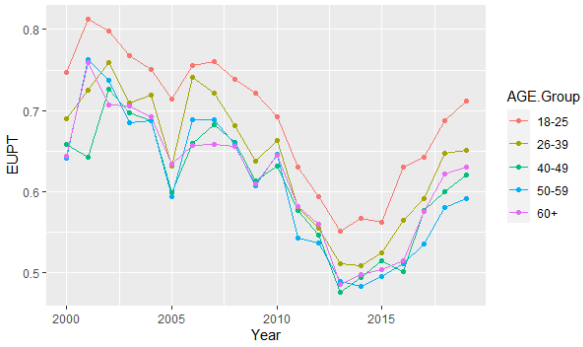

Figure 15 – EUPT

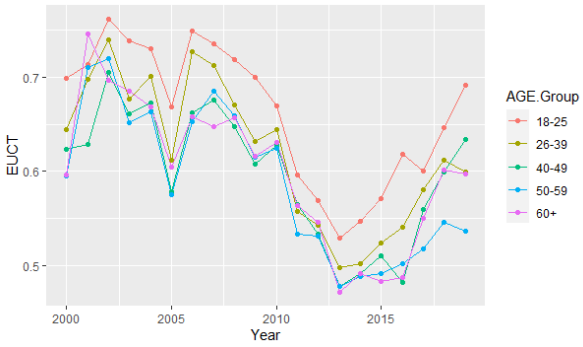

Figure 16 – EUCT

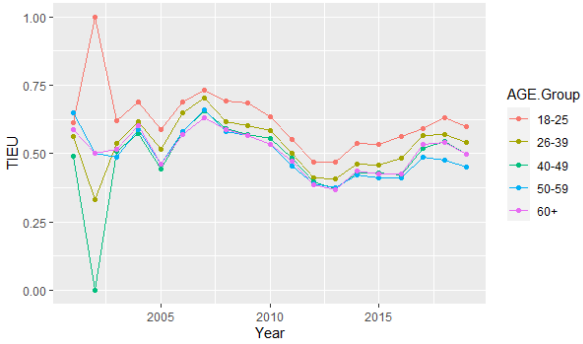

Figure 17 – TIEU

Additional Tables – EVS

This chapter describes the per EU-region EVS data sample.

Table A1: Descriptive Statistics Scandinavia

	Mean	Standard deviation
EU – sentiments		
CEU	1.255	0.782
EUFSS	4.942	2.955
EUFLJ	4.664	3.035
EUFNI	5.272	3.125
EUEN	4.733	2.700
Socio-Demographics		
Age	44.744	17.115
Female	0.502	0.500
Education	20.923	6.732
Unemployed		
Unskilled	0.079	0.269
Income Level	0.952	0.779
Life Satisfaction	7.983	1.854
Parents Financial Problems	0.032	0.176
Parents Low Education	0.005	0.073
Parents Unskilled	0.040	0.196
Macroeconomic Conditions		
Recession 18-25	0.434	0.496

Table A2: Descriptive Statistics Baltic States

	Mean	Standard deviation
EU – sentiments		
CEU	1.375	0.795
EUFSS	4.759	2.886
EUFLJ	3.597	2.767
EUFNI	5.289	2.908
EUEN	4.515	2.739
Socio-Demographics		
Age	44.890	17.422
Female	0.571	0.495
Education	20.822	5.210
Unemployed		
Unskilled	0.024	0.153
Income Level	0.999	0.783
Life Satisfaction	6.021	2.330
Parents Financial Problems	0.105	0.306
Parents Low Education	0.015	0.120
Parents Unskilled	0.085	0.278
Macroeconomic Conditions		
Recession 18-25	0.686	0.464

Table A3: Descriptive Statistics Central Europe

	Mean	Standard deviation
EU – sentiments		
CEU	1.457	0.829
EUFSS	4.505	2.862
EUFLJ	4.114	2.805
EUFNI	5.351	2.975
EUEN	4.509	2.688
Socio-Demographics		
Age	45.438	17.830
Female	0.538	0.499
Education	18.100	4.389
Unemployed		
Unskilled	0.044	0.204
Income Level	0.985	0.803
Life Satisfaction	7.424	1.946
Parents Financial Problems	0.042	0.201
Parents Low Education	0.017	0.131
Parents Unskilled	0.085	0.278
Macroeconomic Conditions		
Recession 18-25	0.503	0.500

