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THE ECONOMICS OF WALKING ABOUT AND PREDICTING UNEMPLOYMENT

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ABSTRACT

Unemployment is notoriously difficult to predict. In previous studies, once country fixed effects are added to panel estimates, few variables predict changes in unemployment rates. Using panel data for 29 European countries over 439 months between 1985 and 2021 in an unbalanced country*month panel of just over 10000 observations, we predict changes in the unemployment rate 12 months in advance based on individuals' fears of unemployment, their perceptions of the economic situation and their own household financial situation. Fear of unemployment predicts subsequent changes in unemployment 12 months later in the presence of country fixed effects and lagged unemployment. Individuals' perceptions of the economic situation in the country and their own household finances also predict unemployment 12 months later. Business sentiment (industry fear of unemployment) is also predictive of unemployment 12 months later. The findings underscore the importance of the "economics of walking about". The implication is that these social survey data are informative in predicting economic downturns and should be used more extensively in forecasting. We also generate a 29 country-level annual panel on life satisfaction from 1985-2020 from the World Database of Happiness and show that the consumer level fear of unemployment variable lowers well-being over and above the negative impact of the unemployment rate itself. Qualitative survey metrics were able to predict the Great Recession and the economic slowdown in Europe just prior to the COVID19 pandemic.

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1. Introduction

"If this thing was so large how come nobody could forsee it?"
Queen Elizabeth II at the opening of LSE's New Academic Building, 6th November 2008

Professor Luis Garicano was reported to have responded: "*at every stage, someone was relying on somebody else and everyone thought they were doing the right thing*".[1] He was subsequently reported as saying: "*I think the main answer is that people were doing what they were paid to do, and behaved according to their incentives, but in many cases they were being paid to do the wrong things from society's perspective*."[2] Several economists followed up three months later in a letter to the Queen from members of the British Academy which concluded: "*In summary, Your Majesty, the failure to forsee the timing, extent and severity of the crisis and to head it off, while it had many causes, was principally a failure of the collective imagination of many bright people….to understand the risks to the system as a whole*."[3]

The Queen was subsequently 'doorstepped' four years later in a visit to the Bank of England by the Bank's financial policy expert Sujit Kapadia who suggested the crash was due, in part, to City complacency and poor regulation. The Queen was reported to have replied: "*People got a bit lax…perhaps it is difficult to forsee [a financial crisis]*." Kapadia is reported to have agreed saying that crises were a bit like earthquakes and flu pandemics in being rare and difficult to predict.[4] Subsequent events seem to have borne out the point regarding pandemics. And it is standard in economics to characterize recessions in much the same way as Kapadia did, essentially as random shocks which, by construction, cannot be predicted. We argue here that this is a mistake. In our view the Great Recession was eminently predictable, while the COVID pandemic was not. However European economies were particularly vulnerable given the evidence that they were slowing from 2017-2020, as predicted by the qualitative data we present in this paper.

Several economists such as Nouriel Roubini did in fact spot the recession coming but were ignored.[5] The recession started in the US housing market in 2006 and spread, just as the Great Depression did (Lawton, 2019). As we show below, early warning signs of the impending Great Recession were apparent in business and consumer surveys and Purchasing Manager Indices (PMI) with similar stories from around the globe, but only a very few policymakers were willing to take them at face value that they signaled an imminent recession (Blanchflower, 2008).

The early literature on the causes of unemployment, reviewed in Section 2.1, emphasized the role of labor market institutions in either causing or exacerbating the conditions leading to recession. These were predominantly time-series country-level studies with a small number of country-year observations and, as noted below, were heavily criticized at the time and subsequently for their lack of robustness. Casual observation suggests the countries that were most badly affected by the Great Recession had high exposure to international trade (e.g. Sweden), large financial sectors

[1] See, for example https://www.dailymail.co.uk/news/article-1083290/Its-awful--Why-did-coming--The-Queen-gives-verdict-global-credit-crunch.html
[2] https://www.theguardian.com/uk/2009/jul/26/monarchy-credit-crunch
[3] Letter dated 22nd July 2009 https://www.ma.imperial.ac.uk/~bin06/M3A22/queen-lse.pdf
[4] https://www.theguardian.com/uk/2012/dec/13/queen-financial-crisis-question
[5] Stephen Mihm, 'Dr Doom', Washington Post, August 15th, 2008.

(Iceland, the United States, the United Kingdom), housing bubbles (Spain, the United Kingdom, Ireland) or a combination of these. European countries with the institutions critiqued in the earlier literature did relatively well. The two countries that experienced the greatest rises in unemployment - Greece and Spain – did face important rigidities creating labor market frictions, but these were in their housing markets, inducing a lack of labor mobility (Blanchflower and Oswald, 2013). Amable and Mayhew (2011) found that unemployment in the Great Recession rose less in countries with high collective bargaining coverage and strict employment protection legislation.

In recent years analysts seeking to predict economic downturns have placed less emphasis on country* year time-series analysis, turning instead to high-frequency qualitative survey data to capture the sentiments of labor market actors, consumers, suppliers and business agents. As we discuss in Section Two these data have been somewhat successful in predicting economic downturns, suggesting they contain more information, or more timely information, than traditional data used to forecast economic outcomes. We argue that this is an instance of what Blanchflower (2021) termed "the economics of walking about": economic actors on the ground who are close to economic transactions, possess more, or different, or more timely information than policy makers and statisticians operating 'on high' in centralized locations. By aggregating those perceptions to country-month or country-year means analysts are leveraging insights from "*the wisdom of crowds*" which, as Surowiecki (2005) noted, often produces more accurate assessments of situations than those offered by 'experts'.

We contribute to this literature using panel data for 29 European countries - Austria; Belgium; Bulgaria; Croatia; Cyprus; Czechia; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovakia; Slovenia; Spain; Sweden; Turkey and the UK - over 439 months between January 1985 and July 2021 to predict changes in the unemployment rate 12 months in advance based on individuals' fears of unemployment, their perceptions of the economic situation and their own household financial situation. These qualitative survey data of individuals' expectations about unemployment, perceptions of the economic situation, and their household finances are fairly highly correlated, and also tend to accord with employers' perceptions of their workers' employment prospects over the coming months (in manufacturing, construction, services and retail), and with consumer expectations. Nevertheless, all these metrics are independently statistically significant in predicting unemployment 12 months later.

We focus on individuals' fears of unemployment which predict subsequent changes in unemployment 12 months later in the presence of country fixed effects and lagged unemployment. Individuals' perceptions of the economic situation in the country and their own household finances also predict unemployment 12 months later. Business sentiment (industry fear of unemployment) is also predictive of unemployment 12 months later. Firms' views on what will happen to employment in the months ahead also play an independent role; the lower they are the higher is unemployment months ahead.

The implication is that these social survey data are informative in predicting economic downturns and should be used more extensively in forecasting. These findings underscore the importance of the "economics of walking about" and suggest that global recessions such as the Great Recession

are not simply sudden random shocks to the economy. Rather, they unfold gradually and can be predicted in advance with the right data. Of course, the COVID outbreak was unforeseeable – although some commentators such as Bill Gates envisaged a pandemic at some point, they could not have foreseen the timing and nature of the COVID pandemic.[6] And yet, as we show below, the qualitative survey indicators predicted a downturn in the global economy in advance, even in the absence of the pandemic.

With hindsight it seems the 2008 Great Recession was eminently predictable, especially after its onset in the United States housing market in 2006 and more broadly throughout 2007. It spread in similar ways around the world. In retrospect, it is hard to see why, when we had the data, the economics profession missed it.

2. The Economics of Walking About (EWA)

2.1: The Unemployment Debate in the 1980s, 1990s and early 2000s

Although the Great Recession revived debate about the role of economics in predicting economic downturns, it has been the concern of economists for quite some time. In the 1980s and 1990s economists puzzled over why unemployment in Europe was so much higher than it was in the United States. The prevailing orthodoxy was that unemployment in Europe had been especially high because of rigidities in the labor market (Blanchard and Wolfers, 2000; Nickell, 1997; Layard and Nickell, 1986; Bean, 1994). The claim was that high unemployment-related benefits and the presence of unions exacerbated unemployment by creating nominal wage rigidities, thus limiting economies' ability to adjust the price of labor when demand for labor declined. This, in turn, generated long-term unemployment. The problem though with this story was that countries like Germany. Italy and Greece, had low levels of unionization, job protection and unionization rates.

For example, Blanchard and Wolfers (2000) argued that "*the interaction of shocks and institutions does a good statistical job of fitting the evolution of unemployment both over time and across countries*". Unfortunately, empirical estimates of such relationships using small sample macro time-series data were not robust. As Blanchflower (2001: 388) argued the models were over-fitted because they had few data points and many variables. Because unionization, welfare systems and other institutions varied little over time they contributed little in explaining changing economic conditions once estimation moved beyond macro time series and permitted the inclusion of country and year effects (Blanchflower and Oswald, 1994). In their review of the evidence in 1995 the International Labor Organization (1995: 20) concluded:

> *"The foregoing review of the evidence suggests that labour market rigidities have not been an underlying cause of past labour market performance. Labour market performance has deteriorated since the first oil shock irrespective of differences in labour market regulation, suggesting that a more fundamental common factor (or factors) has been at work".*

[6] https://www.wsj.com/articles/bill-gates-coronavirus-vaccine-covid-19-11589207803?mod=tech_lead_pos2

Despite these critiques, when they returned to the subject in the mid-2000s with an analysis of unemployment in OECD countries from the 1960s to the 1990s Nickell et al. (2005) concluded:

> *"Our results indicate…broad movements in unemployment across the OECD can be explained by shifts in labour market institutions…interactions between average values of these institutions and shocks make no significant additional contribution to our understanding of OECD unemployment changes"* (2005: 1).

They were thus challenging the conclusion Blanchard and Wolfers (2000) came to (see above) about the interaction between institutions and shocks, but they maintained those institutions (and changes in them) played a direct role in explaining movements in country level unemployment over the longer-term. Their conclusions rely primarily on a 20-country panel of annual observations of the unemployment rate over the period 1966-1995.[7] It contains a large number of parameters including time dummies, country dummies and country specific time trends.

Once again, this view came in for heavy criticism. Howell et al. (2007) econometrically examined the impact of these rigidity variables, or what they call Protective Labor Market Institutions (PLMIs) and concluded that:

> *"while significant impacts for employment protection, benefit generosity, and union strength have been reported, the clear conclusion from our review of these studies is that the effects for the PLMIs is clearly not robust, with widely divergent coefficients and levels of significance."*

Indeed, in his published comments on the Howell et al. article, Jim Heckman (2007) argues that the authors "...are convincing in showing the fragility of the evidence on the role of labour market institutions in explaining the pattern of European unemployment, using standard econometric methodology."

Richard Freeman (2007) came to similar conclusions, finding the evidence for the impact of these institutional variables less than convincing. Referring directly to Nickell et al. (2005) he says:

> "*as economists have examined the evidence more critically, they have rejected these strong claims in favor of a more cautious stance about what the evidence shows about the impact of institutions on aggregate economic outcomes*".

He concludes (2007: 20):

> "*despite considerable effort, researchers have not pinned down the effects, if any, of institutions on other aggregate economic outcomes, such as unemployment and employment"*.

Year effects also took away any impact of long-term unemployment which was positively correlated with high unemployment. Machin and Manning (1999) in their study of long-term

[7] Although their Table 5 is labelled 1961-1995, the models contain only 600 observations which is the 20 countries over the 30 years between 1966 and 1995, as is apparent from their Table 6.

unemployment in Europe concluded that "*long-term unemployment is not a problem independent of unemployment itself.*" The combination of country and year effects reduced to insignificance institutional differences by country, which changed little over time. Union density, for example, is not significant in US state*year unemployment equations (Blanchflower and Oswald, 2009).

Concerns regarding the robustness of such models, together with research indicating labor institutions had equivocal effects on aggregate economic outcomes, led some economists to emphasize the value of adopting alternative estimation techniques using micro-data to further advance knowledge on the causes of unemployment, even before the Great Recession (Freeman, 2007).

2.2: The Great Recession

Blanchflower (2007) first coined the phrase 'the economics of walking about' in a Bank of England Quarterly Bulletin when, in his capacity as a Member of the Bank's Monetary Policy Committee, he was engaged in discussions with others on the MPC and at the Bank about the merits of listening to economic actors on the ground - visiting them and analyzing their attitudes and expectations in qualitative social survey data - to help form opinions about economic trends. Whilst a seemingly uncontroversial proposition for most social scientists, Blanchflower's contention was met by scepticism among some economists schooled in macro-modelling which tended to give primacy to theories about the way market economies *should* operate, as opposed to observing how they actually performed based on empirical observation. The distinction is not inherent to macro-economics but reflects a traditional stance among macro-economic practitioners. As Larry Summers stated thirty years ago:

> *'Good empirical evidence tells its story regardless of the precise way in which it is analyzed. In large part it is its simplicity that makes it persuasive. Physicists do not compete to find more elaborate ways to observe falling apples. Instead, they have made progress because theory has sought inspiration from a wide range of empirical phenomena. Macroeconomics could progress in the same way. But progress is unlikely as long as macroeconomists require the armor of a stochastic pseudo-world before doing battle with evidence from the real one'.* (Summers, 1991: 146).

What might have appeared to be a fairly arcane spat among economists – albeit economists responsible for the Bank hitting its inflation target through monetary policy – soon became a very real concern as those economists considered the strength of the UK economy and its prospects in late 2007 and early 2008. Judgements differed as to whether the UK was entering recession or not and thus interest rate policy. In April 2008 Blanchflower warned:

> *'We are probably in the grip of world forces that are greater than most people realise. Forecasting is thus very difficult at such times. I believe more action is needed to prevent the UK falling into recession.. Monetary policy in my view still remains restrictive currently, and we need to take action to loosen policy sooner rather than later'* (Blanchflower, 2008: 2).

He had come to this conclusion based on the EWA, not only in the UK, but also in the United States. Blanchflower (2008) presented a time series from qualitative surveys for the United States such as consumer confidence that began trending down in 2007, especially in relation to the housing market, a trend that subsequently translated into movements in the hard data relating to house prices and number of properties sold.[8] The United States does not possess a disaggregated monthly data series by state on the fear of unemployment so we are unable to track that although it does have national estimates such the Conference Board's Employment Trends Index.[9]

Blanchflower (2008) had realized that a similar story was emerging for the UK, consistent with the emergence of a global recession. Based on EWA he argued on April 28th, 2008, that both the UK and US were in recession.

