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Life Satisfaction and Austerity:

Expectations and the Macroeconomy

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Abstract

We examine the linkages between fiscal austerity and life satisfaction across twelve European countries using a sample of repeated cross-sections of individuals from 1999 to 2014. Austerity policies may trigger several responses at both the macro and micro-level, which in turn may affect life satisfaction directly or indirectly. We employ mediation analysis to account for these complex relationships linking austerity to an individual's life satisfaction, their economic expectations and their likelihood of unemployment. We find that austerity policies primarily affect individual life satisfaction via the economic expectations channel. Austerity dampens optimism about the future and this response has a negative effect on life satisfaction across a range of measures of economic expectations. In addition, our results suggest that changes in government expenditure, as opposed to taxation, matter for life satisfaction.

Keywords: Economic expectations; Fiscal Austerity; Life Satisfaction; Macroeconomic Environment
JEL classification: D61; H61; I3

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1 Introduction

This paper provides new empirical evidence on the economic implications of austerity by conducting empirical analysis of the relationship between austerity and life satisfaction. We apply structural equation modelling (SEM) techniques, which allow us to comprehensively identify and explore the relative importance of the potential mechanisms underlying the relationship between life satisfaction and austerity measures. Specifically, we analyse information from repeated cross-sections of individuals in Europe between 1999 and 2014, sourced by the Eurobarometer, to explore whether a direct effect of austerity policies on life satisfaction exists as well as whether austerity affects life satisfaction indirectly via individuals' economic expectations and the probability of unemployment. Although a SEM approach has been previously used to model life satisfaction (see e.g. Powdthavee and Wooden, 2015), to date it has not been used to shed light on the channels via which macroeconomic fundamentals and policy influence life satisfaction.

Economists typically agree that austerity is unavoidable when a country has lost the confidence of its creditors (Gros, 2013). Austerity is defined as a set of fiscal policies aimed at reducing the deficit of a country via a combination of tax increases and reductions in government spending. Such policies were at the centre of the debate in the aftermath of the Great Recession of 2007 and 2008. The crisis severely weakened European economies, and austerity measures were implemented to consolidate fiscal imbalances. An extensive literature exists, which explores the relationship between fiscal austerity and the macroeconomic environment, whilst, in stark contrast, there is sparse evidence on the impact of austerity on individual level outcomes such as life satisfaction.[1]

Our paper contributes to the research on the determinants of life satisfaction and the effect of austerity policies. The starting premise is that austerity may trigger several responses at both the macro and micro-level, which in turn may affect life satisfaction directly or indirectly. We employ a SEM approach to account for the complex relation-

[1]The literature on the macroeconomic effects of austerity provides mixed results. For example, the evidence in Cloyne (2013) and Guajardo et al. (2014) supports the view that cuts in government spending, or an increase in taxation, have contractionary effects in the short-run (lower output and higher unemployment), while other studies show that fiscal consolidations can be expansionary, especially if implemented via government spending cuts (Giavazzi and Pagano, 1990; Alesina and Ardagna, 2010).

ships linking austerity to an individual's life satisfaction, their economic expectations and their probability of unemployment. To do so, we merge the Eurobarometer surveys, which include information on individuals' life satisfaction, economic expectations and employment status, with macroeconomic information on unemployment rates, inflation and GDP growth across a sample of twelve European countries. Moreover, we use the narrative tax and spending-based measures of austerity recently introduced by Alesina et al. (2019), building on earlier work by Guajardo et al. (2014). The narrative approach aims to identify exogenous fiscal adjustments by examining contemporaneous policy documents and locating fiscal policy shifts that aim to reduce the budget deficit, as opposed to responding to short-term output fluctuations. These fiscal changes are independent from variations in individual life satisfaction.

Summarising our results, we find that austerity policies affect individual life satisfaction primarily via the economic expectations channel. Austerity dampens optimism about the future and this response has a negative effect on life satisfaction across a range of measures of economic expectations. We detect a relatively small effect of austerity via the unemployment channel too. In addition, our results suggest that changes in government expenditure, as opposed to taxation, matter for life satisfaction.

Our analysis is related to previous studies that examine the effect of government spending and taxation on life satisfaction, which generally report mixed results. On the one hand, Di Tella et al. (2006) find that higher unemployment benefits are positively related to wellbeing, thereby suggesting that the welfare state can help to mitigate the costs of business cycle fluctuations. On the other hand, Bjørnskov et al. (2007) find that wellbeing is negatively associated with higher government spending, while the results of Di Tella and MacCulloch (2005), Ram (2009) and Oishi et al. (2012) suggest no such relationship. The literature on the effects of taxation on life satisfaction is not as extensive. For example, Flavin et al. (2011) find that higher tax revenue (as a proportion of GDP) is associated with higher life satisfaction.[2] Relative to this literature, our SEM approach

[2]As Bjørnskov et al. (2007) and Hessami (2010) argue, the absence of a relationship between government size and life satisfaction is consistent with the traditional welfare economics view. However, Hessami (2010) shows that the effect of government size on wellbeing displays an inverse U-shape.

serves to distinguish between direct and indirect effects of austerity on life satisfaction.

To further our understanding of the relationship between austerity and life satisfaction, we explore the effect of individuals' economic expectations. Economic expectations are likely to be influenced by the macroeconomy, which in turn is influenced by austerity measures. In our paper, economic expectations enter the model because of their link with the macroeconomy and austerity. However, we also recognise that expectations may affect life satisfaction directly. In this sense, our work also makes a contribution to the empirical literature on the impact of economic expectations on subjective wellbeing (SWB), which is somewhat limited. Existing studies tend to identify a positive effect on current SWB from optimistic income expectations (Senik, 2004, 2008; Frijters et al., 2012). As Frijters et al. (2012) point out, the effect of expectations on individuals' happiness has only recently started to receive attention in the empirical literature, despite the presence of long-standing theories that highlight the importance of income expectations for happiness.[3] Our SEM approach allows us to explore how economic expectations affect life satisfaction directly as well as allowing for a further indirect effect of austerity operating via economic expectations.

Our paper is also related to existing studies exploring the macroeconomic determinants of life satisfaction. This literature has mainly focused on variables such as unemployment and output growth. A seminal contribution by Di Tella et al. (2001) shows that both higher inflation and unemployment decrease life satisfaction, but the impact of unemployment is stronger; for a more recent analysis, see Blanchflower et al. (2014).[4] It is commonly accepted that the consequences of recessions for communities and households are far-reaching, as economic slowdowns can have substantial impacts on the psychological wellbeing of individuals (De Neve et al., 2018), especially if they are preceded by banking

[3]In line with the "tunnel effect" theory, originally developed by Hirschman and Rothschild (1973), Senik (2004) argues that even poor individuals may derive utility from rising income inequality, if they interpret it as a positive signal for possible future outcomes. Hence, if austerity increases income inequality, as suggested by Ball et al. (2013) and Woo et al. (2013), the "tunnel effect" may lead to higher SWB. However, Alesina et al. (2004) find that individuals have a lower tendency to report themselves as happy when inequality is high. Furthermore, the distributional effects of fiscal consolidation constitute a question that is still not fully settled in the existing literature due to data availability and timing issues, among other reasons (Perotti (1996)). Therefore, the role of expectations in the relationship between austerity and life satisfaction is an area ripe for exploration.

[4]Earlier work in this area can be traced back to Easterlin (1974).

crises (Montagnoli and Moro, 2018).