Table A4: Descriptive Statistics Eastern Europe

	Mean	Standard deviation
EU – sentiments		
CEU	1.461	0.857
EUFSS	5.139	3.220
EUFLJ	4.591	3.195
EUFNI	5.690	3.162
EUEN	5.998	2.859
Socio-Demographics		
Age	45.929	17.361
Female	0.547	0.498
Education	18.695	5.205
Unemployed		
Unskilled	0.044	0.206
Income Level	0.979	0.789
Life Satisfaction	6.397	2.461
Parents Financial Problems	0.089	0.285
Parents Low Education	0.024	0.153
Parents Unskilled	0.072	0.258
Macroeconomic Conditions		
Recession 18-25	0.660	0.474

Table A5: Descriptive Statistics UK & Ireland

	Mean	Standard deviation
EU – sentiments		
CEU	1.698	0.794
EUFSS	4.659	2.967
EUFLJ	3.209	2.658
EUFNI	4.193	2.965
EUEN	3.811	2.574
Socio-Demographics		
Age	43.620	18.731
Female	0.555	0.497
Education	16.951	3.481
Unemployed		
Unskilled	0.073	0.260
Income Level	1.064	0.817
Life Satisfaction	7.923	1.852
Parents Financial Problems	0.047	0.212
Parents Low Education	0.021	0.145
Parents Unskilled	0.068	0.252
Macroeconomic Conditions		
Recession 18-25	0.410	0.492

Table A6: Descriptive Statistics Southern Europe

	Mean	Standard deviation
EU – sentiments		
CEU	1.600	0.861
EUFSS	4.874	3.045
EUFLJ	4.107	3.050
EUFNI	5.152	3.062
EUEN	5.130	2.856
Socio-Demographics		
Age	43.620	18.731
Female	0.544	0.498
Education	16.484	5.271
Unemployed		
Unskilled	0.060	0.238
Income Level	0.970	0.778
Life Satisfaction	7.122	2.107
Parents Financial Problems	0.074	0.262
Parents Low Education	0.085	0.279
Parents Unskilled	0.062	0.241
Macroeconomic Conditions		
Recession 18-25	0.455	0.498

Additional Tables – EB

This chapter describes the per EU-region EB data sample.

Table A7: Descriptive Statistics Scandinavia

	Mean	Standard deviation
EU – sentiments		
EUI	2.125	0.912
EUM	1.395	0.759
EUMCB	0.649	0.477
EUPT	0.641	0.480
EUCT	0.617	0.486
TIEU	0.505	0.500
Socio-Demographics		
Age	49.76	16.84166
Female	0.506	0.499
Education	31.618	24.233
Unemployed	0.053	0.224
Unskilled	0.030	0.170
Financial Problems	0.020	0.141
Working Class	0.201	0.401
Higher Class	0.007	0.084
Life Satisfaction	2.465	0.595
Experiences 18-25		
Recession 18-25	0.400	0.4897990

Table A8: Descriptive Statistics Baltic States

	Mean	Standard deviation
EU – sentiments		
EUI	2.293	0.764
EUM	1.474	0.635
EUMCB	0.746	0.436
EUPT	0.650	0.477
EUCT	0.657	0.475
TIEU	0.612	0.487
Socio-Demographics		
Age	46.986	17.741
Female	0.603	0.489
Education	26.992	23.126
Unemployed	0.084	0.278
Unskilled	0.036	0.187
Financial Problems	0.148	0.355
Working Class	0.393	0.488
Higher Class	0.004	0.062
Life Satisfaction	1.747	0.723
Experiences 18-25		
Recession 18-25	0.610	0.488

Table A9: Descriptive Statistics Central Europe

	Mean	Standard deviation
EU – sentiments		
EUI	2.163	0.931
EUM	1.537	0.680
EUMCB	0.681	0.466
EUPT	0.603	0.489
EUCT	0.560	0.490
TIEU	0.486	0.500
Socio-Demographics		
Age	46.438	16.543
Female	0.522	0.499
Education	26.648	22.985
Unemployed	0.059	0.236
Unskilled	0.029	0.167
Financial Problems	0.089	0.285
Working Class	0.194	0.396
Higher Class	0.005	0.072
Life Satisfaction	2.192	0.669
Experiences 18-25		
Recession 18-25	0.414	0.4924778