> *"For some time now, I have been gloomy about prospects in the United States, which now seems clearly to be in recession. I believe there are a number of similarities between the UK and the United States which suggest that in the UK we are also going to see a substantial decline in growth, a pick-up in unemployment, little if any growth in real wages, declining consumption growth driven primarily by significant declines in house prices. The credit crunch is starting to hit and hit hard."* (April 28th, 2008, p.16)

And later

> "*Developments in the UK are starting to look eerily similar to those in the US six months or so ago. There has been no decoupling of the two economies: contagion is in the air. The US sneezed and the UK is rapidly catching its cold."*
> (April 28th, 2008, p.21)."

The great advantage of qualitative measures when assessing economic trends is that they are not subject to the revisions made to many quantitative series. This is a particular problem at turning points in the cycle: these are precisely the moments policy makers want to be able to identify, preferably in advance, to take appropriate evasive or remedial action.

In the UK for example we now know that the Great Recession started in Q2 2008. GDP growth for that quarter was first reported in July 2008 as 0.2 (see the top left-hand corner of the table below). The latest estimate for that quarter is -0.6 (bottom left-hand corner of the table). Of note, is that the +0.2 was revised to zero in August 2008 but it took until June 2009 for it to be revised negative.

The ONS estimated in January 2009 that the recession started in the third quarter of 2008, based on two consecutive quarters of negative growth as there was negative growth in both the third and fourth quarters. The revision to a negative number meant that it wasn't until June 2009 based on GDP data that we knew that the recession had started fifteen months earlier in April 2008.

[8] These data, which show what was known in April 2008, are presented here as Appendix Tables 1 and 2. They show that the slowdown first started in the US housing market, spread to other qualitative measures such as consumer confidence and then to quantitative measures. A few months later exactly the same path occurred in the UK.
[9] https://conference-board.org/data/eti.cfm

Estimates for Q3 and Q4 have also been revised down and especially so for Q3 from -0.5% to -1.6% and from -1.5% to -2.1% in Q4.[10] The revisions meant that the start of the recession was revised back to Q2 from Q3.

UK Quarterly GDP growth rate (Q/Q%)

	Q22008	Q32008	Q42008
Jul-08	0.2		
Aug-08	0.0		
Sept-08	0.0		
Oct-08	0.0	-0.5	
Nov-08	0.0	-0.5	
Dec-08	0.0	-0.6	
Jan-09	0.0	-0.6	-1.5
Feb-09	0.0	-0.7	-1.5
Mar-09	0.0	-0.7	-1.6
Apr-09	0.0	-0.7	-1.6
May-09	0.0	-0.7	-1.6
Jun-09	-0.1	-0.7	-1.8
Latest	-0.6	-1.6	-2.1

2.3. How the UK Followed the US into Recession in 2007/8

A recession is usually determined based on two successive negative quarters of GDP growth. This was not the case in the US where the NBER Business Cycle Dating Group called it for December 2007 as did the Sahm (2019) rule.

Table 1 sets out the main labor market developments for the US in 2006-2009 and then again for 2020 and 2021 data There are three sets of data. First non-farm payrolls from establishments. These went negative in February 2008 and remained negative for the next twenty months in a row. Second, we report employment from the Current Population Survey. The household survey has a more expansive scope than the establishment survey because it includes self-employed workers whose businesses are unincorporated, unpaid family workers, agricultural workers, and private household workers, who are excluded by the establishment survey. Marginal workers have more coverage in this survey, which had five negative numbers in 2007 alone and in the thirty-six months from January 2006 through December 2009 had 25 negative months. The third panel of Table 1 reports unemployment rates that jumped sharply in April 2008, from 5.0% in April to 5.4%. The declines in employment and increases in unemployment in the US occurred in 2008 which, as we will see below, is rather earlier than in other countries.

At the start of 2008 labor market data in the United States were flashing warning signs. By April 2008 it seemed apparent that the US and the UK were both in recession. As Blanchflower (2008) set out the path of slowing in the UK, apparent at the end of April 2008, followed closely that in the USA. The data are presented in Appendix Tables 1 and 2. The following phases in the Great Recession can be identified.

[10] The source is the Quarterly GDP at Market Prices revisions triangle (ABMI).
https://www.ons.gov.uk/economy/grossdomesticproductgdp/datasets/revisionstrianglesforukgdpabmi

US Phase 1 (January 2006-April 2007). The housing market starts to slow from its peak around January 2006. Negative monthly growth rates in house prices start to appear from the Autumn of 2006.

US Phase 2 (May 2007-August 2007). Substantial monthly falls in house prices and housing market activity including starts and permits to build are observed from late Spring/early Summer of 2007. Consumer confidence measures, alongside qualitative labor market indicators, such as the proportion of people saying jobs are plentiful, started to drop precipitously from around September 2007.

US Phase 3 (September 2007-December 2007). Average hourly earnings growth starts to slow from September 2007 as does real consumption. The growth in private non-farm payrolls starts to slow (Table 1 panel a)). House price and activity declines speed up.

US Phase 4 (January 2008-). By approximately December 2007 the housing market problems spilled over into real activity. The US seems to have moved into recession around the start of 2008. There have been big falls in house prices. In March 2008 housing starts were at a seventeen-year low. Foreclosure filings jumped 57% in March and that month showed the biggest drop in payrolls in five years, while applications for unemployment benefits are on the increase.

This pattern was almost exactly repeated in the UK albeit a few months later.

UK Phase 1 (August 2007-October 2007). House prices start to slow in 2007Q2 and 2007Q3. Housing activity measures also slow from around October 2007.

UK Phase 2 (November 2007-January 2008). Consumer confidence measures start slowing sharply also from around October 2007. The qualitative labor market measures such as the REC Demand for Staff index also start slowing from around October 2007.

UK Phase 3 (February 2008-). In early 2008 the Halifax index and the RICS survey both suggest that house prices falls have started to accelerate. The Council of Mortgage Lenders (CML) recently announced that mortgage lending in March was down 17% on the year. Loan approvals are down, and the RICS ratio of sales to stocks is down from .38 in September 2007 to .25 in March 2008. Hourly earnings growth was sluggish - both the AEI and LFS measures are slowing. There is a growth in the number of part-timers who say they have had to take a full-time job because they couldn't find a part-time job - up 37,000 in March alone.

UK Phase 4 "is coming". *"More bad news is on the way. I think it is very plausible that falling house prices will lead to a sharp drop in consumer spending growth. Developments in the UK are starting to look eerily similar to those in the US six months or so ago. There has been no decoupling of the two economies: contagion is in the air. The US sneezed and the UK is rapidly catching its cold."* Blanchflower (2008).

Despite this evidence the Monetary Policy Committee at the Bank of England in its August 2008 Inflation Report claimed there had not been a recession and forecast there would not be one in

2008 or 2009. The FOMC even by September 2008 seemed unaware that the US had been in recession for nine months. Recession in the UK followed the same path as in the USA but around six months later. Contrary to the claims of Sir Mervyn King, Governor of the Bank of England, the UK and US had not 'decoupled'.

On March 26th, 2008, the UK Parliamentary Treasury Select Committee asked Mervyn King if he was concerned that US recession might spread to the UK. He replied:

"*For us, far more important than the United States in terms of the impact on demand in the UK is the impact of the euro area because they have a weight three times larger than the United States in our trade-weighted index, so what happens in the euro area is much more important to us directly than the UK economy*" (Testimony; Q38).

In retrospect, that seems to have been a grave error.

If we move beyond the United States and the United Kingdom to the other major OECD countries we see that what is striking is the commonality in shifts across other OECD countries. Table 2 provides the latest OECD estimates of GDP growth for the four quarters of 2008 for seventeen major OECD countries. A number of points stand out:

a) If two successive quarters of negative growth had been used to determine the start of the Great Recession in the UK it would not have been known in the UK until July 2008 at the start of the third quarter.
b) Three countries had negative growth rates in all four quarters – Denmark, Ireland, and Sweden.
c) Five countries had negative growth rates in Q12008.
d) Sixteen had two successive negative quarters in 2008 – only Canada did not.
e) The US, Austria, Belgium, Russia and Spain's recessions started in Q3 using quarterly GDP data as they had negative growth in Q3 and Q4 while the remainder started in Q1 or Q2.

Table 3 shows that despite a broadly similar picture of decline in GDP, US unemployment rates rose somewhat more rapidly than in other OECD countries. Of note is that the US peaked at 10% in October 2009, compared with over 25% in the case of Greece and Spain and in double digits in Finland, France and Italy.

2.4: Economic Downturns and How to Predict Them

Economists concerned about countries' economic prospects model various outcomes, including GDP growth and unemployment. The value of focusing on unemployment rates is that the series tends to be more accurate than GDP estimates is therefore less subject to subsequent revision. In addition, changes in GDP and unemployment are often highly correlated since unemployment tends to move with the business cycle. Unemployment is also of considerable interest in its own right as an indicator of the health of labor markets, as well as being vitally important for citizens' subjective wellbeing – something that some economists have recently come to regard as the best indicator of how well society is doing (Layard, 2005).

The pandemic-induced recession was something of an exception in that unemployment figures did need revising. If we return to Table 1 it shows shifts in employment and unemployment in the United States when the COVID pandemic broke in the United States. Non-farm payroll and CPS employment both plummeted in March and April 2020 as the pandemic hit. At the time, the official estimate of the unemployment rate in April 2020 was 14.8% but because of a misclassification error five percentage points has to be added to the official unemployment rate.[11] Analogously the employment numbers in the household survey are upward biased. The collapse in employment and rise in unemployment in the Spring of 2020 with COVID lockdowns was much larger and faster than in any other country. The fall in GDP though was not as large, as we outline below.

There are instances in which economic downturns are not followed by shifts in unemployment as one might ordinarily expect. In the Great Recession, although global unemployment rose by almost one-fifth between 2007 and 2009 (ILO, 2010), it only rose by only 2 percentage points in the EU (Pissarides, 2013). Table 3 shows that unemployment rates only started to rise in many OECD countries after they entered recession, based on GDP growth by September 2008. Of note is that Greece, Ireland, Italy and Spain all reached peak rates in double digits with Spain and Greece achieving Great Depression heights of over 25%.

In the case of the recent COVID-induced recession, while unemployment spiked quickly in the United States following the pandemic, this has not happened in most European countries, largely due to a rapid policy response to underpin jobs with direct government subsidies to waged employees and, in some cases, the self-employed, under furlough programs (The European Foundation's EU-19 COVID PolicyWatch). Unemployment rates for June 2021 in the final column of Table 3 are even below those before the start of the Great Recession in Belgium, France, Germany and the UK.

In contrast to most EU countries, Germany saw no increase in unemployment after the Great Recession. This seeming decoupling of the labor market from the business cycle prompted Hutter and Weber (2015) to forecast movements in Germany's unemployment rate using qualitative data from the CEOs of the Federal Employment Agency's (FEA) regional employment agencies. They find that the inclusion of the CEO expectations about changes in unemployment in the coming three months substantially improved the accuracy of their out-of-sample predictions of the

[11] In the household survey, individuals are classified as employed, unemployed, or not in the labor force based on their answers to a series of questions about their activities during the survey reference week. Workers who indicate they were not working during the entire survey reference week and expect to be recalled to their jobs should be classified as unemployed on temporary layoff. In April, there was an extremely large increase in the number of persons classified as unemployed on temporary layoff. However, there was also a large increase in the number of workers especially in March and April 2020 and to a lesser degree subsequently, who were classified as employed but absent from work. Special instructions sent to household survey interviewers called for all employed persons absent from work due to coronavirus-related business closures to be classified as unemployed on temporary layoff. However, the BLS became aware that not all such workers were so classified If the workers who were recorded as employed but absent from work due to "other reasons" had been classified as unemployed on temporary layoff, the overall unemployment rate in April 2020 would have been almost 5 percentage points higher than reported (on a not seasonally adjusted basis). However, according to usual practice, the BLS stated that data from the household survey are accepted as recorded. To maintain data integrity, no ad hoc actions were taken by the BLS to reclassify survey responses.

aggregate unemployment rate 1, 2, 3 and 6 months later relative to benchmark estimates without the qualitative survey information.[12] However, the accuracy rate of the CEO agency predictions fell during the Great Recession because respondents were too pessimistic about unemployment prospects. The authors also test the predictive capacity of consumers' unemployment fears using the same EU European Business Cycle indicator series we discuss below which asks about expectations regarding changes in unemployment over the coming 12 months. This performs less well, but this is likely due to the focus on short-term forecasts.[13]

Spain's economy witnessed a substantial and sustained increase in unemployment in the Great Recession, thus conforming to standard expectations as to what happens in the labour market when output plummets. Vincente et al. (2015) estimate models which predict monthly change in unemployment rates in Spain over the period 2004 to 2012. They incorporate an Employment Confidence Indicator (ECI) based on industry regarding the current employment situation and expectations three months hence to capture the demand side of the labour market. To capture the supply side they include Google trends in searches for job vacancies.[14] Both variables are statistically significant and improve the predictive power of their models.[15]

The United Kingdom also experienced a hike in unemployment in the Great Recession, although it was not as large as some had anticipated, in part because there was a slower job destruction rate than expected (Bryson and Forth, 2016). Smith (2016) argues that Google Trends data has an advantage over survey data in terms of its timeliness, with weekly information providing more options for short-term forecasting ("nowcasting"). He emphasises the importance of term selection and their aggregation in constructing good predictive models. He predicts three-month changes in the ILO definition of unemployment rates in the UK between 2007 and 2014 using a composite index based on terms around the word 'redundancy' to capture flows into unemployment, together with other Google terms. His models also incorporate data from surveys of business and consumers including business employment expectations from the Bank of England's Agents Survey and consumer expectations regarding unemployment over the next 12 months.[16] The qualitative survey metrics perform well in predicting unemployment changes, as do some carefully chosen Google indicators, particularly during 2009-2012. But predictions have been less accurate since 2012.

Using pooled data from the EU's harmonized Business and Consumer Surveys - which we use below - Sorić et al. (2019) assess which sentiments are best able to predict consumers'

[12] Intriguingly the authors note "*only few resources seem to be invested in searching and finding a leading indicator that directly aims at signaling unemployment changes in the short run. As a consequence, there is little literature on forecasting German unemployment*" (p. 3541). They cite Schanne et al. (2010) who use spatial GVAR models to forecast unemployment for the 176 German labor market districts, and Askitas and Zimmermann (2009) who propose using internet activity to forecast German unemployment. The latter is a particularly interesting idea during a pandemic when nobody was doing much walking about due to lockdowns. The Economics of Walking About (EWA) became the Economics of Walking About the Internet (EWAI).

[13] The authors note that other qualitative survey items, such as the IFO employment barometer perform well as a leading indicator for actual employment changes (Abberger, 2007).

[14] Their paper reviews the growing literature using Google search data to predict a variety of outcomes including house prices, inflation, tourist flows, and retail sales (see p.133).

[15] The introduction of a structural break in March 2008 improves the estimation.