Recent evidence suggests that the economic crisis in Europe and the implementation of austerity policies have had a significant positive impact on suicide rates (Antonakakis and Collins, 2014, 2015), have worsened self-reported health status, (Kentikelenis et al., 2011), and have increased the incidence of mental disorders and alcohol abuse (Gili et al., 2012; Roca et al., 2013). However, unlike these studies, we focus on broader measures of life satisfaction, as opposed to mental health and suicide indicators. Another broadly related strand of the literature considers the effect of fiscal policy on private sector confidence. For instance, Beetsma et al. (2015) use data on fiscal plans and examine the response of consumer confidence to fiscal consolidation. They show that confidence declines around announcements of consolidation measures, with the effect being stronger for revenue-based adjustments.

The paper is organised as follows. The next section presents the conceptual framework, Section 3 documents the data and the econometric framework. Section 4 discusses the results and Section 5 concludes.

2 Conceptual framework

The discussion of the existing literature on austerity, life satisfaction and expectations presented in the previous section serves to highlight the complex nature of the potential direct and indirect effects at play. Mediation analysis is ideally suited to help disentangle these relationships. Our modelling approach is summarised in Figure 1, which illustrates potential channels via which austerity affects life satisfaction. Our analysis starts from the premise of a link between life satisfaction and the macroeconomic environment, specifically GDP growth, the unemployment rate and inflation, as established in the existing literature. We introduce two novel features into this modelling framework. Firstly, we explore the effect of austerity on life satisfaction and, secondly, we investigate the role that economic expectations have in shaping life satisfaction in part by transmitting the effects of austerity.

Our first hypothesis states that austerity has a direct effect on individuals' life satis-

faction, individuals' economic expectations and employment status, as captured by the probability of unemployment. Specifically, we explore the effects of austerity shocks, defined firstly as an unexpected change (tightening) in public finances relating to the year of announcement and, secondly, anticipated fiscal retrenchment measures, defined as policies that were announced at least one year prior to the planned enactment (Alesina et al., 2019). Section 3.2 below provides details regarding the qualitative and quantitative dimensions of these measures. Our prior is that these policies have a negative effect on all three outcomes, i.e. lowering life satisfaction, leading to less optimistic economic expectations and increasing the probability of being unemployed.

We allow the probability of unemployment to directly influence the individual's life satisfaction and economic expectations. Here, there is consensus in the existing literature that unemployment is an important determinant of life satisfaction (see e.g. Clark and Oswald, 1994). In contrast, there is less empirical evidence relating to the effect of unemployment on individuals' economic expectations.

Our modelling framework allows the macroeconomic environment to have a direct effect on life satisfaction, the probability of unemployment and economic expectations. The first two links are quite intuitive, with extensive support in the existing literature. With respect to the life satisfaction equation, our framework follows Di Tella et al. (2006) and Blanchflower et al. (2014). In contrast, the existing empirical literature on the relationship between the macroeconomic environment and individuals' economic expectations is less well-established. To the best of our knowledge, this link has never been formally tested within the framework depicted in Figure 1. Our hypothesis is that the macroeconomic environment in which an individual lives serves to shape their economic expectations about the future. For instance, a prevailing macroeconomic environment with a high level of unemployment and/or declining output may serve to dampen an individual's expectations about job opportunities and personal finances. In addition, the existing literature has largely ignored the link between expectations and life satisfaction. Our framework allows us to test whether such a direct relationship exists.

Finally, following the existing literature, we allow individual characteristics such as age

and marital status to influence life satisfaction, economic expectations and the probability of unemployment. We treat such individual characteristics as exogenous.[5]

The framework presented in Figure 1 and the various direct effects discussed above lead to a series of indirect connections within the various nodes of our system. Key to this framework is the indirect effect that austerity shocks potentially have on life satisfaction. There are various possible indirect channels through which the individual's life satisfaction is affected by austerity policies. Firstly, fiscal retrenchment may increase the probability of being unemployed, which in turn may lower life satisfaction directly and/or indirectly via less optimistic economic expectations. Secondly, austerity policies could have an impact on life satisfaction via economic expectations. Specifically, austerity may directly and indirectly affect economic expectations, which in turn may affect life satisfaction.

To summarize, we allow an individual's life satisfaction to be affected by: austerity policies (unanticipated and expected); the individual's economic expectations; the probability of unemployment; the individual's personal characteristics; and the macroeconomic environment, as measured by GDP growth, the unemployment rate and inflation. Our framework allows an individual's economic expectations to be affected by austerity policies, the macroeconomic environment, being unemployed and personal characteristics. Finally, an individual's probability of being unemployed is linked to the austerity policies and the macroeconomic environment, as well as individual characteristics.

3 Data and empirical strategy

We have created a dataset linking individual-level data with country-level observations on individual life satisfaction, economic expectations and unemployment status (and other personal characteristics) collected by the Eurobarometer surveys with: (a) the "narrative" austerity measure, constructed by Alesina et al. (2019); and (b) macroeconomic indicators, specifically, the unemployment rate, the inflation rate and GDP growth, collected by the OECD Economic Outlook N.90. Our final dataset covers the period 1999-2014 and 12

[5]For example, we treat marital status as exogenous, as is conventional in the SWB literature, see e.g. Clark and Georgellis (2013). With respect to expectations, Das et al. (2020) explore how socio-economic status influences the macroeconomic expectations of individuals.

European countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Portugal, Spain, Sweden, and the UK) yielding a sample of 256,213 individual-level observations. The start date of our analysis is determined by the availability of the economic expectations questions in the Eurobarometer surveys, while the end date is determined by the availability of the austerity measure. The Eurobarometer surveys are characterised by multiple waves per country per year, with approximately 1000 face-to-face interviews per wave. All respondents must be resident in the respective country and aged 15 and over.[6] Table 1 presents descriptive statistics for all the variables used in our empirical analysis.

3.1 Measuring life satisfaction

The Eurobarometer surveys are ideally suited to our study as they include a measure of life satisfaction, which has been analysed extensively in the literature. For example, Di Tella et al. (2001) use Eurobarometer data to explore the relationship between unemployment, inflation and life satisfaction. Blanchflower et al. (2014) adopt the Eurobarometer's life satisfaction measure to examine the microeconomic determinants of SWB in Europe and Alesina et al. (2004) study the relationship between inequality in Europe and individual SWB using data drawn from the Eurobarometer from 1975 to 1992. Our choice of countries and sample selection are constrained by the measure of austerity, as stated above. Hence, this data source, as well as this measure of SWB, has been used in some of the seminal papers in this area, which facilitates comparison between our findings and the existing literature and serves to highlight the contributions that we make to existing knowledge in this field.

The variable measuring life satisfaction is a categorical variable derived from the question: "on the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?" with the related answers 1="Not at all satisfied"

[6]The Eurobarometer surveys used are the standard surveys, which contain the life satisfaction and expectations variables, 1999-2014, specifically our database is constructed from the following study numbers: ZA3204; ZA3387; ZA3627; ZA3693; ZA3938; ZA4229; ZA4411; ZA4414; ZA4506; ZA4526; ZA4530; ZA4565; ZA4744; ZA4819; ZA4971; ZA4972; ZA4973; ZA4994; ZA5234; ZA5235; ZA5449; ZA5481; ZA5564; ZA5567; ZA5612; ZA5613; ZA5685; ZA5689; ZA5852; ZA5876; ZA5913; ZA5928; ZA5929.