Table A10: Descriptive Statistics Eastern Europe

	Mean	Standard deviation
EU – sentiments		
EUI	2.263	0.909
EUM	1.405	0.660
EUMCB	0.677	0.468
EUPT	0.619	0.486
EUCT	0.614	0.487
TIEU	0.561	0.496
Socio-Demographics		
Age	45.771	16.062
Female	0.569	0.495
Education	24.681	21.070
Unemployed	0.087	0.282
Unskilled	0.029	0.168
Financial Problems	0.116	0.320
Working Class	0.366	0.482
Higher Class	0.006	0.079
Life Satisfaction	1.733	0.755
Experiences 18-25		
Recession 18-25	0.643	0.479

Table A11: Descriptive Statistics UK & Ireland

	Mean	Standard deviation
EU – sentiments		
EUI	2.545	0.985
EUM	1.760	0.516
EUMCB	0.890	0.313
EUPT	0.670	0.470
EUCT	0.665	0.472
TIEU	0.485	0.500
Socio-Demographics		
Age	43.163	16.211
Female	0.533	0.499
Education	26.233	23.648
Unemployed	0.077	0.267
Unskilled	0.052	0.222
Financial Problems	0.154	0.361
Working Class	0.412	0.492
Higher Class	0.002	0.044
Life Satisfaction	2.245	0.679
Macroeconomic Conditions		
Recession 18-25	0.372	0.483

Table A12: Descriptive Statistics Southern Europe

	Mean	Standard deviation
EU – sentiments		
EUI	2.235	0.977
EUM	1.458	0.687
EUMCB	0.648	0.477
EUPT	0.563	0.496
EUCT	0.543	0.498
TIEU	0.459	0.498
Socio-Demographics		
Age	45.170	16.424
Female	0.546	0.498
Education	25.436	24.515
Unemployed	0.088	0.284
Unskilled	0.040	0.197
Financial Problems	0.242	0.428
Working Class	0.389	0.488
Higher Class	0.001	0.036
Life Satisfaction	1.656	0.798
Macroeconomic Conditions		
Recession 18-25	0.536	0.4987292

Additional Tables – EVS Age Range Robustness Checks

	Dependent variable:				
	CEU	EUFSS	EUFLJ	EUFNI	EUEN
	(1)	(2)	(3)	(4)	(5)
Recession 26-30	0.004	0.018	-0.096	-0.025	-0.111
	(0.016)	(0.080)	(0.077)	(0.084)	(0.078)
Recession 31-35	-0.019	0.006	-0.018	-0.009	-0.131*
	(0.016)	(0.081)	(0.079)	(0.086)	(0.079)
Recession 36-40	0.003	-0.011	-0.063	0.049	-0.051
	(0.017)	(0.082)	(0.079)	(0.087)	(0.081)
Recession 41-45	0.019	-0.098	-0.101	0.086	-0.140*
	(0.017)	(0.086)	(0.083)	(0.091)	(0.085)
Recession 46-50	0.001	0.031	-0.019	0.118	-0.062
	(0.018)	(0.088)	(0.085)	(0.093)	(0.087)
Recession 51-55	0.004	0.066	-0.017	0.001	-0.078
	(0.016)	(0.080)	(0.077)	(0.084)	(0.079)
Recession 56-60	-0.015	0.003	0.002	0.129	-0.051
	(0.018)	(0.086)	(0.083)	(0.091)	(0.085)
Age	0.001	0.010	0.019	-0.011	-0.024*
	(0.003)	(0.013)	(0.012)	(0.013)	(0.013)
Female	-0.014	-0.355***	-0.343***	-0.200***	-0.193***
	(0.013)	(0.062)	(0.060)	(0.065)	(0.060)
Education	0.006***	0.043***	0.057***	0.046***	0.026***
	(0.001)	(0.005)	(0.005)	(0.006)	(0.005)
Unemployed	0.012	0.076	0.142*	0.087	0.202**
	(0.016)	(0.081)	(0.078)	(0.085)	(0.079)
Unskilled	-0.051				
	(0.035)				
Income Level	0.073***	0.349***	0.388***	0.175***	0.146***
	(0.009)	(0.043)	(0.042)	(0.046)	(0.042)
Parents Fin. Problems	-0.064***	-0.180**	-0.224***	0.015	-0.145*
	(0.022)	(0.079)	(0.076)	(0.084)	(0.078)
Parents Low Education	-0.016	-0.052	-0.128	-0.309***	0.167
	(0.029)	(0.104)	(0.100)	(0.109)	(0.103)
Parents Unskilled	-0.018	-0.123	-0.273***	-0.046	-0.120
	(0.023)	(0.082)	(0.079)	(0.086)	(0.080)
Life Satisfaction	0.032***	0.161***	0.084***	0.104***	0.051***
	(0.003)	(0.015)	(0.015)	(0.016)	(0.015)
Observations	16,783	8,892	8,954	8,925	8,457
R^2	0.099	0.117	0.144	0.058	0.074
Adjusted R^2	0.095	0.113	0.140	0.053	0.070