[16] The MIDAS regression methodology outlined on p. 275 seeks to handle the fact that the unemployment data are available monthly whereas the Google predictors are available weekly.

unemployment expectations over the period 1998 to 2018. They find the major purchases and savings for the next 12 months are the survey variables with the highest predictive power for the future unemployment while perceptions of the financial situation and price trends in the last 12 months are best at predicting current unemployment expectations. They also match in news about inflation, production and stock market movements to see how these predict unemployment expectations. They find individuals react asymmetrically to good and bad news: the response of consumers' unemployment expectations is stronger in relation to bad news.

The studies above estimate changes in unemployment counts or rates over the short to medium term (usually up to 12 months). However, it is arguable that what economists and policy-makers would value most is the ability to predict serious downturns in the economy – that is the turning points that mark the beginning of a recession.[17] Following Sahm (2019) these turning points are identified as an increase of at least 0.5 of a percentage point in the national unemployment rate relative to its low point in the previous 12 months.[18] Since they rely on unemployment data she is better able to predict downturns than a reliance on changes in GDP (a series which is notoriously subject to retrospective revision). Sahm also points out:

> *"the rise in unemployment prior to a recession does not predict the severity of the recession. For example, the increases in the unemployment rate prior to the 2001 and 2008–9 recessions were similar, even though the subsequent rise during and after the 2008–9 recession was more than double the rise with the 2001 recession"* (op. cit. p.79)

Feng and Sun (2020) and Sun et al. (2021) propose a misclassification error adjustment to Sahm's rule which improves its predictive power. Nevertheless, to our knowledge, no papers to date seek to identify the timing of turning points leading to recession. This is inherently difficult since these events are rare.

3. Data and Estimation

The plethora of data available to forecast and nowcast unemployment rates means analysts have spent increasing time on what is the optimal set of indicators in maximising the accuracy of predictions. In their work Claveria and colleagues (Claveria et al., 2017; Claveria et al., 2019a; Claveria et al., 2019b) use evolutionary computation techniques (a sub-field of Artificial Intelligence) to optimise their unemployment expectations metrics, as well as showing that the degree of correspondence in unemployment expectations across consumers also contains information increasing the predictive power of models estimating unemployment rates (Claveria, 2019a; Claveria, 2019b).[19] There is also a very sophisticated literature, some of which is reviewed above, identifying the predictive power of models, usually based on out-of-sample prediction, accounting for serial correlation, the identification of structural breaks in series and other issues.

[17] For discussion of binary models predicting recession, including dynamic probit models, and Markov switching models, see Sun et al. (2021: 3).
[18] Sahm (2019: 79) shows that these turning points occurred six times between 1969 and 2009, namely in March 1974, April 1980, November 1981, November 1990, June 2001 and April 2008.
[19] For further work examining the relative predictive power of economic sentiment metrics constructed in various ways see Gelper and Croux (2010).

In this paper we adopt a relatively simple descriptive approach to establish the extent to which lagged expectations regarding economic conditions predict country-level unemployment rates (up to 12) months later. In doing so we distinguish the expectations of individuals and consumers from those of producers/employers.

We construct panel data for 29 countries for the period between January 1985 and July 2021 where the unit of observation is the country*month. We incorporate country and year fixed effects so that estimates capture the degree to which within-country variance in monthly unemployment rates reflects lagged expectations of economic actors regarding unemployment, general economic conditions, and one's own household finances. These expectations variables are not combined. Rather they are entered separately. In addition, we incorporate a lagged dependent variable. As well as country pooled models we run separate country models to establish the relationship between survey expectations and subsequent unemployment rates for each country. The country fixed effects pick up the differences in home ownership and union membership rates as we do not have them by month and country.

As will be apparent from the description below, our survey expectations data items are ordinal, in keeping with much of the literature, we construct a metric which captures the balance between positive and negative expectations, as described further below.

We use qualitative survey data from the Joint EU Harmonized Programme of Business and Consumer Surveys conducted by the European Commission (EC)[20] to compute individuals' and employers' expectations about economic prospects. Our major focus here is on the fear of unemployment (Blanchflower, 1991; Blanchflower and Shadforth, 2009) expressed not just by workers but based on a sample of working and non-working adults.

The question asked is:

Q1. How do you expect the number of people unemployed in this country to change over the next 12 months? The number will...
+ + increase sharply (PP)
+ increase slightly (P)
= remain the same (E)
− fall slightly (M)
− − fall sharply (MM)
DK (N)

Hence PP+P+E+M+MM+N=100. On the basis of the distribution of the various options for each question, aggregate balances are calculated for each question based on the proportions in each category. Balances are the difference between positive and negative answering options, measured as percentage points of total answers. The score is calculated as B = (PP + ½P) − (½M + MM) which means the scores can vary between -100 and +100.

[20] https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/business-and-consumer-surveys_en

We call this variable **the fear of unemployment**. At first glance one might think the fear of unemployment might be related to the feeling of job insecurity, especially if one adopts the insecurity metric proposed by Nickell et al. (2002) which is based on expectations of job loss and the costliness of job loss. Of course, only those in paid work can describe how secure they feel that work is, whereas all are able to speculate about possible changes in the number of unemployed in the country. It is the case that job insecurity moves cyclically (Manning and Mazeine, 2020) but in a conceptual way the metrics are quite different since perceptions of job insecurity are couched in terms of one's feelings about one's own prospects, whereas the fear of unemployment metric relates to the whole economy over the coming 12 months.

We also make use of two further questions asked of individuals relating what they believed had happened to the economy over the previous two years:

Q2. How do you think the general economic situation in the country has changed over the past 12 months? It has...
+ + got a lot better
+ got a little better
= stayed the same
− got a little worse
− − got a lot worse
N don't know

Q3. How has the financial situation of your household changed over the last 12 months? It has...
+ + got a lot better
+ got a little better
= stayed the same
− got a little worse
− − got a lot worse
N don't know.

They are scored in a fashion to the way the fear of unemployment score s constructed as a balance.

In what follows we include both the consumer fear of unemployment and the industry fear of unemployment along with other confidence measures included in the consumer survey into a country*month file. We also mapped into that file the country*month unemployment rate, which is our main dependent variable, taken from Eurostat (https://ec.europa.eu/eurostat/web/lfs/data/database).

We have 9,241 observations from consumers on the fear of unemployment available monthly for 429 months since January 1985 through to today on 29 countries in an unbalanced panel where we also have monthly unemployment rates. Initially the questions were asked in twelve countries – Belgium (422); Denmark (437); France (437); Germany (365); Greece (278); Ireland (438), Spain (420); Italy (436); Netherlands (438), Portugal (420); UK (429) and Finland (402), with the numbers in parentheses how many months of data are available for each. Other countries such as Austria (308); Cyprus (241), Luxembourg (233); Malta (223) and Sweden (308) joined the surveys later. As time moved on and more countries joined the EU the list of countries grew to also include

the A10 Accession countries - Bulgaria (241); Estonia (256); Latvia (262); Lithuania (241), Poland (241); Hungary (305); Czech Republic (302); Slovenia (305), Slovakia (266) and Romania (228) plus Croatia (193) and Turkey (171). The responses to the fear variable collapsed by year as an average of the twelve months, are reported in Appendix Tables 1-3.[21] Overall there are 9531 observations by country on the industry fear variable.[22]

We also estimate life satisfaction equations which take a similar form to equation 1, but this time estimate annual within-country change in life satisfaction, with lagged life satisfaction as an independent variable alongside country unemployment rates and mean fear of unemployment. These estimates use 4-step life satisfaction Eurobarometer data from 33 countries taken from the World Database of Happiness.[23] Where there are multiple surveys in a year we averaged across them. We show that the fear of unemployment lowers wellbeing.

4. Results

4.1: US state*year unemployment and employment estimates, 1984-2020Q2

Before presenting our cross-country analyses, we return to the issues raised in Section 2.1 with a state*year time-series for the United States over the period 1984-2020 to predict changes in state-level unemployment and employment rates. The purpose is to revisit the role played by institutions in understanding movements in unemployment and employment.

We take the unemployment and employment rates by state and year and map onto them the union membership rate[24] along with the home ownership rate by year from the Census Bureau. We update work in Blanchflower and Oswald (2013) that estimated unemployment and employment equations from 1985-2011 through to the second half of 2020 which is the most recent data available.

The dependent variable in part a) of Table 4 is the unemployment rate at time t in a state, initially regressed on a lagged dependent variable and the contemporaneous union density rate. In the second column without year effects there is a positive and significant union effect which disappears when state dummies are added in column 3. We then add the home ownership rate at time t in column 4 which is weakly positive. Finally, in column 5, we replace it with a five-year lag on the home ownership, consistent with the findings of Blanchflower and Oswald. Part b) reports similar estimates using the employment rate and once again there are no union effects but a significant and negative five-year home ownership rate variable.

[21] Data is available through July2021. The survey stopped at the end of 2020 in the UK after Brexit so there are no observations from January 2021 onwards.
[22] The responses are the same as the consumer fear variable in some countries these are the exceptions: Austria (305); Bulgaria (241); Croatia (157); Cyprus (239); Czech Republic (317); Germany (287); Greece (278); Latvia (262); Lithuania (241), Luxembourg (437); Malta (223); Poland (241); Portugal (413); Romania (293); Slovakia (281); Spain (410); Sweden (308) and Turkey (172).
[23] Overview of Happiness Surveys using Measure type: 121C / 4-step verbal Life Satisfaction https://worlddatabaseofhappiness-archive.eur.nl/trendnat/framepage.htm
[24] State union coverage and membership Density, 1964-2020 from http://www.unionstats.com/MonthlyLaborReviewArticle.htm

Home ownership rates are associated with higher unemployment, consistent with Blanchflower and Oswald's earlier work which suggests it generates labor market frictions by reducing labor mobility, while unions have no impact. The results are important because, despite some time variance in union density over the period, it plays little role in labor market outcomes in the United States, in keeping with those who questions the early time-series research on the deleterious effects of unions and other labor market institutions.

4.2: Descriptive Analyses

We now turn to a series of charts for Europe that set out the extent to which the various qualitative series appear to be predictive of unemployment. They are a precursor to the econometric analyses presented in the next section. What is striking is the consistency of the evidence by country and measure - whether it is from consumers or firms. All moved down together pre-2008. There is also some evidence also that there was a rising fear of unemployment in Europe from around 2017 that predicted slowdown. This decline did not occur in the United States.

Chart 1a is the starting point for our analysis of the fear of unemployment data, which is not available in a disaggregated way across states for the United States, so we focus on the four big EU economies, France, Germany, Italy and the UK. Recall, the fear variable asks people to predict what is going to happen to unemployment in the coming 12 months, so we are comparing people's predictions with the actual outturn 12 months later. All four of these series are rising sharply at the middle of 2007. Chart 1b plots the unemployment rates of these four countries along with the United States. Unemployment rates by month between March 2008 and February 2009 were as follows

	Germany	France	Italy	UK	USA
Mar-08	7.7	7.3	6.4	5.2	5.1
Apr-08	7.6	7.3	6.9	5.1	5.0
May-08	7.5	7.3	6.8	**5.3**	**5.4**
Jun-08	7.4	7.3	6.9	5.4	5.6
Jul-08	7.3	**7.4**	6.6	5.7	5.8
Aug-08	7.1	7.5	**6.8**	5.8	6.1
Sep-08	7.0	7.5	6.9	5.9	6.1
Oct-08	7.0	7.6	7.0	6.1	6.5
Nov-08	**7.1**	7.8	7.1	6.3	6.8
Dec-08	7.2	8.0	6.9	6.5	7.3
Jan-09	7.3	8.3	7.2	6.7	7.8
Feb-09	7.5	8.6	7.3	7.1	8.3

The unemployment rate starts rising in the US in April 2008, in Germany in November 2008, in France in July 2008, in Italy in September 2008 and in the UK in May 2008, well after the rise in the fear series. When we look at the predictive power of these fear variables below, we will compare them with the unemployment rate 12 months ahead. Even after the collapse of Lehman

Brothers in September 2008 policymakers seemed to have little idea what was happening in the labor market. Some even appealed to the Almighty.[25]

The fear series it turns out was a pretty good predictor of the Great Recession for the 27 countries of the EU. It is notable that it started picking up in July 2007 well before the rise in unemployment, which first increased a year later in September 2008 and would peak at 11.5% in the Spring of 2013. It was clear that by around April 2008, the start of the recession in almost all EU countries, the series were elevated.[26] At the moment Lehman Brothers collapsed in September 2008 the fear series was at 26.6 and had started an inexorable rise.

If we move forward to the period shortly before the COVID pandemic we see a sharp rise in the series from a low in June 2018 well before COVID hit and then a huge rise in April 2020 to 63.2 and then a subsequent fall back to 14.7 in July 2021. The peak is below the prior peak of 69.1 in April 2009. Data Appendix Tables 3-5 document the fear series by country by year and its rise in the Great Recession along with the uptick in every country from around 2018.

Chart 2 places the consumer series for the EU in context as a cross-check. It reports estimates from manufacturing employers on their views on employment for the period 1985-2021. The question used is

Q3 *How do you expect your firm's total employment to change over the next 3 months? It will...*
+ increase (P)
= remain unchanged (E)
− decrease (M)
And the score is simply B = P – M

The industry fear series is almost exactly the inverse image of consumer fear in Chart 1a. In the industry series a negative score means less employment and hence higher unemployment. The two series move closely together. They both show a worsening of job prospects in 2007, reaching low levels by April 2008 as recession starts unlike the GDP data. They both show increasing pessimism around the start of 2018 and prior to COVID which makes respondents even more pessimistic and then the series improves through 2021 as vaccines are implemented.

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[25] On September 28th, 2008, the Governor of the Bank of England Lord King was giving testimony to the Treasury Select Committee at the House of Commons and was asked a question on unemployment.
Q102 Mr Love: "*On unemployment there have been some suggestions, and Mr Blanchflower has said, and I think there are quite a lot of people out there who would agree with them, that it may go up faster than the projections in the Inflation Report. Is that a worry to you? How important is that in terms of inflation? We talk about inflation expectations, do you think if there is a rise in unemployment, and I look to you as to whether this was part of your adjustment process that you were talking about, do you think that will deal with any inflation expectations that are rising out there?*
Mr King: *I do not think inflation expectations are a direct function of that, they are a function of people looking at the economy and asking where will inflation go. The adjustment has nothing as such to do with unemployment. I do not think we really know what will happen to unemployment. At least, the Almighty has not vouchsafed to me the path of unemployment data over the next year. He may have done to Danny, but he has not done to me."* The unemployment rate went up over the next 12 months from 5.4% to 7.8%.
http://www.publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/1033/8091107.htm
[26] UK=34.6; Germany=0.2; France=9.5 and Italy=22.6

Chart 3 plots series on employment expectations from employers in the other three economic sectors - services, construction and retail trade - that the EU Commission produces monthly. These series relate to respondents' views on employment prospects over the next three months. They have a similar path to the industry fear series and all track, inversely the consumer fear series. All three show a worsening of prospects for the European labor markets from 2018 through to early 2020.