(2.85%), 2="Not very satisfied" (11.58%), 3="Fairly satisfied" (56.80%), 4="Very satisfied" (28.77%). Hence, this measure is increasing in the level of life satisfaction. The mean reported life satisfaction is 3 with a standard deviation of 0.38.

3.2 Measuring austerity

The macroeconomics literature has proposed various approaches to measuring the level of austerity. Traditionally, the change in the cyclically adjusted primary balance (CAPB) has been used as a proxy for fiscal consolidation.[7] Adopting CAPB-based measures of austerity, several authors (Alesina and Perotti, 1997; Alesina et al., 2002; Alesina and Ardagna, 2010) have documented the presence of a positive link between fiscal contractions and economic growth. Recently, this method to measure austerity policies has come under scrutiny. According to Guajardo et al. (2014), the CAPB measure may actually bias empirical analysis in favour of the expansionary fiscal contractions hypothesis. Changes in cyclically-adjusted fiscal variables often capture non-policy changes correlated with other economic developments affecting output (such as a boom in the stock market). Moreover, rises in the CAPB may reflect the government's discretionary decisions to cut spending or raise taxes motivated by a desire to respond to cyclical fluctuations. Austerity measures obtained by adopting the CAPB approach may, therefore, not be exogenous to short-run output fluctuations.

In order to mitigate this identification problem, and following the literature initiated by Romer and Romer (2010), Guajardo et al. (2014) adopt narrative analysis to construct a dataset of fiscal consolidations for 17 OECD countries during the period 1978-2009 that distinguishes between endogenous and exogenous changes. Specifically, they examine a wide range of policy documents such as budget speeches, convergence and stability programs and Central Bank reports. These documents are used to identify discretionary changes in taxes and government spending that are motivated by a desire to reduce the budget deficit and are not directly correlated with the short-term economic outlook and

[7]The CAPB is usually calculated as the difference between cyclically adjusted total revenue and cyclically adjusted primary expenditure. The standard cyclical adjustment method implies the correction of the individual components of the government budget for year-to-year variations in the unemployment rate (Alesina and Ardagna, 2010).

are exogenous in this regard.[8]

More recently, using as starting point the narrative identification procedure of Guajardo et al. (2014), Alesina et al. (2019) construct new narrative austerity measures for 16 out of the 17 OECD countries examined by the former study, extending the time period to 2014. A major difference with respect to Guajardo et al. (2014) is that they group the measures by the years in which the measures were introduced, instead of grouping by the year of effective implementation. They use the following three criteria to classify exogenous fiscal adjustments: (i) those aimed at reducing the budget deficit; (ii) politically motivated with reasons that are unrelated to the state of the business cycle; and (iii) motivated by long-run economic trends (e.g. reducing the sustainability gap of public finances due to population ageing), as opposed to short-run countercyclical concerns.[9] Their fiscal consolidation measures (i.e. the projected fiscal revenue effects defined as a percentage of the GDP of the year preceding the announcement) are aggregated into several indicators of taxes and spending. To fully capture the different components of fiscal plans over time, they further categorise the fiscal variable shifts into three groups: (i) unexpected shifts, announced and implemented in a given year; (ii) shifts implemented in a given year, which had been announced at least one year prior to the planned enactment; and (iii) shifts announced in a given year, to be implemented in future years.

In line with this literature, we consider the narrative approach to be a valid method to measuring austerity and, ultimately, its effect on life satisfaction. Hence, we obtain data from Alesina et al. (2019) for the 12 European countries listed at the start of Section 3 over the period 1999-2014. Specifically, we adopt four measures of austerity (expressed

[8]The use of the narrative method to identify policies of fiscal retrenchment dates back to Romer and Romer (2010), who use information from primary documents produced by policy makers, such as Congressional Reports and presidential speeches, to document legislated U.S. tax policy changes over 1945-2007, and separate them into endogenous and exogenous actions. According to Romer and Romer (2010), endogenous tax actions are taken to offset developments that would cause output growth to differ from normal. In contrast, exogenous tax changes are those not taken to offset factors pushing growth away from normal. A number of studies have utilized the Romer–Romer narrative approach. For example, Cloyne (2013) constructs a new narrative dataset to isolate U.K. tax policy changes, which were not responding to, or influenced by, short-run macroeconomic fluctuations. These include actions aimed towards raising long-run economic performance, ideological changes related to party political or social causes, and rulings from external bodies such as courts.

[9]Thus, the narrative approach generates austerity measures that, by definition, are exogenous to short-run output fluctuations, but not to long-run economic trends. We are very grateful to an anonymous referee for highlighting this important point.

as a percentage of GDP): (i) the sum of fiscal measures capturing the changes in taxes that are unexpected at time t (ΔT^u); (ii) the sum of fiscal measures related to changes in spending that are unexpected at time t (ΔG^u); (iii) the sum of fiscal measures linked to changes in taxes that are expected at time t (ΔT^a); and (iv) the sum of the fiscal measures corresponding to changes in spending that are anticipated at time t, (ΔG^a). The expected fiscal adjustments reflect the cumulative impact of the measures announced for the given year over the past five years.

Figures 2 and 3 show, respectively, the anticipated and unanticipated austerity measures for each sample country over the time period of our analysis. Positive values in the series represented by the solid line reflect fiscal revenue from government spending cuts (e.g. reductions in social security contributions), while the dotted line represents revenue from tax rises (e.g. increases in stamp duties), both expressed as a percentage of GDP. The evidence in these figures highlights the fact that most countries in the sample adopted austerity policies in the aftermath of the global financial crisis and/or the European sovereign debt crisis. Countries in the periphery of the Euro area were especially affected. As Figure 3 shows, Ireland experienced the most pronounced austerity shocks, accumulating to more than 4 percent of GDP by 2010 (combined taxation and spending). Finally, Figure 2 highlights that the largest values of anticipated austerity measures were recorded in Portugal and Italy.

3.3 Measuring economic expectations

To measure individuals' economic expectations, we make use of the Eurobarometer surveys, which include a set of variables that captures views about the future, including: life as a whole; the national economic situation; the household's financial situation; the national employment situation; and their job in general. Specifically, individuals were asked the following: "What are your expectations for the next twelve months: will the next twelve months be better, worse or the same, when it comes to: Your life in general? The economic situation in our country? The financial situation of your household? The employment situation in our country? Your personal job situation?". The possible responses

were "Better", "Same", and "Worse". From these responses, we construct five indices that are increasing in positive expectations, where 0 denotes "worse", 1 denotes "same", and 2 denotes a "better" expected situation. Our approach to defining the economic expectations indices in this way follows the small, yet growing, literature on individuals' economic expectations, see, for example, the seminal contribution by Souleles (2004).

In order to compare the effects of different types of economic expectations, we initially enter them into our model separately. In addition, it is apparent that multicollinearity may exist between the five economic expectations variables. To shed light on this, Table 2 shows the correlation matrix among the five types of economic expectations. It is apparent that there is a relatively high correlation between expectations about the economic situation and expectations about the employment situation. However, we also explore the robustness of our findings to including the expectations variables in the model simultaneously, which entails estimating the model with five economic expectations equations rather than a single economic expectations equation.