Note: Included FE: Age, year, country, cohorts *p<0.1; **p<0.05; ***p<0.01

Additional Tables – EB Age Range Robustness Checks

	Dependent variable:					
	EUI	EUM	EUMCB	EUPT	EUCT	TIEU
	(1)	(2)	(3)	(4)	(5)	(6)
Recession 26-30	-0.003	-0.001	0.026	0.019*	0.012	0.014
	(0.013)	(0.023)	(0.022)	(0.009)	(0.009)	(0.009)
Recession 31-35	0.013	0.015	0.033	0.027**	0.014	0.028**
	(0.013)	(0.026)	(0.025)	(0.009)	(0.009)	(0.009)
Recession 36-40	-0.013	0.023	0.009	-0.004	-0.010	0.004
	(0.014)	(0.027)	(0.026)	(0.010)	(0.010)	(0.010)
Recession 41-45	0.017	0.028	-0.008	0.006	-0.012	0.012
	(0.015)	(0.029)	(0.030)	(0.011)	(0.011)	(0.010)
Recession 46-50	0.019	0.037	0.013	0.002	-0.007	0.004
	(0.017)	(0.035)	(0.035)	(0.012)	(0.012)	(0.012)
Recession 51-55	-0.008	0.001	-0.002	-0.008	-0.026*	-0.005
	(0.015)	(0.031)	(0.031)	(0.010)	(0.010)	(0.010)
Recession 56-60	0.003	-0.015	-0.032	0.003	-0.004	0.007
	(0.015)	(0.030)	(0.030)	(0.011)	(0.011)	(0.010)
Age	0.007***	-0.0003	0.004	0.003**	0.004***	0.005***
	(0.002)	(0.004)	(0.004)	(0.001)	(0.001)	(0.001)
Female	-0.048***	-0.065***	-0.030*	-0.015**	-0.012*	-0.022***
	(0.009)	(0.017)	(0.016)	(0.007)	(0.007)	(0.006)
Education	0.002***	0.003***	0.003***	0.001***	0.001***	0.001***
	(0.0004)	(0.001)	(0.001)	(0.0003)	(0.0003)	(0.0003)
Unemployed	-0.031	-0.054	-0.025	0.007	-0.011	0.005
	(0.027)	(0.050)	(0.047)	(0.019)	(0.019)	(0.018)
Unskilled	-0.111**	-0.104	-0.145*	-0.058*	-0.041	-0.020
	(0.044)	(0.090)	(0.082)	(0.031)	(0.031)	(0.029)
Fin. Problems	-0.170***	-0.085**	-0.042	-0.102***	-0.092***	-0.092***
	(0.019)	(0.039)	(0.036)	(0.014)	(0.014)	(0.013)
Working Class	-0.204***	-0.172***	-0.149***	-0.117***	-0.125***	-0.106***
	(0.012)	(0.022)	(0.021)	(0.008)	(0.008)	(0.008)
Higher Class	0.088	0.188*	0.157	0.152***	0.094*	0.109**
	(0.069)	(0.113)	(0.128)	(0.053)	(0.054)	(0.051)
Life Satisfaction	0.237***	0.133***	0.090***	0.097***	0.100***	0.088***
	(0.008)	(0.014)	(0.013)	(0.005)	(0.005)	(0.005)
Giver	0.190	-0.504***	-0.004	0.077	0.060	0.176
	(0.187)	(0.193)	(0.364)	(0.125)	(0.137)	(0.115)
Observations	37,566	4,678	2,805	20,399	19,675	21,306
R^2	0.093	0.135	0.135	0.099	0.115	0.087
Adjusted R^2	0.090	0.119	0.113	0.094	0.109	0.081

Note: Included FE: Age, year, country, cohorts *p<0.1; **p<0.05; ***p<0.01