We now turn to examine three sets of data for the UK which were all "flashing red" at the start of 2008. Chart 4 plots the consumer fear of unemployment series for the UK against the unemployment twelve months ahead, given that the respondent is asked what unemployment will be a year later. It shows a steady rise in fear from around 1998 and then from early 2008. Also notable is the rise in the series from around the start of 2005 and the subsequent rise in unemployment from the end of 2014.

Next, we examine a number of other monthly qualitative data series that are also available for the UK which include reports from the Bank of England's Agents (BOEA) as well as the Purchasing Manager Indicators (PMIs). Chart 5 from the BOEA scores recruitment difficulties and employment intentions. Both had declined sharply by the start of 2008 and were declining again in 2018 before the pandemic hit. Chart 6 shows a similar pattern in five other scores covering investment intentions, capacity utilization, turnover and output in manufacturing and construction. The Bank of England's own agents' scores were in largely unprecedented territory by the early Spring of 2008 as the UK entered recession, yet this was not reflected in the MPC forecast in its Inflation Report of August 2008 which indicated that there would be no recession.

Chart 7a shows evidence from the three PMIs that are published monthly in the UK by Markit.[27] They moved very closely together and were falling steadily by the end of 2007. Chart 7b is particularly intriguing as it plots the composite of the three scores in Table 7a against the first and latest estimates of GDP. The PMI composite tracks the latest estimate reasonably well although it did not perform very well in the burst of growth around the London Olympics.

In Chart 8 we report on the Total Output PMIs for France, Germany, the UK and the USA.[28] Data are only available for the US from October 2009. The paths of the four countries closely track each other. In all three EU countries output PMIs start turning down sharply from the end of 2007. The speed of the drop is unprecedented in the prior data for all three. They all turn around together around the middle of 2008. There is a notable collapse in 2020 which is especially large in the UK which suffered an especially big decline in GDP (see Appendix Table 6).

Chart 9 performs a similar exercise but this time for the Employment PMIs. Despite claims in the earlier literature that institutions might be to blame for high unemployment, what is striking is how similar the paths are again, just as they were for output. But referring back to Table 3 on unemployment rates, which are low in Europe, it seems that institutions *prevented* rises in unemployment in 2020 rather than caused unemployment. Purchasing managers in all four countries in 2020 reported a comparable shock – that employment was set to decline and unemployment to rise but the results were quite different. That happened in the US but not in

[27] https://ihsmarkit.com/products/pmi.html

[28] We thank Chris Williamson of Markit for providing us with these data.

Europe. It is notable that despite very different labor market institutions across these four countries the patterns are very similar in both the output and employment series. Labor market institutions don't seem to have mattered over the last twenty years or so, if they ever did.

Taken together the charts provide very good evidence of the predictive power of these qualitative surveys. Now we turn to the econometrics.

4.3: Econometric analysis of unemployment rates

Table 5 reports estimates for country unemployment rates by month where the right-hand side variables include the unemployment rate lagged 12 months, a full set of country, and year dummies (not reported). The 12-month lagged unemployment rate is positive and highly statistically significant with a coefficient of between .81 and .86 across all 6 models. The coefficient is nearly identical to the lagged unemployment coefficient reported in Nickell et al. (2005: Table 5) for OECD countries in the period 1966-1995.

We vary the qualitative survey controls across the columns. In the first column we include the fear of unemployment variable from consumers with a six-month lag: it is positive and statistically significant. In column 2 it is replaced with the fear of unemployment with a twelve-month lag. The coefficient is very similar and is positive and statistically significant. When they are entered together in model 3 both are statistically significant, with the six-month lagged unemployment having a coefficient nearly three times the size of the twelve-month lagged unemployment coefficient.

Column four then adds consumer perceptions of how the economic situation changed in the previous 12 months but lagged 12 months. The coefficient is negative and statistically significant indicating that perceptions of a deteriorating economic situation predict future unemployment, over and above the fear of unemployment and lagged unemployment. Column 5 drops the 6-month lag on fear and the coefficient on the 12-month lagged fear variable rises. Fear of unemployment reported by consumers predicts unemployment 12 months later.

Column 6 presents a model containing consumer and employer fear of unemployment lagged 12 months, alongside consumer perceptions of the economic situation lagged 12 months. The 12-month fear variable remains significant and positive, and the economic situation variable lagged 12 months is significant and negative once again. Fear of unemployment reported by both consumers and industry representatives both predict unemployment twelve months ahead. The inclusion of the industry fear variable improves the fit of the equation and has little impact on the coefficients of the fear or economic sentiment variables, which appear to be orthogonal to each other. It is impressive how stable these results are to changes in specification.

Our preference going forward is to use the twelve-month lag as the specific question asks about unemployment in twelve months even though we lose a few observations.

In Table 6 we report individual country results where the unemployment rate is regressed on a lagged dependent variable and year dummies plus the consumer and industry fear variables, both lagged 12 months, and consumer perceptions of the economic situation lagged twelve months. In

thirteen of the twenty-nine countries for which we have data the three sentiment variables are significant with the 'right' signs (Belgium; Czechia; Denmark; Germany; Estonia; Ireland; Latvia; Lithuania; Netherlands; Portugal; Slovakia; Sweden; Turkey). In 6 others the fear of unemployment variable is significantly positive (UK; Greece: Italy; Cyprus; Austria; Romania). In 6 others the industry fear of unemployment variable is significantly negative (Bulgaria; France; Hungary; Poland; Slovenia and Finland). In 4 the consumer fear variable is significant and negative (France: Luxembourg; Hungary and Poland). Because of concerns over small sample sizes, we pooled six countries together that had weak results (Bulgaria; Slovenia; Malta; Croatia, Spain and Finland) and obtained results (presented in the bottom row) very similar to the overall results with significant positives on the consumer fear variable and significant negatives on the industry fear and the sentiment variable.

We now move to Table 7 to experiment further with different specifications and other consumer sentiment variables. The dependent variable once again is the country month unemployment rate. Column 1 includes the industry fear variable in time t along with one in t-12 months plus the consumer fear variable in t-12 months. The two industry variables have significant and negative coefficients, and the fear variable is positive and highly significant. We then add two more consumer sentiment variables one relating to the consumer's financial situation over the prior twelve months as well as the economic situation variable lagged. All coefficients are significant with expected signs. Worse financial situation higher fear of unemployment.

Our final set of estimates in Table 8 examine whether the fear of unemployment impacts life satisfaction. We already know from Blanchflower et al. (2014) that the unemployment rate lowers life satisfaction five time more than inflation does, but we don't know about the role that fear of unemployment plays. The life satisfaction data are taken from the World Database of Happiness which aggregates data from the Eurobarometer survey series by year. It is based on a 4-step life satisfaction variable.

Q4. On the whole are you very satisfied (=4), fairly satisfied (=3), not very satisfied (=2) or not at all satisfied (=1) with the life you lead?

The variable is aggregated by country in each survey. Where there are multiple surveys in a year, we average them and then aggregate the responses into country*year cells. We then merge the unemployment rates by country and year onto the unbalanced panel file for the period 1975-2020. There are thus 850 country*year observations on 31 countries.[29] There are 35 observations for the major countries such as France, Germany, and the UK for the entire period 1985-2020 and smaller numbers for the A10 Accession countries such as Poland and Hungary, Malta and Cyrus and candidate countries such as Serbia and Montenegro. Finally, we merge on the fear of unemployment variable for the period 1985-2020, and now there are 723 observations in total. We include a lag on the life satisfaction variable which then leaves 708 observations

[29] Observations across the 31 countries are as follows; Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, UK=1985-2020; Portugal and Spain=1986-2020; Austria, Finland and Sweden=1997-2020;Luxembourg=2002-2020; Bulgaria, Czechia, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovenia, Slovakia=2005-2020; Turkey=2007-2020; Northern Macedonia=2009-2020; Montenegro=2012-2020 and Serbia=2014-2020.

Table 8 reports the findings. In all three specifications a one-year lagged life satisfaction variable is included: this is positive and highly significant throughout. The first column is for the entire period 1975-2020 and has 820 observations and the lagged dependent variable has a coefficient of .7. The unemployment rate coefficient enters negatively in column 1 as found in Blanchflower, Bell et al (2014). The coefficients on the lagged life satisfaction and unemployment rates are largely unchanged in column 2 which restricts the period to 1985-2020. In column 3 the consumer fear variable lowers wellbeing over and above the happiness reducing effects of the unemployment rate itself. The unemployment rate coefficient drops by a third. We experimented with lags on the fear term and also included the industry fear term in levels and with lags, but they were never significant and were omitted. So, fear of unemployment lowers life satisfaction over and above the impact of the unemployment rate.

We have little information on wellbeing during the pandemic, but we do have intriguing data from the UK. Chart 10 provides some detail of what has happened to life satisfaction in 2020 and 2021 in the UK using data from the ONS. A 10-step question on life satisfaction has been included in the Annual Population Surveys for more than a decade. For the period 2015-2020 life satisfaction varied little and had a mean of 7.7. After the onset of the pandemic the ONS started collecting data on the same variable approximately every two weeks which is plotted in the chart. There were unprecedent falls in life satisfaction in March and April 2020 which continued through February 2021 to around 6.4 before subsequently picking up to around 7.[30] Of note is that we saw little evidence of a change in life satisfaction between 2019 and 2020 in our data – on average across countries the series was flat at 2.99 in 2019 versus 2.98 in 2020. In contrast the fear of unemployment series rose from 7.6 in 2019 to 34 in 2020, before falling back in 2021 (see Appendix Tables 3-5).

5. Discussion and Conclusions

The analyses presented here indicate that the attitudes and expectations of economic actors – individuals in the labor market and the suppliers of goods and services – contain information that can help analysts predict economic downturns up to 12 months in advance. These data, that are readily collected in social surveys, purchasing manager surveys and by agents such as those working for the Bank of England, have a number of advantages over other survey series. First, they can be collected in real time and with high frequency (monthly in the data we present), thus providing timely insights into how economic actors are viewing the economy. At the time of writing, early August 2021, the data from the EU Business and Consumer Surveys analyzed above is available through to July 2021.[31] Data is available monthly from consumers as well as from firms in construction, retail, services, and industry.

[30] The Covid Social Study conducted at UCL shows an even steeper decline to 5.5 in March 2020, picking up to 6.5 in September 2020, and then falling to 5.7 in January 2021, before climbing back to 6.8 in June 2020 (Release 36, 22nd July 2021). https://b6bdcb03-332c-4ff9-8b9d-28f9c957493a.filesusr.com/ugd/3d9db5_93342fa7cccf45b194f8c6ec6c16e66f.pdf

[31] Business and Consumer Surveys Time Series https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/business-and-consumer-surveys/download-business-and-consumer-survey-data/time-series_en

Second, they permit country-level panel analyses. Because they are high-frequency, as are the unemployment data used as our dependent variable, we can estimate country-level models with greater degrees of freedom than estimates that are reliant on quarterly or annual data.

Third, they are accurate at the time of data collection and are thus not subject to retrospective revision which plagues most macro-indicators. Fourth, these data on attitudes and expectations appear better able to predict economic downturns that other data series than standard economic variables like GDP or the unemployment rate. To emphasize just how powerful they can be, Table 9 summarizes some of the data in our appendix tables in showing how fear of unemployment rises in most countries in Western and Eastern Europe prior to the onset of recession. Fear rose in 16 of our 17 Western European countries between 2007 and 2008 prior to the Great Recession – the only exception is Luxembourg. Plus, it also rose in 8 of our 11 Eastern European countries, excluding Croatia, Hungary and Poland. Perhaps more surprising is the rise in the fear of unemployment prior to the outbreak of the COVID pandemic, suggesting recession may have been in the offing even in the absence of the pandemic. This was the case between 2018 and 2019 in 11 of our 17 Western European countries and 6 of our 11 Eastern European countries.

Fourth, it is remarkable how similar the story is cross countries as well as data series. The charts showing EU consumers opinion track closely that of the Bank of England's agents, as well as Purchasing Manger's Indices. Qualitative indicators across manufacturing, services, retail and construction, track closely those of consumers. An unexplored question of course that arises is why do people know what is coming?[32]

Although, in this paper we have simply run regressions on country-month observations incorporating a lagged dependent variable and country fixed effects to isolate the correlation between lagged expectations and economic attitudes and subsequent unemployment rates, these data could be used readily to make out-of-sample predictions which are more common in forecasting.

Either way, it seems sensible to add analyses of these data to the portfolio of options available to economic analysts to help identify economic trouble ahead. Even so, not all economists are convinced that this is what economics is about. Recently Jan Vlieghe, an external member of the Bank of England's Monetary Policy Committee (MPC), maintained economists and policymakers should not be expected to spot turning points:

> *"I have previously argued, as have countless others, that the usefulness of policymakers (or macroeconomists more generally) should not be measured by their ability to forecast recessions, in the same way that the usefulness of doctors is not measured by their ability to forecast heart attacks. Instead, the usefulness of policymakers lies in their response to a recession when it is happening, and their understanding of general risk factors beforehand, just as the usefulness of a doctor*

[32] It has always been important for economists to think seriously about the wellbeing of the man or woman on the Clapham omnibus but now it seems we need to take seriously what he or she says. Beth Staiger, wife of our Dartmouth colleague Doug Staiger explained it well to us. "*People know when things are getting bad.*" This paper suggests that she is right and they do.

lies in her treatment of a heart attack once it is happening, and her prescriptions for a healthy lifestyle to reduce the risk of a heart attack beforehand."[33]

This is clearly not the case: doctors do try to predict heart attacks. Indeed, the above is not an accurate characterization of what medical doctors do.[34] Contrary to Vlieghe's assertion, doctors have developed protocols expressly intended to predict individual patients' probability of heart attack. For example, the QRISK protocol is filled out by doctors to predict a patient's risk score for a heart attack.[35] A score over twenty suggests the patient should take statins and stop smoking. These individualized risk probabilities are used to target treatment on the 'right' individuals (Hippisley-Cox et al., 2008). We argue that economists should harness the information available in these surveys to predict economic downturns and, in particular, rising unemployment and slowing output. It would be progress if economists acted like doctors.

We argue here that qualitative surveys allow us to do just that. They gave very early indication of the coming of the Great Recession if commentators had only been watching. They also showed early signs of slowing from around 2016, even though central banks were suggesting that full employment was at hand. If one goes back further and considers recessions in the post-War period they come in various guises. All entail loss of output but the precise nature of the unemployment response depends somewhat on endogenous policy response. "Nowcasting" which predicts unemployment in real time cannot estimate GDP change due to measurement problems in estimating GDP, which result in series revisions such that we do not always know when the turning point has come until late in the day. Thus, we tend to focus on predicting unemployment. However, that may not be a perfect metric for capturing business cycle turning points if the State acts as it did in Europe during COVID. However, we have shown that fear of unemployment predicts both, that is, it can predict the real GDP change (post revisions) and unemployment change. We know, therefore, that things are getting bad when the fear numbers turn seriously negative in consecutive months. It is this – the turning point in *fear of unemployment* - that should really be the focus of our modelling efforts if we are to predict turning points in the business cycle.