3.4 Other individual level determinants

It has been well-established in the existing literature that life satisfaction is influenced by a range of individual characteristics (see e.g. Clark and Oswald, 1996). Hence, we complement our analysis with a standard set of variables, X, capturing these characteristics. They include labour market status (employed, self-employed, unemployed, retired, in education, at home), educational attainment (i.e., indicators for whether individuals left school before age 15, between ages 16 to 18, or aged 19 and over), gender, age (and age-squared/100) and marital status (single, married, widowed, divorced/separated). With the exception of being unemployed, we treat all these variables as exogenous.[10]

[10]Unfortunately, personal and household income are not available in this dataset over the whole period of our analysis. We acknowledge that the omission of income from our framework is likely to lead to upward bias in the estimated effects of labour market status. However, we do control for factors such as educational attainment, which are highly correlated with income and likely to mitigate such bias.

3.5 Mediation analysis

To study the direct and indirect effects of austerity on life satisfaction using the framework discussed in Section 2 and summarised in Figure 1, we estimate the following structural equation model:

$$\begin{aligned} LS_{ijt} &= \alpha_0 + \Delta T'_{jt}\alpha_1 + \Delta G'_{jt}\alpha_2 \\ &+ \alpha_3 E^p_{ijt} + \alpha_4 Un_{ijt} + X'_{ijt}\alpha_5 + M'_{jt}\alpha_6 + \tau T + \lambda_j + \epsilon_{ijt} \quad (1) \\ E^p_{ijt} &= \beta_0 + \Delta T'_{jt}\beta_1 + \Delta G'_{jt}\beta_2 + \beta_3 Un_{ijt} + X'_{ijt}\beta_4 + M'_{jt}\beta_5 + \xi^p_{ijt} \quad (2) \\ Un_{ijt} &= \theta_0 + \Delta T'_{jt}\theta_1 + \Delta G'_{jt}\theta_2 + \Gamma'_{ijt}\theta_3 + M'_{jt}\theta_4 + \tau_{ijt} \quad (3) \end{aligned}$$

Where LS_{ijt} and E^p_{ijt} denote the (standardised) life satisfaction and economic expectations of individual i in country j at time t, respectively. The outcome variable, life satisfaction, has been standardised with the mean set to zero and the standard deviation to one to ease interpretation. The superscript, p, indicates the type of economic expectation, as detailed in Section 3.3, reflecting the fact that the Eurobarometer measures five different types of economic expectations. Similarly, Un_{ijt} denotes the probability of individual i in country j being unemployed at time t. M_{jt} represents a vector of macroeconomic controls; following Di Tella et al. (2006), we include the level of GDP growth per capita, the unemployment rate and the rate of inflation in country j at time t. Δ^T_{jt} and Δ^G are two vectors capturing the austerity measures derived from Alesina et al. (2019), as described in detail in Section 3.2. Specifically, each vector includes anticipated and unexpected changes in taxation and government expenditure in country j at time t. In contrast to the macroeconomic controls and austerity measures, X_{ijt} is defined at the individual level and represents a vector of personal characteristics, as described in Section 3.4. Γ_{ijt} is identical to X_{ijt} with the exception that it excludes the political orientation of the individual.[11] The life satisfaction, Eq. (1), also includes time (τ) and country fixed effects (λ_j).[12] Finally, $\epsilon_{ijt}, \xi^p_{ijt}$ and τ_{ijt} are the error terms associated with each equation.

[11] We exclude political orientation from equation (3) as there are no priors to support its inclusion in this part of the model.

[12] Given the complexity of the model, time and country fixed effects are only included in the life satisfac-

The direct effects of austerity on individual life satisfaction, individual economic expectations and the probability of being unemployed at the individual level are captured by the path coefficients $\alpha_{1,2}, \beta_{1,2}$ and $\theta_{1,2}$. In contrast, the computation of the indirect effects of austerity are more complex. Following Baron and Kenny (1986), we use a multiple mediation method, the key feature of which is that it allows many different paths through which austerity affects life satisfaction. Given the focus of this paper, we now detail the indirect effects of austerity (ΔT_{jt} and ΔG_{jt}) on life satisfaction (LS_{ijt}). Specifically, the effect of austerity operating via individual economic expectations is given by $\beta_{1,2} \times \alpha_3$. Similarly, the effects of ΔT_{jt} operating via the probability of being unemployed is given by $(\theta_1 \times \alpha_4) + (\theta_1 \times \beta_3 \times \alpha_3)$.

The structural equation model has been estimated using maximum likelihood. For simplicity, the third equation relating to the probability of being unemployed is estimated as a linear probability model. Finally, standard errors have been clustered at the country and year level.

4 Results

We estimate the structural equation model given by equations (1) to (3) for each measure of economic expectations. In each model, we use the standardised measure of life satisfaction (with mean equal to zero and standard deviation equal to one). It follows from this approach that, whenever we report the estimates of economic expectations and austerity on life satisfaction, we are effectively reporting the average number of standard deviation changes in life satisfaction associated with a "one unit change" in economic expectations and the austerity measures. Recall that, following the existing literature, each economic expectation variable is represented by a linear index that goes from 0 ("worse than last year") to 2 ("better than last year"), so a unit change in economic expectations captures more optimistic, i.e. improved, economic expectations (from 0 to 1 or from 1 to 2).

tion equation. Specifically, in this mediation framework, all equations are estimated simultaneously and the estimates from equations (2) and (3) feed directly into the estimates of the life satisfaction equation. Further, in all equations, we include the set of macroeconomic controls, which to some extent capture the time and country fixed effects.

Table 3 Model 1 summarises the results for expectations regarding a better financial situation, Model 2 for expectations regarding a better personal life situation, Model 3 for expectations regarding a better national economic situation, Model 4 for expectations regarding a better national employment situation and, finally, Model 5 for expectations relating to a better job situation. Hence, the only difference across Models 1 to 5 presented in Table 3 relates to the selected economic expectations variable. The availability of five such measures allows us to explore the robustness of our findings to expectations regarding different economic domains. Table 3 is divided into two panels corresponding to the life satisfaction equation, equation 1 (labelled LS_{ijt} $Eq.1$) in the first panel, and the economic expectations equation, $Eq.2$ in the second panel. For brevity and to focus on our key contributions, for the life satisfaction equation, we only present the effects of the four austerity measures as well as the effects of economic expectations.[13]

For each model, the first column reports the direct effects, this is the respective coefficient estimated in $Eqs.1-3$. In column 2, we report the indirect effects, which measure the amount of mediation, which is calculated as reported in the previous section. The final column reports the total effect, which is the sum of the direct and indirect effects. In the second panel of Table 3, we repeat this structure and present the effects of the austerity measures on each of the economic expectations. [14] For each model, we also report the coefficient of determination (CD) and the R^2 for each regression.

We can draw two main conclusions from our results. Firstly, our findings suggest that there is no direct effect of austerity on life satisfaction from any of the four austerity measures, rather the effect is indirect and operates through changes in economic expectations. Hence, interestingly, our findings suggest that the effects of austerity on life satisfaction operate mainly via the effects of austerity on expectations, with no evidence found to

[13]Table A1 in the Appendix reports the full specification. It is reassuring to note that the sign and statistical significance of the effects of the personal characteristics in the life satisfaction equation are generally in line with the existing literature. Specifically, life satisfaction is found to be increasing in education and decreasing in being unemployed, age has a U-shaped relationship with life satisfaction, and married people report higher life satisfaction. The macroeconomic variables also have the expected sign, e.g. positive for economic growth and negative for the unemployment rate.

[14]For brevity, the estimates of equation 3, which models the probability of unemployment, are provided in Table A1 given that the relationship between life satisfaction and unemployment has been explored extensively in the literature.

support a direct effect of austerity on life satisfaction. This finding is perhaps less surprising than it first appears. Our interpretation is that austerity measures do not have effects *above* and *beyond* those already captured by the rich set of variables included in the model (i.e. changes in the macroeconomic conditions, including other macroeconomic factors captured by the year effects, as well as a host of individual level controls). From an econometric perspective, there is not much variation left to be exploited, hence the direct effect may be positive but not statistically significant. This is exactly why it is crucial to study this relationship using mediation analysis as proposed in this paper since this approach allows the identification of potential mediators. Such findings related to the role of expectations suggest that individuals take account of the temporal aspect of macroeconomic policy such as austerity in terms of such policies shaping their optimism or otherwise for the future. Moreover, it is through this expectations channel that austerity influences life satisfaction. There is some evidence of a relatively small effect of austerity operating via the channel associated with Un_{ijt} (see Table A1). Specifically, being unemployed and economic expectations have a large impact on the individual's life satisfaction. However, only the latter is found to be influenced by the fiscal policy measures.

Secondly, our measures of austerity allow us to explore what type of fiscal policy shapes economic expectations. We find that the measure capturing anticipated changes in government expenditure, ΔG^a, is statistically and economically significant in four out of the five models of economic expectations. For expectations about the financial situation (Model 1) and expectations about the life situation (Model 2), the coefficients associated with ΔG^a are very large and of similar magnitude. An increase in anticipated spending equivalent to 1 percent of GDP (i.e., in line with the mean value) is associated with lower, i.e. less optimistic, economic expectations by -0.174 and -0.172 on the 3-point index, respectively. In contrast, for expectations about the economic situation (Model 3) and expectations regarding the job situation (Model 5), the estimated coefficients differ in magnitude, at -0.085 and -0.143, respectively. Interestingly, it is expectations about the employment situation (Model 4), which is characterised by a statistically insignificant effect, suggesting that ΔG^a influences expectations related to the job situation at the

individual rather than at the national level. As expected, all the estimated coefficients are negative, indicating that austerity policies operating on the expenditure side dampen economic expectations at the individual level.

This negative effect of austerity on economic expectations is then transmitted to life satisfaction. In this sense, economic expectations work as a mediator between fiscal retrenchment and life satisfaction. Specifically, the path between austerity and life satisfaction is mediated via economic expectations by approximately -0.030.[15] For instance, the estimate of -0.033 in Model 1 is obtained by multiplying the direct effect of expectations about their financial situation on life satisfaction, 0.184 by the effect of austerity on expectations about their financial situation, -0.174. This highlights the important role that economic expectations at the individual level play in shaping life satisfaction. A individual who reported improved, i.e. more optimistic, expectations about their financial situation, is also expected, on average, to report higher life satisfaction by 0.184 standard deviations. Moreover, this effect is large, being equivalent, for example, to the estimated effect of being married (in absolute terms). In addition, austerity has statistically significant negative direct and total effects on being optimistic about the future personal financial situation (see Panel B). Our results suggest that there is also some evidence of an indirect relationship between unanticipated changes in government expenditure and life satisfaction, but these effects, *albeit* statistically significant, are rather small in magnitude and smaller than the magnitude of the expected changes in expenditure.

In order to further explore the robustness of our findings and given that the economic expectations variables relate to five distinct areas, ranging from the personal financial situation to the overall macroeconomic situation, we augment the system given by Equations 1 to 3 so as to include all five economic expectations equations within the same system. The new system is then given by: the life satisfaction equation; the probability of unemployment equation and the five expectations equations. In this extended model, all five expectations (as opposed to just one) enter into the life satisfaction equation. The results are presented in Table 4 and are in line with those presented in Table 3 and dis-

[15] As shown in Table A1, the effect that runs via being unemployed and the individual's expectations about their financial situation is equal to -0.001, which is statistically and economically insignificant.

cussed above. We find that an anticipated (and, to a lesser extent, an unexpected) change in government expenditure affects life satisfaction and that this relationship is mediated by economic expectations. As expected, the coefficient is larger than that found with entering the expectations individually since the new coefficient is the sum of the effects of the interactions between LS_{ijt} and all five E^p_{ijt}, plus E^p_{ijt} and the fiscal policy of interest.[16]

In summary, our findings suggest an important role of economic expectations in transmitting the effects of austerity, in the case of government expenditure changes, to individual life satisfaction. However, it is important to acknowledge that our model and the data available do not allow us to provide an explanation as to why government expenditure, rather than taxation, matters for life satisfaction. We can, however, conjecture that expenditure cuts are more visible (than tax increases) to large segments of the population. For instance, a negative change in expenditure is usually reflected in a reduction in or a complete suppression of a public service, thereby often attracting political and public debate.

5 Conclusions

In this paper, we have explored the relationship between fiscal consolidation and life satisfaction using a large repeated cross-section dataset drawn from the Eurobarometer from 1999 to 2014, covering 12 countries and comprising 256,123 observations. It is apparent that the interaction between austerity, life satisfaction, economic expectations and the macroeconomic environment is highly complex. Hence, in order to disentangle the direct and indirect effects at play, we have employed mediation analysis. Our modelling approach makes two important contributions to existing work in this field. Firstly, we have explored the role of austerity policies in influencing life satisfaction and, secondly, we have explored the effects of economic expectations at the individual level on life satisfaction.

Our findings, which are robust across a range of measures of individuals' economic

[16]For a further robustness check, we use binary expectations variables, as opposed to expectations defined on a three point scale. For each economic expectations variable, the new variable takes the value of one if expectations about the future are same or better, zero otherwise. The results are in line with those presented in Tables 3 and 4 and are available upon request.

expectations covering individual and national economic prospects, support an inverse association between austerity, as measured by an unexpected change in the country's fiscal stance, and life satisfaction, operating via economic expectations. Specifically, our findings suggest that austerity changes the individual's level of optimism about his/her economic situation and the country's economic prospects; this, in turn has a negative effect on life satisfaction. Moreover, our analysis suggests that life satisfaction is negatively affected by changes in government expenditure rather than by changes in taxation. It may be the case that changes in government expenditure are visible to the large group of the population and, therefore, they may have a larger impact. On the other hand, changes in taxation, such as an increase in VAT or income tax, are not immediately observable to some.[17]

With respect to policy implications, evaluating whether austerity measures negatively or positively affect life satisfaction can inform policymakers about the wider effects of both economic and social policy and, ultimately, on the voting intentions of the individuals. Furthermore, if austerity measures are correlated with a deterioration in wellbeing and life satisfaction, it may be the case that this leads to further economic effects such as reductions in worker productivity (e.g. Bryson et al., 2014). When evaluating the effects of austerity measures, it is thus important to take such effects on individual wellbeing into consideration rather than purely concentrating on macroeconomic and financial issues. Consideration of the wider effects of austerity measures could potentially enhance the effectiveness of social and economic policy serving to narrow social inequalities and enhance health outcomes.

An important avenue for further research relates to furthering our understanding of how expectations are formed at the individual level as well as exploring the extent of understanding of the nature and implications of macroeconomic policy amongst the wider public.

[17] An alternative explanation is that individuals may suffer from a form of money illusion, in this case relating to the distinction between disposable income and nominal income.