Based on the critiques of the early macro time-series models one might be tempted to argue that institutions do not matter in explaining changes in unemployment. This might be the case in the case of unionization rates and employment protections which, in most cases move slowly and are quasi-fixed within country. However, a major lesson from the COVID-induced recession is that the state matters and indeed is fundamental in understanding changing unemployment as GDP plummeted. In those countries that took decisive action to intervene in the labor market mass unemployment was averted. Clearly the state is one institution that does matter since it can, if it chooses to, stabilize the labor market in a way that no other institution can.

[33] https://www.niesr.ac.uk/sites/default/files/files/GertjanVlieghe_Blanchflower%20book%20review_11%20June%202019.pdf

[34] See for example https://www.cdc.gov/heartdisease/risk_factors.htm and http://www.cvriskcalculator.com/ and https://www.mayoclinichealthsystem.org/locations/cannon-falls/services-and-treatments/cardiology/heart-disease-risk-calculator

[35] The latest version of QRISK is here: https://www.qrisk.org/

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Table 1. US labor market, 2006-2009, 2020-2021 – Source: BLS.

a) Non-farm payrolls ('000s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006	280	308	310	158	39	81	195	174	149	9	211	186
2007	228	81	235	49	151	76	-31	-23	80	79	110	108
2008	11	-79	-49	-240	-177	-171	-196	-278	-460	-481	-727	-706
2009	-784	-743	-800	-695	-342	-467	-340	-183	-241	-199	12	-269
2020	315	289	-1683	-20679	2833	4846	1726	1583	716	680	264	-306
2021	233	536	785	269	614	938	943					

b) Employment – CPS ('000s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006	398	307	284	20	328	264	-151	423	190	499	220	436
2007	58	29	263	-734	317	160	-158	-223	562	-298	649	-322
2008	105	-222	-70	46	-224	-171	-205	-329	-127	-274	-702	-731
2009	-1217	-512	-933	-51	-408	-239	-108	-409	-674	-386	227	-646
2020	-76	73	-3196	-22166	3854	4876	1677	3499	267	2126	140	21
2021	201	208	609	328	444	-18	1043					

c) Unemployment rate

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006	4.7	4.8	4.7	4.7	4.6	4.6	4.7	4.7	4.5	4.4	4.5	4.4
2007	4.6	4.5	4.4	4.5	4.4	4.6	4.7	4.6	4.7	4.7	4.7	5.0
2008	5.0	4.9	5.1	5.0	5.4	5.6	5.8	6.1	6.1	6.5	6.8	7.3
2009	7.8	8.3	8.7	9.0	9.4	9.5	9.5	9.6	9.8	10.0	9.9	9.9
2020	3.5	3.5	7.4	19.8	16.3	12.1	11.2	9.1	8.2	7.2	7.4	7.3
2021	6.9	6.7	6.4	6.4	6.1	6.1	5.7					

Notes. The unemployment rate is adjusted upwards for misclassification from March 2020 e.g. +5pp in April 2008. See archived Employment Situation reports https://www.bls.gov/bls/news-release/empsit.htm#2020.

Table 2. Quarterly GDP Growth, Percentage change, previous period, Q1 2008 – Q4 2008

	Q12008	Q2008	Q32008	Q42008
Austria	0.48	0.98	-0.59	-2.27
Belgium	0.43	0.06	-0.58	-2.17
Canada	0.08	0.36	0.82	-1.16
Denmark	-0.04	-0.92	-0.58	-2.36
Finland	-0.07	-0.82	0.34	-2.15
France	0.39	-0.42	-0.26	-1.42
Germany	0.63	-0.23	-0.65	-1.59
Greece	0.61	-0.64	-0.10	-1.40
Ireland	-2.93	-2.55	-0.33	-4.29
Italy	1.06	-0.92	-1.18	-2.50
Japan	0.36	-0.56	-1.23	-2.49
Netherlands	0.33	0.49	-0.12	-0.66
Portugal	0.01	-0.49	-0.08	-1.29
Spain	0.22	0.11	-0.18	-1.61
Sweden	-0.74	-0.05	-0.50	-3.58
United Kingdom	0.54	-0.56	-1.56	-2.06
United States	-0.41	0.57	-0.53	-2.18
EU	0.52	-0.25	-0.48	-1.78

Table 3. Unemployment rates

Location ▼	Jan-2008	Apr-2008	Sep-2008	Jan-2009	Jan-2014	April 2020	June 2021
Austria	4.7	4.3	4.3	5.0	6.2	6.0	6.4
Belgium	7.1	6.5	7.4	7.5	8.7	4.9	6.2
Canada	5.9	6.1	6.1	7.4	7.1	13.1	7.8
Denmark	3.2	3.3	3.8	4.9	7.1	5.0	5.2
Finland	6.5	5.7	6.7	7.0	8.4	7.1	7.7
France	7.4	7.3	7.5	8.3	10.2	7.5	7.3
Germany	7.9	7.6	7.0	7.3	5.1	3.7	3.7
Greece	7.6	7.7	8.1	8.9	27.1	16.2	15.1
Ireland	5.3	5.6	7.8	10.1	12.9	4.8	7.6
Italy	6.6	6.9	6.9	7.2	13.0	7.4	9.7
Japan	3.9	3.9	4.0	4.3	3.7	2.6	2.9
Netherlands	3.8	3.7	3.6	3.7	7.8	3.4	3.2
Norway	2.5	2.4	2.9	3.1	3.7	4.1	5.0
Portugal	9.0	9.0	9.4	10.0	15.3	6.4	6.9
Spain	9.1	10.0	12.0	15.9	25.5	15.2	15.1
Sweden	6.0	5.6	6.4	6.8	8.1	7.9	9.5
United Kingdom	5.2	5.2	6.0	6.7	6.8	3.9	4.8
United States	5.0	5.0	6.1	7.8	6.6	19.8	5.9
EU	7.2	7.1	7.3	8.3	10.8	6.6	7.1

Table 4. US State* year unemployment and employment (EPOP) regressions, 1984-2020H2

a) Unemployment rates					
Unemployment rate$_{t-1}$	.7972 (63.77)	.9046 (102.86)	.8331 (65.17)	.8359 (64.94)	.7787 (50.49)
Union density$_t$	.0026 (0.62)	.0055 (2.43)	-.0132 (1.44)	-.0152 (1.64)	-.1082 (1.06)
Home ownership$_t$				.0132 (1.79)	
Home ownership$_{t-5}$					.0303 (4.00)
State dummies	No	No	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes
Constant	1.0776	-1.1144	-.2078	-1.1589	-1.1782
Adjusted R^2	.6918	.9204	.9223	.9224	.9218
N	1887	1887	1887	1887	1632
b) Employment rates					
Employment rate$_{t-1}$	.9739 (178.05)	.9865 (282.91)	.9006 (88.10)	.9010 (87.97)	.8719 (74.98)
Union density$_t$	.0188 (4.56)	-.0014 (0.55)	-.0015 (0.14)	-.0007 (0.07)	.0084 (0.71)
Home ownership$_t$				-.0052 (0.61)	
Home ownership$_{t-5}$					-.0218 (2.49)
State dummies	No	No	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes
Constant	1.3688	2.3953	7.4473	7.7869	10.1426
Adjusted R^2	.9440	.9808	.9816	.9824	.9823
N	1887	1887	1887	1887	1632

Source unemployment rates BLS and home ownership rates US Census Bureau. Data for 2020 are Q1 and Q2 averaged.

Table 5. Unemployment and the fear of unemployment (in month*country cells & includes year dummies, 1985-2021.

$Fear_{t-6}$	.0370 (51.48)		.0294 (30.56)	.0131 (12.71)		
$Fear_{t-12}$		.0310 (40.65)	.0107 (10.97)	.0097 (10.73)	.0161 (20.83)	.0126 (13.86)
Industry $Fear_{t-12}$						-.0248 (18.99)
Economic $situation_{t-12}$				-.0264 (33.63)	-.0295 (43.15)	-.0259 (34.64)
Unempt $rate_{t-12}$	.8605 (209.73)	.8357 (192.17)	.8476 (204.04)	.8147 (202.05)	.8330 (210.67)	.8259 (206.87)
Austria	.0355 (0.45)	.0122 (0.15)	.0150 (0.19)	.3460 (4.75)	.3479 (4.58)	.4921 (6.44)
Belgium	.0925 (1.27)	.1536 (2.03)	.0992 (1.38)	.5996 (8.82)	.3383 (4.92)	.4025 (5.87)
Bulgaria	-.1956 (2.23)	-.1671 (1.83)	-.2520 (2.90)	.1132 (1.37)	.3021 (3.64)	-.1517 (1.83)
Croatia	.4290 (4.46)	.5836 (5.80)	.4772 (4.98)	.7906 (8.74)	.3768 (4.11)	.7633 (7.69)
Cyprus	.1999 (2.30)	.3332 (3.68)	.2209 (2.56)	.4663 (5.90)	.5200 (6.31)	.7972 (9.53)
Czechia	-.0509 (0.64)	-.0035 (0.04)	-.0496 (0.62)	.0852 (1.16)	.2974 (3.90)	.3161 (4.16)
Denmark	.6545 (8.96)	.5392 (7.13)	.6977 (9.68)	.7288 (10.64)	1.0635 (15.25)	1.1188 (16.06)
Estonia	.5067 (5.88)	.4774 (5.35)	.5552 (6.54)	1.3960 (17.09)	1.1274 (13.67)	1.2058 (14.59)
Finland	1.0932 (14.56)	1.0785 (13.84)	1.1682 (15.74)	1.1183 (15.26)	1.4431 (20.23)	1.2595 (17.54)
France	.2449 (3.36)	.3509 (4.65)	.2539 (3.54)	.2725 (4.15)	.1776 (2.59)	.2007 (2.78)
Germany	-.0854 (1.12)	-.0352 (0.45)	-.0995 (1.33)	.2264 (3.27)	.1083 (1.51)	.2135 (2.76)
Greece	1.6065 (6.54)	.9956 (10.42)	.6254 (6.82)	1.1137 (12.84)	.8686 (9.99)	1.1753 (13.26)
Hungary	-.1119 (1.39)	-.0644 (0.77)	-.1243 (1.57)	.2076 (2.83)	.0871 (1.15)	.2622 (3.44)
Ireland	.5804 (7.90)	.6272 (8.22)	.6376 (8.79)	1.0239 (15.09)	.7554 (10.90)	1.1921 (16.38)
Italy	.4246 (5.82)	.5168 (6.84)	.4355 (6.05)	.5231 (7.90)	.3617 (5.26)	.5280 (7.66)
Latvia	.8418 (9.67)	.9298 (10.29)	.9216 (10.65)	1.3298 (16.18)	1.0844 (12.84)	1.2522 (14.79)
Lithuania	.6663 (7.55)	.6764 (7.33)	.7593 (8.65)	1.4195 (16.99)	1.0569 (12.54)	1.1139 (13.23)
Luxembourg	-.0474 (0.54)	-.0520 (0.57)	-.1069 (1.23)	.3285 (4.08)	.3204 (3.84)	.0221 (0.26)
Malta	.5188 (5.81)	.3531 (3.79)	.5022 (5.65)	.9536 (11.55)	.6974 (8.19)	.8147 (9.58)
Netherlands	-.2341 (3.23)	.1767 (2.36)	.2584 (3.62)	.7669 (11.50)	.6150 (8.93)	.6621 (9.64)
Poland	.1782 (2.02)	.1529 (1.66)	.1688 (1.93)	.7082 (8.67)	.5803 (6.88)	.5546 (6.59)
Portugal	.0554 (0.76)	.1788 (2.35)	.0678 (0.94)	.4743 (7.04)	.3181 (4.60)	.5484 (7.80)
Romania	-.4398 (5.02)	-.3860 (4.25)	-.5302 (6.09)	.0133 (0.16)	.1767 (2.10)	-.0876 (1.04)
Slovakia	.9266 (10.48)	.9707 (10.49)	.9452 (10.74)	1.1965 (14.73)	1.0121 (12.04)	1.0212 (12.17)
Slovenia	.0856 (1.06)	.1250 (1.50)	.0828 (1.04)	.2467 (3.36)	.0574 (0.76)	.0029 (0.04)
Spain	11.6160 (19.33)	1.8457 (21.13)	1.7644 (21.23)	2.2174 (28.40)	1.9152 (24.12)	2.0142 (25.25)
Sweden	.7208 (9.01)	.6696 (8.03)	.7483 (9.43)	.6235 (8.29)	1.0323 (13.54)	.8653 (11.30)
Turkey	.7446 (7.48)	.8298 (7.94)	.7507 (7.56)	1.6727 (17.64)	1.4806 (15.41)	1.7707 (18.12)
_cons	-.0813	.2285	-.0630	-.0483	-.3129	-.3036
Adjusted R^2	.9370	.9317	.9383 .9482	.9436	.9450	.9455
N	8,987	8,905	8,888	8,785	8,871	8,663

Table 6. Unemployment rate regressions, by month, 1985-2021.