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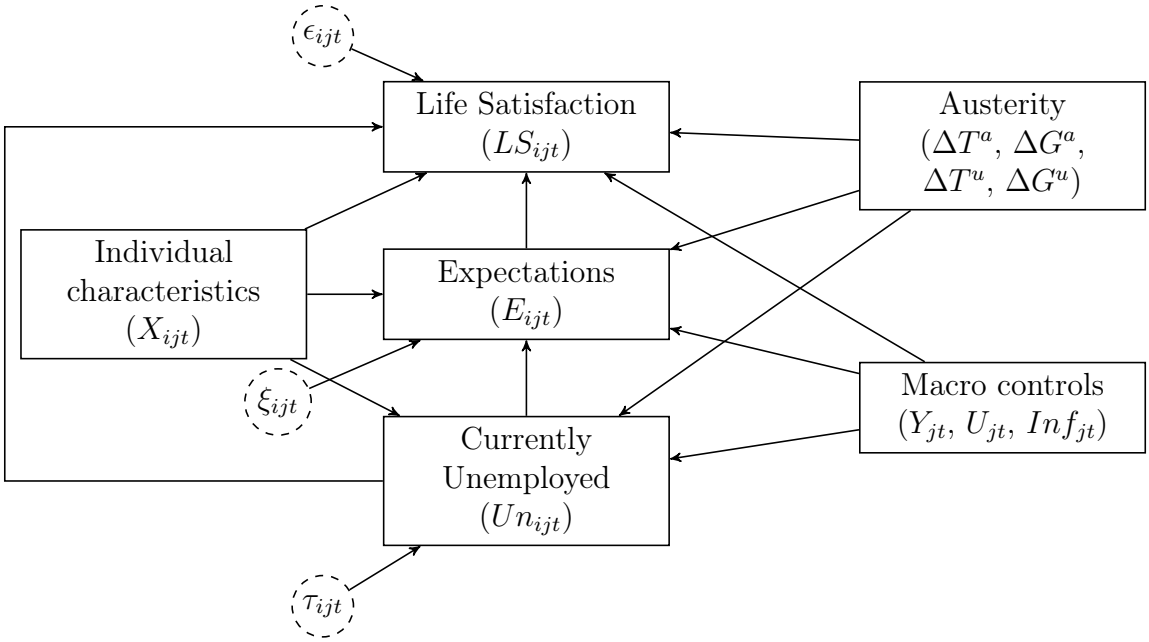

Figure 1: Path diagram

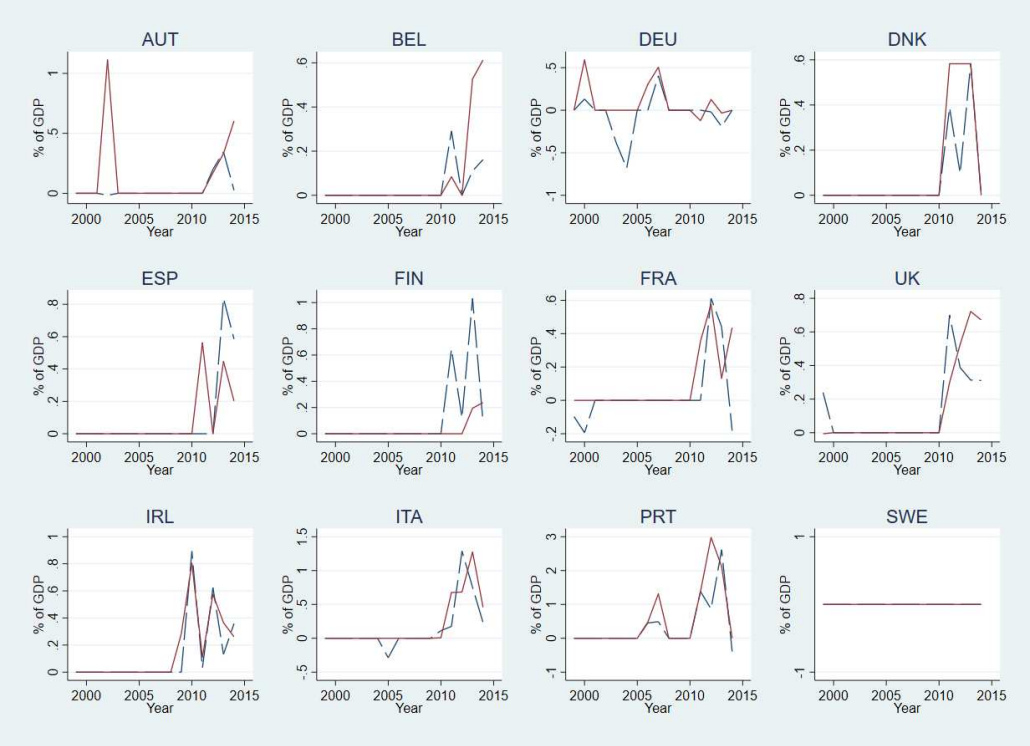

Figure 2: Positive values in the series represented by the solid line reflect the anticipated fiscal revenue from government spending cuts, ΔT^a, while the dotted line represents revenue from tax rises, ΔG^a. Data are expressed as % of GDP.

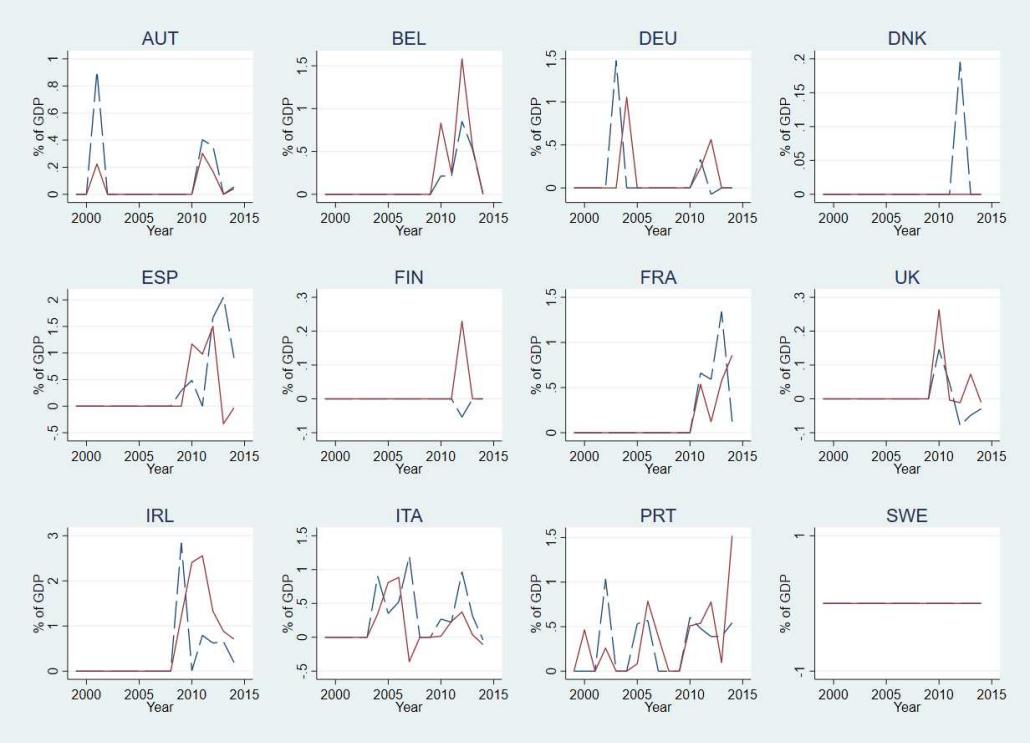

Figure 3: Positive values in the series represented by the solid line reflect the unexpected fiscal revenue from government spending cuts, ΔT^u, while the dotted line represents revenue from tax rises, ΔG^u. Data are expressed as % of GDP.

Table 1: Descriptive statistics

	Mean	Std. Dev.	Min	Max
		Austerity measures		
ΔT^a	0.044	0.196	-0.680	1.383
ΔG^a	0.090	0.276	-0.122	2.978
ΔT^u	0.126	0.393	-0.079	2.844
ΔG^u	0.131	0.380	-0.360	2.555
		Individual characteristics		
Life satisfaction	3.098	0.719	1	4
Exp.Financial situation	1.047	0.642	0	2
Exp.Job situation	1.091	0.559	0	2
Exp.Employment situation	0.833	0.778	0	2
Exp.Life situation	1.164	0.646	0	2
Exp.Economic situation	0.864	0.758	0	2
Age	47.454	17.649	15	99
Age^2/100	25.633	17.521	2	98
Education <15	0.243		0	1
Education 15-18	0.376		0	1
Education 19+	0.381		0	1
Retired	0.245		0	1
In education	0.071		0	1
At home	0.080		0	1
Unemployed	0.069		0	1
Self-employed	0.078		0	1
Employed	0.457		0	1
Male	0.479		0	1
Married	0.629		0	1
Divorced/Separated	0.085		0	1
Widowed	0.080		0	1
Single	0.206		0	1
Left	0.288		0	1
Right	0.351		0	1
Centre	0.361		0	1
		Macro controls		
GDP growth	1.000	3.154	-8.269	10.732
Unemployment rate	7.947	3.198	3.477	24.787
Inflation	1.837	1.189	-1.693	5.279

Notes: This table reports the non-standardized life satisfaction variable.

Table 2: Correlations among economic expectations

	Financial sit.	Job sit.	Employment sit.	Life sit.	Economic sit.
Exp. Financial situation	1.000				
Exp. Job situation	0.549	1.000			
Exp. Employment situation	0.387	0.323	1.000		
Exp. Life situation	0.576	0.514	0.322	1.000	
Exp. Economic situation	0.425	0.311	0.626	0.370	1.000

Table 3: Austerity - standardised life satisfaction and economic expectations

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
		LS_{ijt} Eq.			LS_{ijt} Eq.			LS_{ijt} Eq.			LS_{ijt} Eq.			LS_{ijt} Eq.	
ΔT^a	0.000	0.005	0.005	0.000	0.002	0.001	-0.005	0.011	0.007	-0.005	0.015	0.010	-0.003	-0.002	-0.005
	(0.051)	(0.014)	(0.056)	(0.051)	(0.014)	(0.056)	(0.051)	(0.010)	(0.053)	(0.051)	(0.011)	(0.054)	(0.050)	(0.012)	(0.054)
ΔG^a	0.026	**-0.033**	-0.007	0.021	**-0.031**	-0.010	0.021	-0.011	0.010	0.023	-0.010	0.013	0.024	**-0.024**	0.000
	(0.024)	(0.010)	(0.025)	(0.024)	(0.010)	(0.025)	(0.025)	(0.005)	(0.026)	(0.026)	(0.006)	(0.026)	(0.024)	(0.008)	(0.025)
ΔT^u	-0.010	-0.010	0.021	0.026	-0.008	0.018	0.026	-0.009	0.013	0.019	-0.005	0.013	0.021	-0.004	0.017
	(0.020)	(0.008)	(0.026)	(0.019)	(0.010)	(0.027)	(0.020)	(0.005)	(0.023)	(0.020)	(0.005)	(0.023)	(0.020)	(0.007)	(0.025)
ΔG^u	0.029	**-0.014**	0.015	0.030	**-0.014**	0.016	0.029	-0.013	0.016	0.031	**-0.014**	0.016	0.028	-0.011	0.017
	(0.023)	(0.006)	(0.026)	(0.022)	(0.007)	(0.027)	(0.022)	(0.005)	(0.023)	(0.022)	(0.005)	(0.023)	(0.022)	(0.006)	(0.025)
Exps.	**0.184**	(no path)		**0.176**	(no path)		**0.116**	(no path)		**0.109**	(no path)		**0.161**	(no path)	
	(0.011)			(0.012)			(0.006)			(0.006)			(0.013)		
	Exp. Financial sit.			Exp. Life sit.			Exp. Economic sit.			Exp. Employment sit.			Exp. Job sit.		
ΔT^a	0.041	0.000	0.041	0.025	0.000	0.025	0.120	0.000	0.120	0.156	0.000	0.156	0.004	0.000	0.005
	(0.059)	(0.000)	(0.059)	(0.061)	(0.000)	(0.061)	(0.076)	(0.000)	(0.076)	(0.088)	(0.000)	(0.088)	(0.053)	(0.001)	(0.052)
ΔG^a	**-0.174**	0.000	**-0.174**	**-0.172**	0.000	**-0.171**	**-0.085**	0.000	**-0.085**	-0.088	0.000	-0.088	**-0.143**	0.000	**-0.143**
	(0.046)	(0.000)	(0.046)	(0.050)	(0.000)	(0.050)	(0.043)	(0.000)	(0.043)	(0.053)	(0.000)	(0.053)	(0.043)	(0.000)	(0.043)
ΔT^u	**-0.065**	0.000	**-0.065**	-0.057	0.000	-0.057	**-0.090**	0.000	**-0.090**	-0.066	0.000	-0.066	-0.036	0.000	-0.036
	(0.031)	(0.000)	(0.031)	(0.044)	(0.000)	(0.044)	(0.033)	(0.000)	(0.033)	(0.035)	(0.000)	(0.035)	(0.027)	(0.000)	(0.026)
ΔG^u	-0.047	0.000	-0.047	-0.051	0.000	-0.050	-0.066	0.000	-0.066	-0.082	0.000	-0.082	-0.035	0.001	-0.035
	(0.026)	(0.000)	(0.026)	(0.030)	(0.000)	(0.030)	(0.041)	(0.000)	(0.041)	(0.043)	(0.000)	(0.043)	(0.028)	(0.000)	(0.027)
N. obs.	256,213			256,213			256,213			256,213			256,213		
Coef of Det.	0.318			0.336			0.291			0.302			0.327		
R^2															
Exp. Fin. sit.				0.101											
Exp. Life sit.	0.076														
Exp. Econ. sit.							0.035								
Exp. Empl. sit.										0.051					
Exp. Job sit.													0.084		
Unemployed	0.098			0.098			0.098			0.098			0.098		
LS_{ijt}	0.225			0.223			0.220			0.220			0.223		

Notes: ΔT^a, ΔG^a, ΔT^u and ΔG^u are anticipated changes in taxes, anticipated changes in expenditure, unexpected changes in taxes and unexpected changes in expenditure, respectively. The omitted categories for the sets of dummy variables are as follows: female, education <15 years, employed, center (political affiliation) and single. The LS equations included time and country fixed effect. In bold are estimates significant at $p < 0.05$.