	$Urate_{t-12}$	General econ situation$_{t-12}$	Fear $_{t-12}$	Industry fear $_{t-12}$	N
All	.8259 (206.87	-.0260 (34.64)	.0126 (13.86)	-.0248 (18.99)	8,663
Austria	-.1215 (1.82)	-.0133 (6.98)	.0088 (3.20)	.0016 (0.39)	293
Belgium	.3384 (6.79)	-.0150 (8.34)	.0042 (2.03)	-.0109 (2.50)	410
Bulgaria	.5283 (9.84)	-.0098 (1.57)	.0027 (0.54)	-.0367 (4.31)	229
Croatia	.6724 (9.95)	-.0328 (5.37)	-.0052 (0.85)	-.0066 (0.71)	145
Cyprus	.3685 (5.24)	-.0273 (6.18)	.0163 (2.87)	-.0001 (0.00)	227
Czechia	.3469 (6.66)	-.0191 (7.12)	.0090 (2.71)	-.0147 (3.94)	290
Denmark	.3032 (6.54)	-.0174 (8.28)	.0070 (3.25)	-.0071 (2.51)	425
Estonia	.1853 (3.03)	-.0379 (3.76)	.0338 (3.76)	-.0358 (2.98)	244
Finland	.5241 (11.92)	-.0217 (7.88)	-.0034 (1.00)	-.0355 (8.42)	390
France	.2571 (4.17)	.0001 (0.54)	-.0128 (6.76)	-.0107 (3.23)	353
Germany	.6076 (12.45)	-.0118 (10.26)	.0022 (1.55)	-.0045 (1.73)	275
Greece	.6503 (13.34)	-.0161 (3.89)	.0099 (2.32)	.0001 (0.91)	266)
Hungary	.4756 (8.74)	.0021 (0.70)	-.0082 (2.77)	-.0078 (1.80)	293
Ireland	.5752 (16.13)	-.0239 (13.26)	.0038 (1.54)	-.0080 (3.69)	426
Italy	.2891 (5.55)	-.0100 (4.70)	.0060 (2.29)	-.0028 (0.74)	423
Latvia	.2222 (3.66)	-.0435 (5.73)	.0215 (2.26)	-.0786 (4.80)	229
Lithuania	.2795 (5.63)	-.0607 (8.41)	.0422 (7.05)	.0244 (2.63)	229
Luxembourg	.2482 (3.03)	-.0023 (0.94)	-.0052 (2.31)	.0033 (1.42)	221
Malta	.1512 (2.35)	-.0132 (5.92)	-.0022 (0.84)	.0013 (0.68)	211
Netherlands	.5386 (12.27)	-.0099 (8.73)	.0051(4.04)	-.0100 (2.75)	426
Poland	.5422 (10.72)	-.0020 (0.43)	-.0199 (5.47)	-.0371 (4.19)	229
Portugal	.3840 (8.52)	-.0185 (6.86)	.0092 (3.08)	-.0140 (2.04)	401
Romania	-.1795 (2.48)	-.0083 (1.93)	.0110 (2.69)	.0001 (0.12)	216
Slovakia	.2660 (4.89)	-.0418 (9.26)	.0133 (3.84)	-.0171 (3.82)	254
Slovenia	.1309 (2.20)	-.0169 (5.13)	-.0046 (1.20)	-.0095 (2.11)	291
Spain	.6528 (18.69)	-.0504 (16.84)	.0001 (0.02)	.0028 (0.56)	398
Sweden	.1290 (2.04)	-.0135 (5,38)	.0113 (4.15)	-.0067 (1.88)	296
Turkey	-.4040 (4.45)	-.0272 (2.05)	.0195 (2.05)	-.0147 (1.81)	156
UK	.4657 (10.19)	-.0152 (8.76)	.0111 (6.01)	-.0000 (0.02)	417
Bulgaria+Slovenia+Malta+Croatia+Spain+Finland with country dummies					
	.8284 (81.98)	-.0172 (8.47)	.0083 (2.98)	-.0203 (6.72)	1664

Table 7. Unemployment rate equations and fear of unemployment with more specifications (in month*country cells & includes year dummies.

$Fear_{t-12}$	.0231 (27.90)	.0105 (12.68)	.0160 (20.24)	.0176 (17.35)
Industry $fear_t$	-.0332 (27.38)	-.0174 (14.40)	-.0169 (14.08)	-.0318 (26.11)
Industry $fear_{t-12}$	-.0142 (10.39)	-.0145 (11.62)	-.0135 (10.73)	-.0106 (7.83)
Financial $situation_{t-12}$		-.0403 (23.50)		
Economic $situation_{t-12}$		-.0111 (11.97)		
Consumer $confidence_t$			-.0576 (39.18)	
Consumer $confidence_{t-12}$				-.0244 (12.13)
Unempt $rate_{t-12}$	.8363 (200.90)	.7869 (186.42)	.7943 (200.40)	.8029 (168.47)
Austria	.3792 (4.75)	.2660 (3.60)	.2197 (3.04)	.2859 (3.67)
Belgium	.3089 (4.31)	.4485 (6.86)	.4007 (6.18)	.3743 (5.35)
Bulgaria	.0402 (0.46)	-.6944 (8.36)	-.7736 (9.53)	-.2505 (2.87)
Croatia	1.1040 (10.66)	.7278 (7.66)	.6259 (6.61)	.9714 (9.57)
Cyprus	.8280 (9.45)	.3664 (4.43)	.1988 (2.46)	.6234 (7.23)
Czechia	.0966 (1.22)	.0428 (0.58)	-.0778 (1.08)	.0087 (0.11)
Denmark	.8301 (11.53)	1.2251 (18.43)	1.1643 (17.70)	.9334 (13.21)
Estonia	.7963 (9.36)	1.0847 (13.73)	.8752 (11.33)	.8322 (10.00)
Finland	.8213 (11.03)	1.3931 (20.10)	1.0105 (13.88)	.6698 (8.43)
France	.3159 (4.19)	.2833 (4.11)	.4735 (6.92)	.4404 (5.94)
Germany	.0441 (0.55)	.4484 (6.03)	.1521 (2.08)	.0809 (1.03)
Greece	1.3558 (14.67)	.5409 (6.06)	.1991 (2.25)	1.0770 (11.65)
Hungary	.2844 (3.56)	-.4168 (5.26)	-.5081 (6.79)	-.0573 (0.71)
Ireland	1.4762 (19.18)	1.3037 (18.53)	1.5147 (21.63)	1.5694 (20.66)
Italy	.7928 (11.00)	.5176 (7.83)	.6509 (9.96)	.8051 (11.46)
Latvia	1.2319 (14.29)	1.2759 (15.80)	1.3161 (16.36)	1.2888 (14.78)
Lithuania	.8795 (10.04)	.9402 (11.65)	1.0709 (13.44)	.9622 (11.20)
Luxembourg	-.4963 (5.65)	.0438 (0.54)	-.1961 (2.45)	-.4165 (4.84)
Malta	.6777 (7.63)	.1640 (1.90)	.3199 (3.95)	.4597 (5.23)
Netherlands	.4074 (5.72)	.6369 (9.72)	.4550 (7.05)	.3970 (5.72)
Poland	.1974 (2.26)	.4873 (6.06)	.4366 (5.49)	.3225 (3.75)
Portugal	.6080 (8.26)	.4116 (6.08)	.2827 (4.21)	.5510 (7.67)
Romania	-.1903 (2.21)	-.4159 (5.09)	-.6015 (7.53)	-.3358 (3.98)
Slovakia	.9575 (10.91)	.9581 (11.96)	.6467 (8.07)	.8851 (10.29)
Slovenia	.0451 (0.57)	-.6150 (8.00)	-.5567 (7.61)	-.2047 (2.58)
Spain	1 1.94 (23.29)	2.1272 (27.90)	2.0510 (27.05)	2.1451 (25.97)
Sweden	.4630 (5.83)	1.1271 (15.15)	.9798 (13.39)	.6306 (8.01)
Turkey	1.4940 (14.75)	1.3253 (13.83)	1.6549 (17.95)	1.6669 (16.53)
_cons	-.1953	.0952	.0669	.0319
Adjusted R^2	.9398	.9498	.9502	.9422
N	8,696	8,663	8,582	8,582

```
Q1 FIN SITN LAST 12 MTHS
Q2 FIN SITN NEXT 12 MTHS
Q4 GEN ECON SITN NEXT 12 MTHS
Q9 MAJOR PURCHASES NEXT 12 MTHS
cof =(q1 +q2 +q4+q9)/4
```

Table 8. Country*year cell life satisfaction, unemployment and fear of unemployment

	1975-2020	1985-2020	1985-2020
$Life_{t-1}$	.7099 (30.00)	.7010 (27.72)	.7584 (31.71)
Unemployment rate	-.0061 (4.86)	-.0063 (4.59)	-.0043 (3.51)
Fear score*100			-.0791 (3.48)
Belgium	.0242 (1.45)	.0264 (1.43)	.0292 (1.76)
Bulgaria	-.2034 (6.66)	-.2072 (6.50)	-.1591 (5.73)
Czechia	-.0316 (1.31)	-.0300 (1.19)	-.0219 (1.01)
Denmark	.1510 (7.64)	.1587 (7.22)	.1221 (5.64)
Estonia	-.0607 (2.45)	-.0597 (2.33)	-.0567 (2.53)
Finland	.0591 (2.83)	.0643 (2.95)	.0448 (2.27)
France	-.0436 (2.58)	-.0293 (1.55)	-.0134 (0.81)
Germany	-.0177 (1.10)	-.0163 (0.90)	-.0023 (0.14)
Greece	-.1204 (5.67)	-.1233 (5.43)	-.0819 (4.14)
Ireland	.0579 (3.28)	.0652 (3.32)	.0525 (2.92)
Italy	-.0714 (3.98)	-.0626 (3.17)	-.0430 (2.52)
Latvia	-.0541 (2.11)	-.0536 (2.02)	-.0454 (1.98)
Lithuania	-.0714 (2.78)	-.0712 (2.68)	-.0611 (2.65)
Macedonia	-.0222 (0.63)	-.0202 (0.54)	-.0497 (1.51)
Malta	.0010 (0.04)	.0043 (0.18)	-.0097 (0.44)
Montenegro	-.1335 (4.08)	-.1317 (3.88)	-.0562 (1.83)
Netherlands	.0925 (5.33)	.0937 (4.84)	.0752 (4.06)
Poland	-.0280 (1.15)	-.0262 (1.04)	-.0257 (1.17)
Portugal	-.1298 (6.13)	-.1304 (5.91)	-.0928 (4.84)
Romania	-.1563 (5.54)	-.1586 (5.40)	-.1133 (4.45)
Serbia	-.1268 (3.29)	-.1284 (3.21)	-.1179 (3.38)
Slovakia	-.0406 (1.61)	-.0393 (1.50)	-.0383 (1.69)
Slovenia	.0086 (0.36)	.0120 (0.49)	.0128 (0.60)
Spain	.0337 (1.50)	.0382 (1.62)	.0250 (1.20)
Sweden	.0966 (4.48)	.1030 (4.57)	.0762 (3.66)
Turkey	-.0831 (3.21)	-.0821 (3.06)	-.0720 (3.05)
UK	.0393 (2.42)	.0453 (2.47)	.0429 (2.54)
Year dummies	43	34	34
_cons	.9213	.9439	.7579
Adjusted R^2	.9300	.9272	.9465
N	820	736	708

Excluded Austria- Iceland and Norway also included in columns 1 and 2.
https://ec.europa.eu/eurostat/web/lfs/data/database source of monthly unemployment rate and World Database of Happiness for life satisfaction data. T-statistics in parentheses.

Table 9. Fear of unemployment in 28 countries 2007-2009 and 2017-2020

a) Western Europe

	Austria	Belgium	Cyprus	Denmark	Finland	France
2007	-3	10	-27	-8	-2	5
2008	17	22	12	20	18	27
2009	52	65	73	31	43	61
2017	12	2	-11	-9	-6	9
2018	-2	-1	-12	-9	-8	9
2019	8	10	-7	1	6	9
2020	27	51	47	15	29	45

	Germany	Greece	Ireland	Italy	Luxembourg	Malta
2007	-1	35	33	19	5	-14
2008	17	50	54	27	5	-6
2009	70	63	63	43	31	38
2017	14	51	-12	13	8	13
2018	8	30	-12	8	-1	-18
2019	16	7	7	14	-3	-30
2020	44	52	26	41	10	-24

	Netherlands	Portugal	Spain	Sweden	UK
2007	-16	43	12	-18	28
2008	11	51	46	29	45
2009	61	64	42	39	55
2017	-23	5	-3	16	16
2018	-26	-11	-1	3	19
2019	-7	-1	13	2	24
2020	52	53	48	19	43

b) Eastern Europe

	Albania	Bulgaria	Croatia	Czechia	Estonia	Hungary
2007	9	10	41	3	-7	53
2008	15	17	37	14	34	53
2009	57	55	56	45	47	71
2017	-4	19	9	0	6	4
2018	0	14	-1	0	2	1
2019	4	15	-1	10	6	-2
2020	19	38	32	42	34	32

	Latvia	Lithuania	Poland	Slovenia	Slovakia
2007	-4	21	31	11	-12
2008	32	29	16	19	1
2009	66	62	21	54	53
2017	10	6	-3	-5	-5
2018	6	5	-6	-5	-8
2019	6	3	-2	7	2
2020	49	29	39	45	47

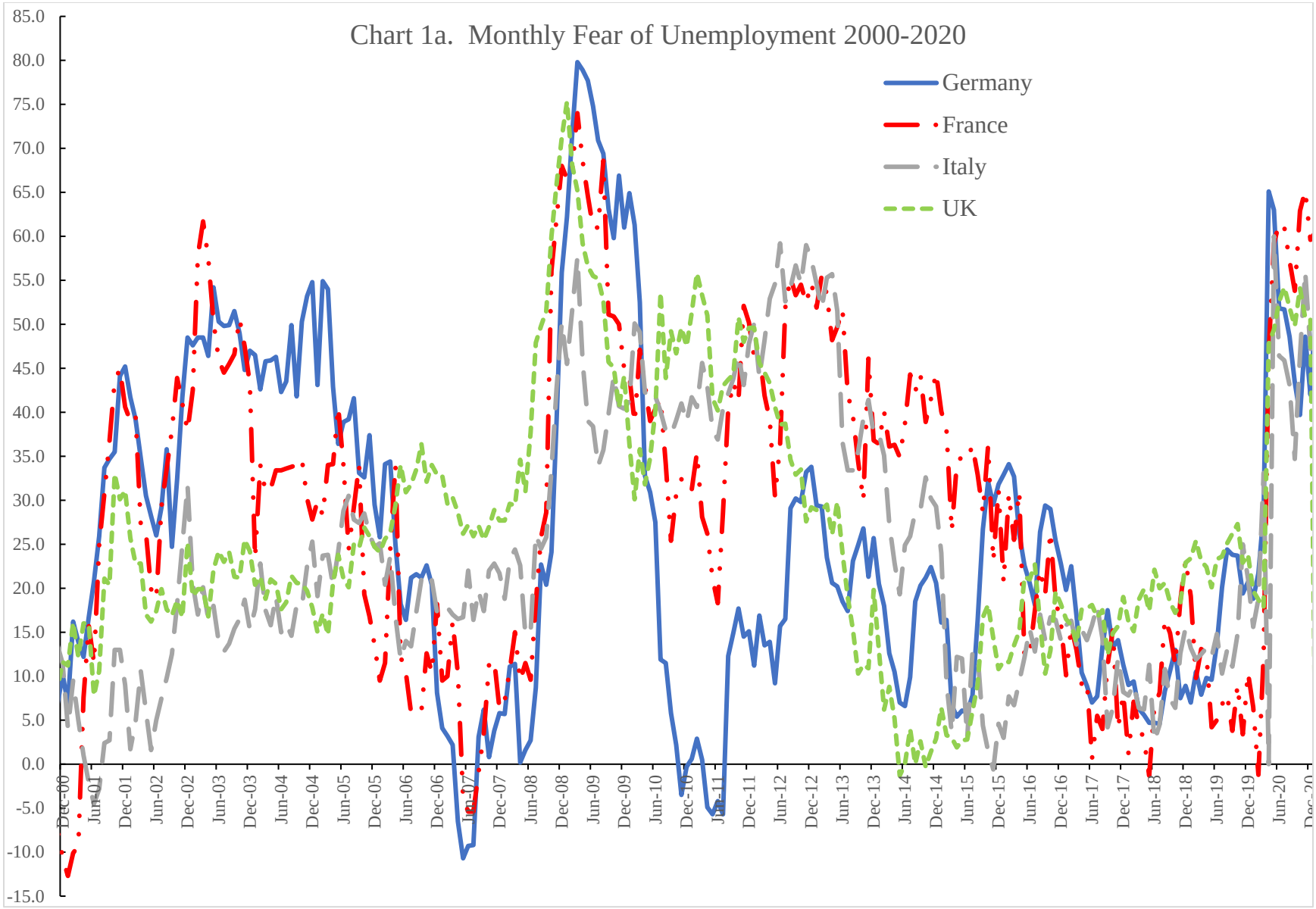


Chart 1a. Monthly Fear of Unemployment 2000-2020
Germany
France
Italy
UK
85.0
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
Dec-04
Jun-05
Dec-05
Jun-06
Dec-06
Jun-07
Dec-07
Jun-08
Dec-08
Jun-09
Dec-09
Jun-10
Dec-10
Jun-11
Dec-11
Jun-12
Dec-12
Jun-13
Dec-13
Jun-14
Dec-14
Jun-15
Dec-15
Jun-16
Dec-16
Jun-17
Dec-17
Jun-18
Dec-18
Jun-19
Dec-19
Jun-20