Table 4: Austerity - standardised life satisfaction and all economic expectations

	Life satisfaction equation		
	Direct	Indirect	Total
ΔT^a	0.004	0.013	0.017
	(0.050)	(0.018)	(0.058)
ΔG^a	0.024	**-0.043**	-0.019
	(0.024)	(0.012)	(0.026)
ΔT^u	0.030	-0.016	0.015
	(0.019)	(0.011)	(0.028)
ΔG^u	0.032	**-0.021**	0.012
	0.023	(0.008)	0.027
Exp. Financial situation	**0.093**	(no path)	
	0.006		
Exp. Job situation	**0.034**	(no path)	
	0.007		
Exp. Employment situation	**0.036**	(no path)	
	0.005		
Exp. Life situation	**0.087**	(no path)	
	0.009		
Exp. Economic situation	**0.032**	(no path)	
	0.004		
N. obs.	256213		
Coef. of Det. (CD)	0.463		
R^2			
Exp. Financial situation	0.076		
Exp. Job situation	0.084		
Exp. Employment situation	0.051		
Exp. Life situation	0.101		
Exp. Economic situation	0.035		
Unemployed	0.098		
LS_{ijt}	0.219		

Notes: Table 4 follows the same structure as Table 3, where it is assumed that expectations have a direct rather than an indirect effect on life satisfaction. ΔT^a, ΔG^a, ΔT^u and ΔG^u are anticipated changes in taxes, anticipated changes in expenditure, unexpected changes in taxes and unexpected changes in expenditure, respectively. The omitted categories for the sets of dummy variables are as follows: female, education <15 years, employed, center (political affiliation) and single. The LS equations included time and country fixed effect. In bold are the estimates significant at $p < 0.05$.

Appendix

Table A1: Austerity - standardised life satisfaction and better financial situation

	Better Financial Situation Eq.			**Unemployed Eq.**			**Life Satisfaction Eq.**		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
ΔT^a	0.041	0.000	0.041	0.005	(no path)	0.005	0.000	0.005	0.005
	(0.059)	(0.000)	(0.059)	(0.01)		(0.01)	(0.051)	(0.014)	(0.056)
ΔG^a	**-0.174**	0.000	**-0.174**	0.001	(no path)	0.001	0.026	**-0.033**	-0.007
	(0.046)	(0.000)	(0.046)	(0.005)		(0.005)	(0.024)	(0.01)	(0.025)
ΔT^u	**-0.065**	0.000	**-0.065**	-0.004	(no path)	-0.004	0.026	-0.010	0.016
	(0.031)	(0.000)	(0.031)	(0.005)		(0.005)	(0.02)	(0.008)	(0.026)
ΔG^u	-0.047	0.000	-0.047	**0.011**	(no path)	**0.011**	0.029	**-0.014**	0.015
	(0.026)	(0.000)	(0.026)	(0.005)		(0.005)	(0.023)	(0.006)	(0.026)
Inflation	0.009	0.000	0.009	-0.002	(no path)	-0.002	**0.016**	0.003	**0.019**
	(0.01)	(0.000)	(0.01)	(0.001)		(0.001)	(0.006)	(0.002)	(0.006)
GDP growth	**0.013**	0.000	**0.013**	-0.001	(no path)	-0.001	-0.005	**0.003**	-0.002
	(0.004)	(0.000)	(0.004)	(0.001)		(0.001)	(0.003)	(0.001)	(0.003)
Un. rate	-0.002	0.000	**-0.002**	**0.007**	(no path)	**0.007**	**-0.020**	**-0.004**	**-0.024**
	(0.004)	(0.000)	(0.004)	(0.001)		(0.001)	(0.004)	(0.001)	(0.004)
Male	**0.025**	0.000	**0.025**	**-0.007**	(no path)	**-0.007**	**-0.032**	**0.008**	**-0.024**
	(0.004)	(0.000)	(0.004)	(0.002)		(0.002)	(0.005)	(0.001)	(0.005)
Age	**-0.017**	0.000	**-0.017**	**-0.004**	(no path)	**-0.004**	**-0.017**	**-0.001**	**-0.019**
	(0.001)	(0.000)	(0.001)	(0.000)		(0.000)	(0.001)	(0.000)	(0.001)
Age^2/100	**0.011**	0.000	**0.011**	**0.003**	(no path)	**0.003**	**0.020**	0.000	**0.020**
	(0.001)	(0.000)	(0.001)	(0.000)		(0.000)	(0.001)	(0.000)	(0.001)
Education 15-18	**0.060**	0.000	**0.060**	**-0.011**	(no path)	**-0.011**	**0.109**	**0.017**	**0.126**
	(0.016)	(0.000)	(0.016)	(0.003)		(0.003)	(0.009)	(0.004)	(0.012)
Education 19+	**0.138**	0.001	**0.139**	**-0.055**	(no path)	**-0.055**	**0.249**	**0.054**	**0.302**
	(0.019)	(0.001)	(0.019)	(0.004)		(0.004)	(0.009)	(0.006)	(0.013)
Married	0.007	0.001	0.008	**-0.053**	(no path)	**-0.053**	**0.188**	**0.029**	**0.217**
	(0.005)	(0.001)	(0.005)	(0.003)		(0.003)	(0.009)	(0.002)	(0.009)
Divorced/Separated	0.008	0.000	0.008	-0.002	(no path)	-0.002	**-0.154**	0.002	**-0.152**
	(0.007)	(0.000)	(0.007)	(0.003)		(0.003)	(0.011)	(0.002)	(0.012)
Widowed	0.016	0.001	**0.016**	**-0.051**	(no path)	**-0.051**	**-0.073**	**0.029**	**-0.044**
	(0.008)	(0.001)	(0.008)	(0.003)		(0.003)	(0.012)	(0.002)	(0.012)
Retired	**-0.043**	0.001	**-0.042**	**-0.127**	(no path)	**-0.127**	**-0.068**	**0.057**	-0.011
	-0.007	(0.002)	(0.007)	(0.005)		(0.005)	(0.009)	(0.005)	(0.011)
In education	**0.047**	0.002	**0.049**	**-0.218**	(no path)	-0.218	**0.304**	**0.121**	**0.425**
	(0.022)	(0.003)	(0.022)	(0.008)		(0.008)	(0.014)	(0.007)	(0.018)
At home	-0.004	0.001	-0.003	**-0.138**	(no path)	**-0.138**	**-0.078**	**0.070**	-0.007
	(0.01)	(0.002)	(0.01)	(0.006)		(0.006)	(0.009)	(0.005)	(0.012)
Self-employed	**0.050**	0.001	0.052	**-0.121**	(no path)	**-0.121**	**0.020**	**0.071**	**0.09**1
	(0.007)	(0.001)	(0.007)	(0.005)		(0.005)	(0.008)	(0.004)	(0.009)
Unemployed	-0.010	(no path)	-0.010				**-0.513**	-0.002	**-0.515**
	(0.012)		(0.012)				(0.02)	(0.002)	(0.02)
Left	**-0.012**	(no path)	**-0.012**				**-0.060**	**-0.002**	**-0.062**
	(0.005)		(0.005)				(0.006)	(0.001)	(0.006)
Right	0.009	(no path)	0.009				**-0.016**	0.002	**-0.014**
	(0.006)		(0.006)				(0.006)	(0.001)	(0.006)
Exp. Financial sit.							**0.184**	(no path)	**0.184**
							(0.011)		(0.011)

Notes: ΔT^a, ΔG^a, ΔT^u and ΔG^u are anticipated changes in taxes, anticipated changes in expenditure, unexpected changes in taxes and unexpected changes in expenditure, respectively. The omitted categories for the sets of dummy variables are as follows: female, education <15 years, employed, center (political affiliation) and single. The LS equations included time and country fixed effect. In bold are the estimates significant at $p < 0.05$.