Chart 1b. Unemployment Rates, France, Germany Italy, UK and USA, 1991-2020

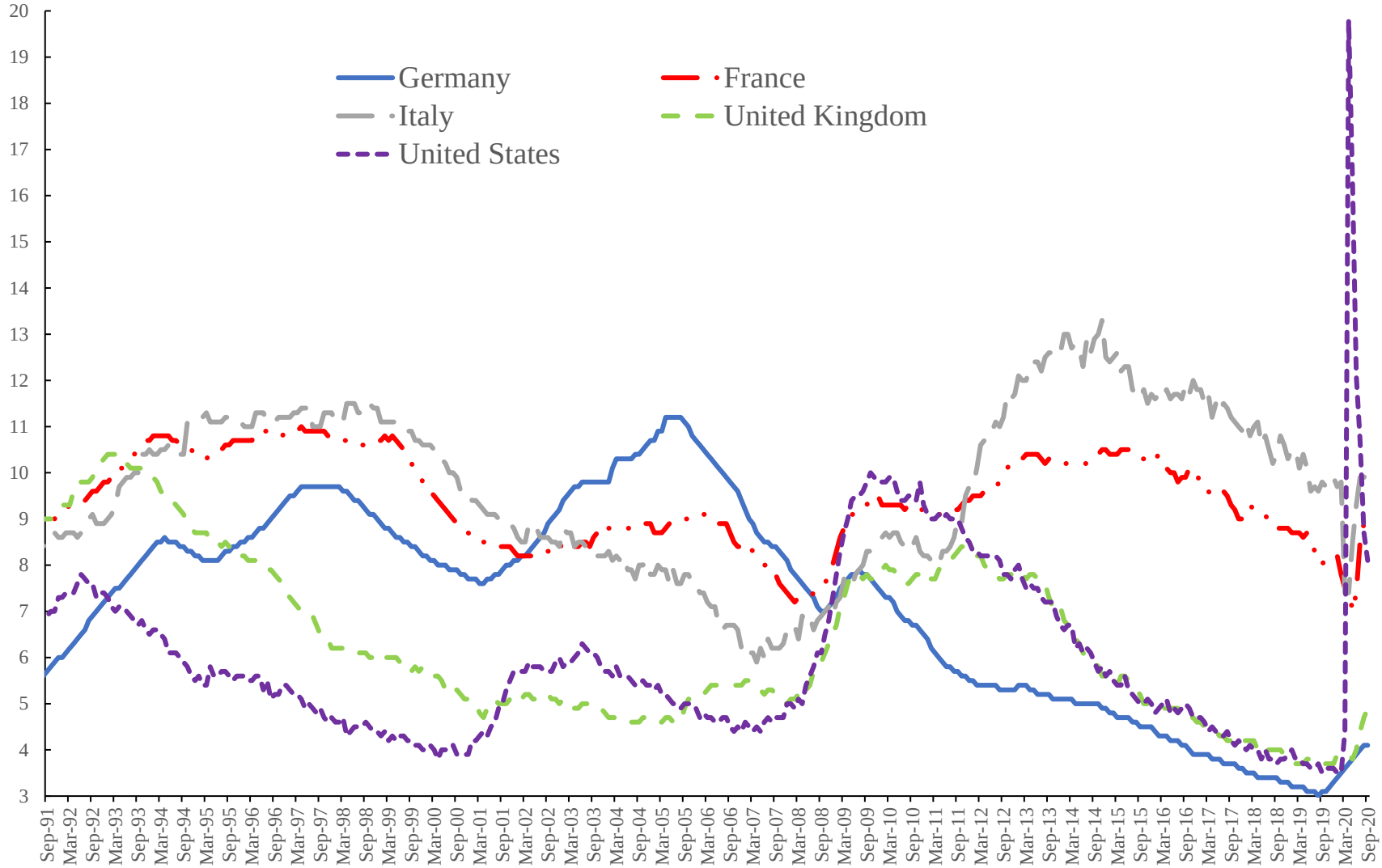


Chart 2. Fear of unemployment and industry expectations of employment in the months ahead, European Union, 1985-2021

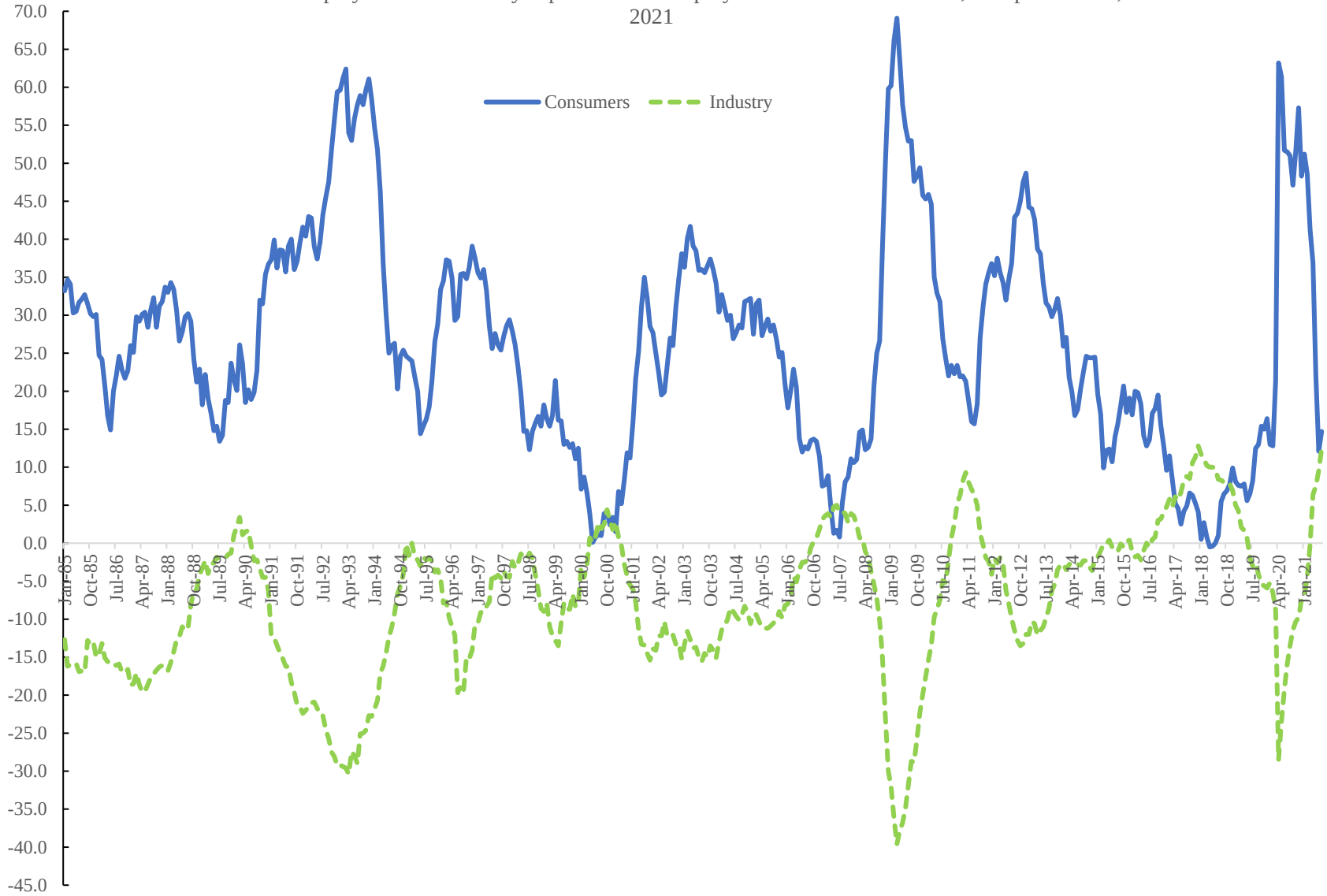
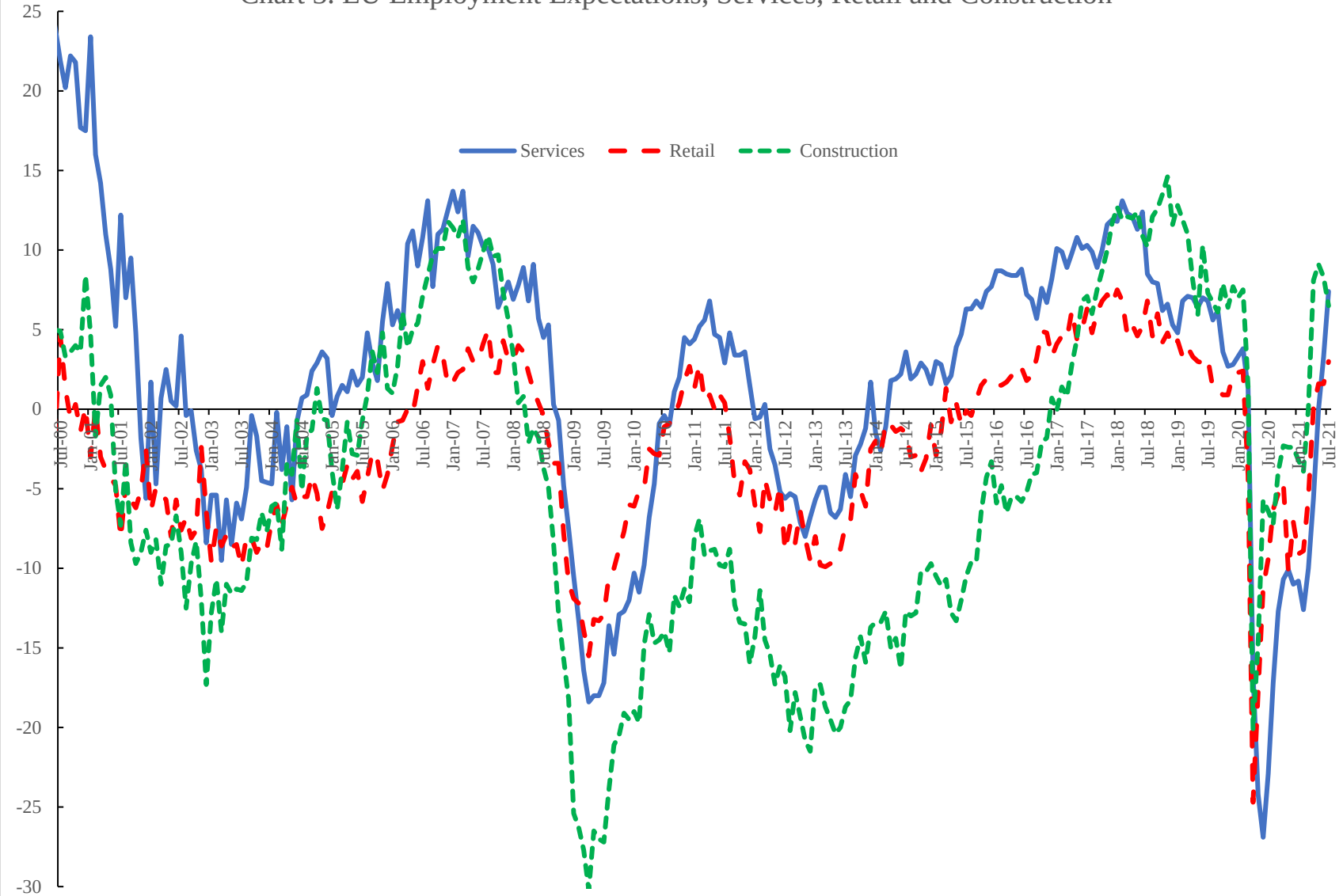


Chart 3. EU Employment Expectations, Services, Retail and Construction



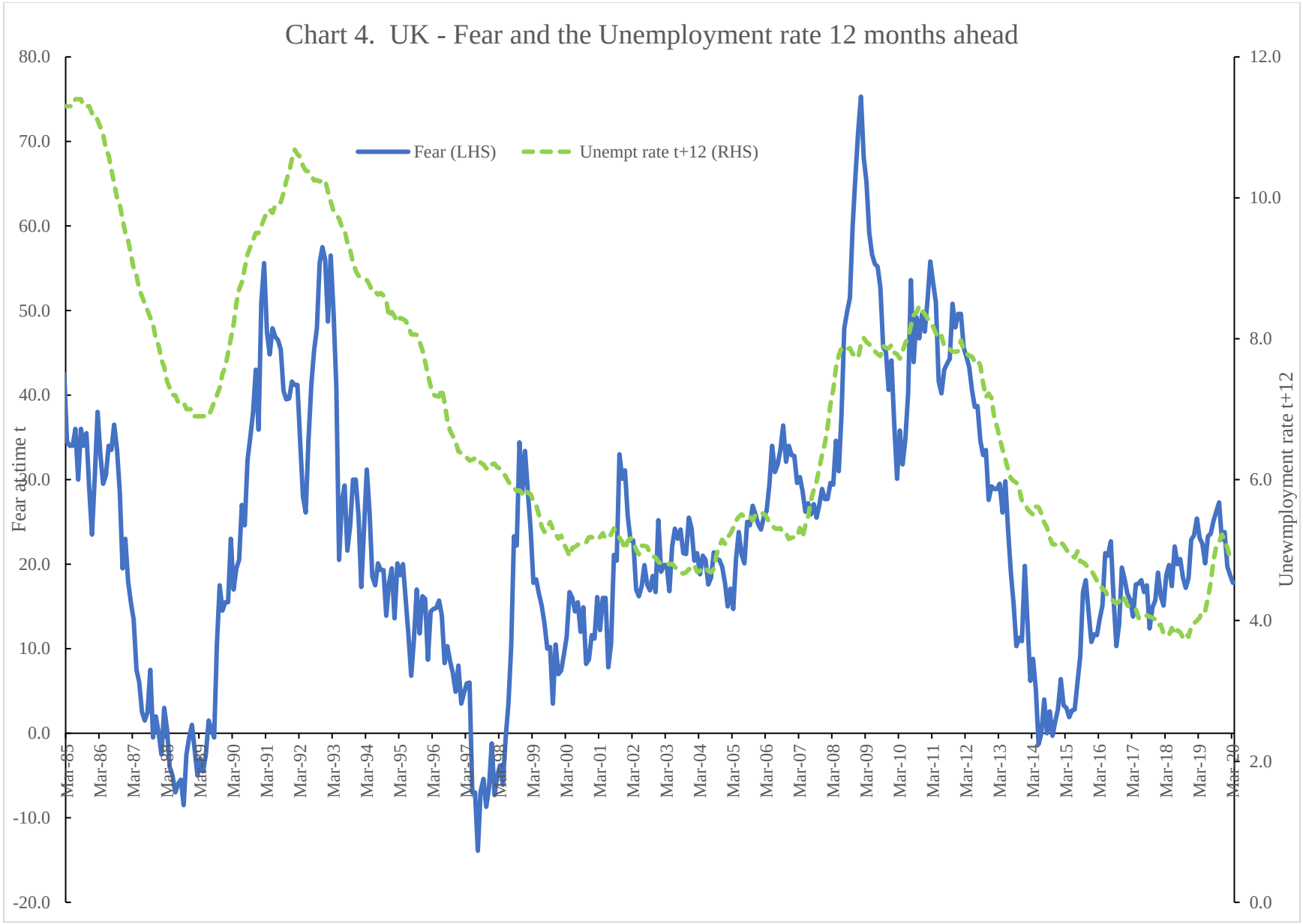


Chart 4. UK - Fear and the Unemployment rate 12 months ahead
Fear (LHS)
Unempt rate t+12 (RHS)
Fear at time t
Unewmployment rate t+12
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Mar-85
Mar-86
Mar-87
Mar-88
Mar-89
Mar-90
Mar-91
Mar-92
Mar-93
Mar-94
Mar-95
Mar-96
Mar-97
Mar-98
Mar-99
Mar-00
Mar-01
Mar-02
Mar-03
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20

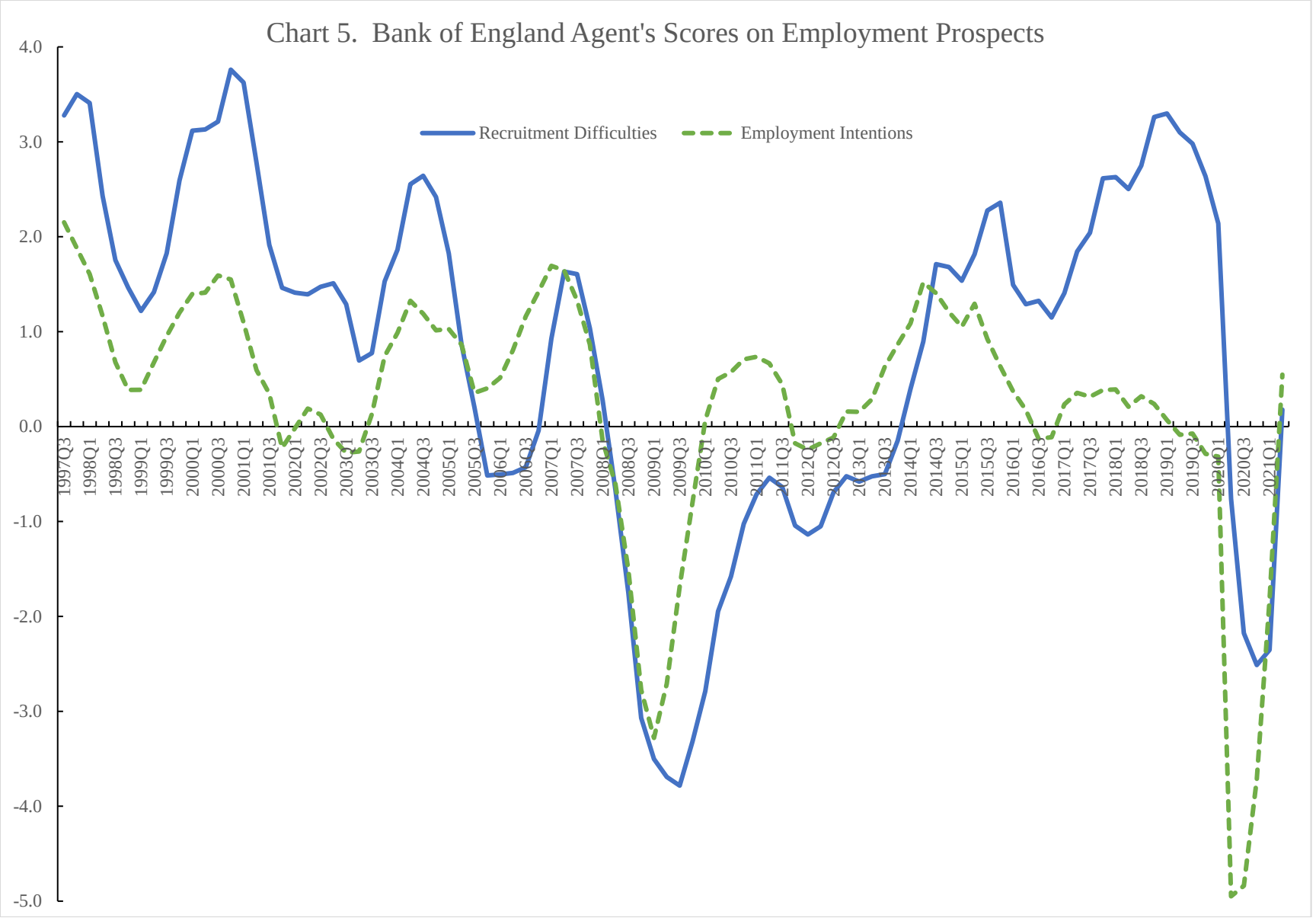
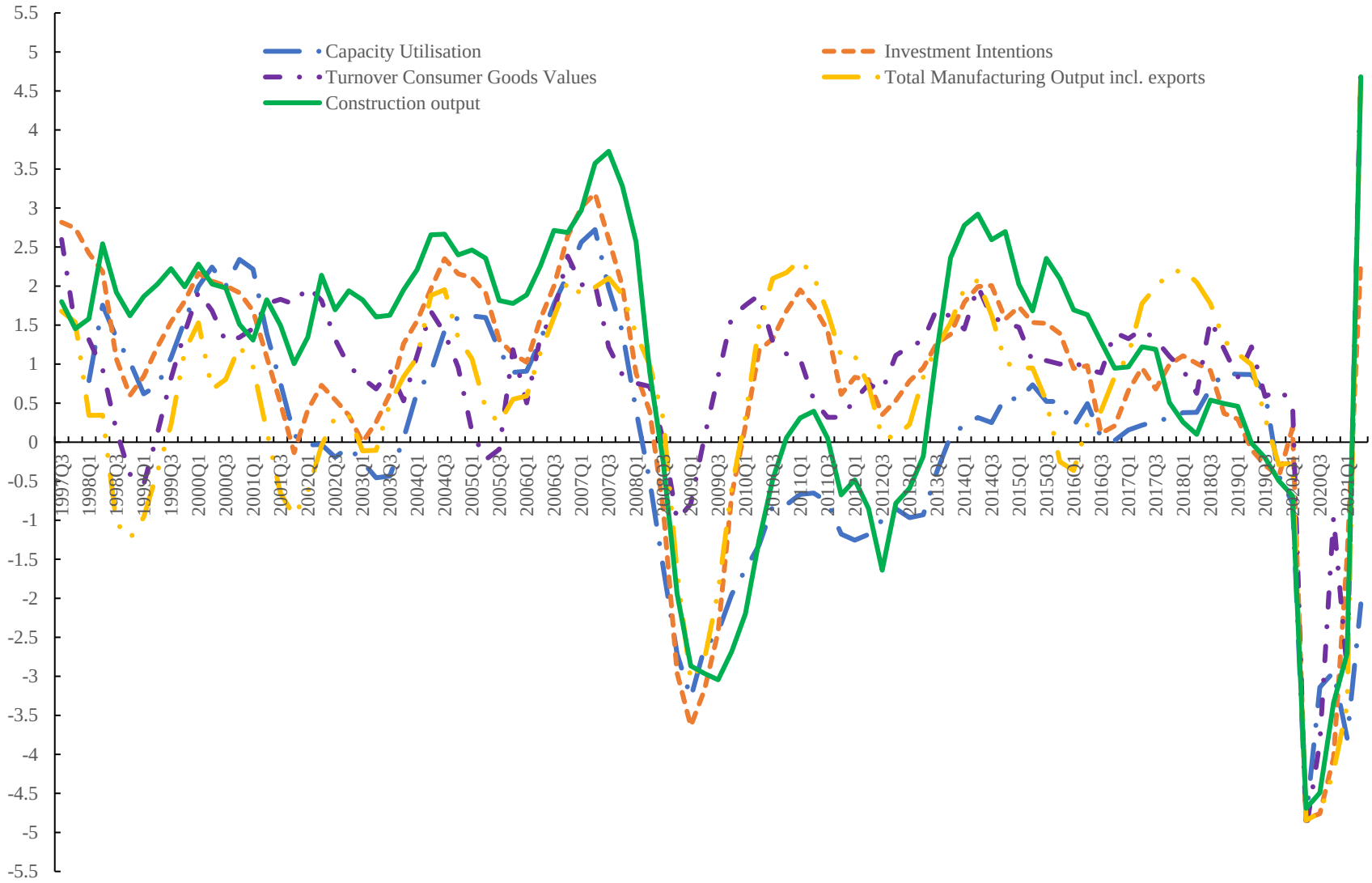


Chart 5. Bank of England Agent's Scores on Employment Prospects
Recruitment Difficulties
Employment Intentions
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
1997Q3
1998Q1
1998Q3
1999Q1
1999Q3
2000Q1
2000Q3
2001Q1
2001Q3
2002Q1
2002Q3
2003Q1
2003Q3
2004Q1
2004Q3
2005Q1
2005Q3
2006Q1
2006Q3
2007Q1
2007Q3
2008Q1
2008Q3
2009Q1
2009Q3
2010Q1
2010Q3
2011Q1
2011Q3
2012Q1
2012Q3
2013Q1
2013Q3
2014Q1
2014Q3
2015Q1
2015Q3
2016Q1
2016Q3
2017Q1
2017Q3
2018Q1
2018Q3
2019Q1
2019Q3
2020Q1
2020Q3
2021Q1

Chart 6. Bank of England Agents' Scores, Turnover, Output and Investment Intentions



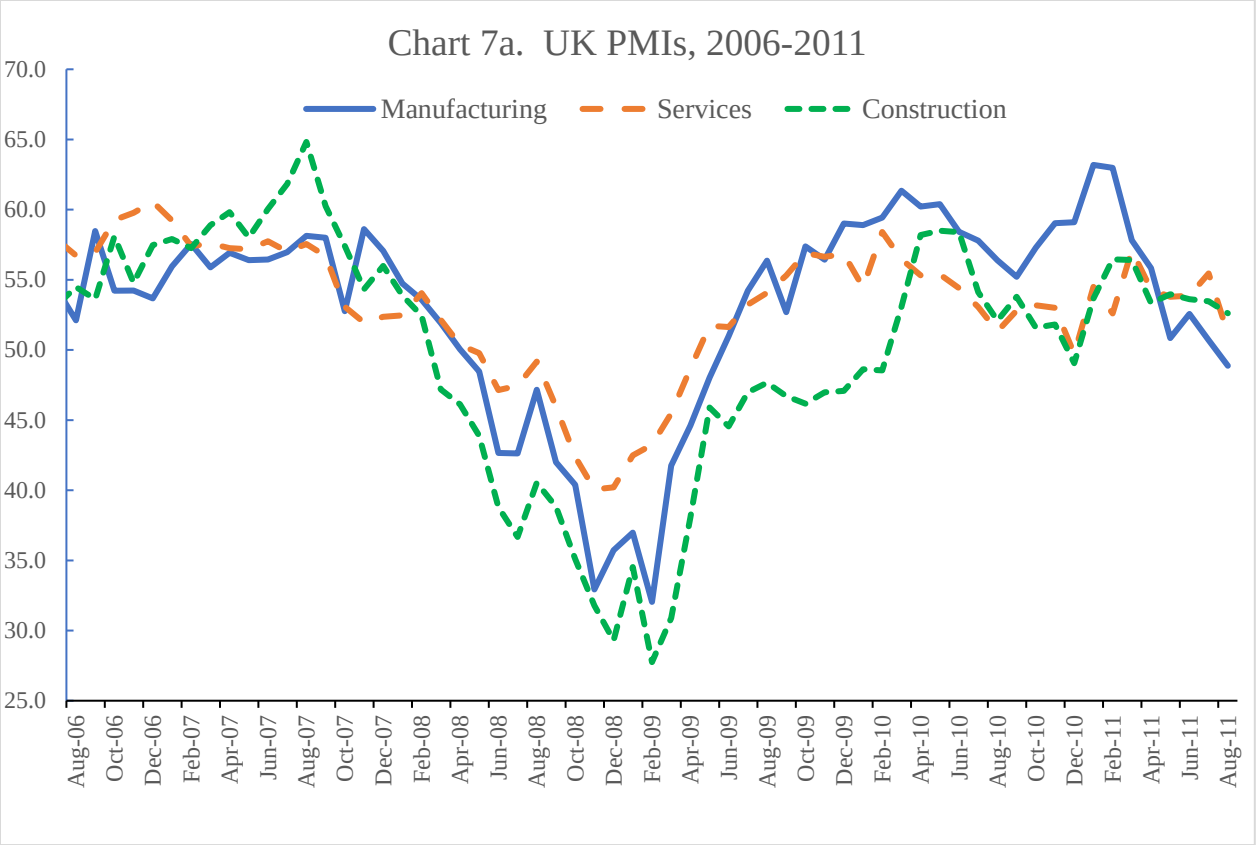


Chart 7b. UK PMIS and first and last GDP estimates

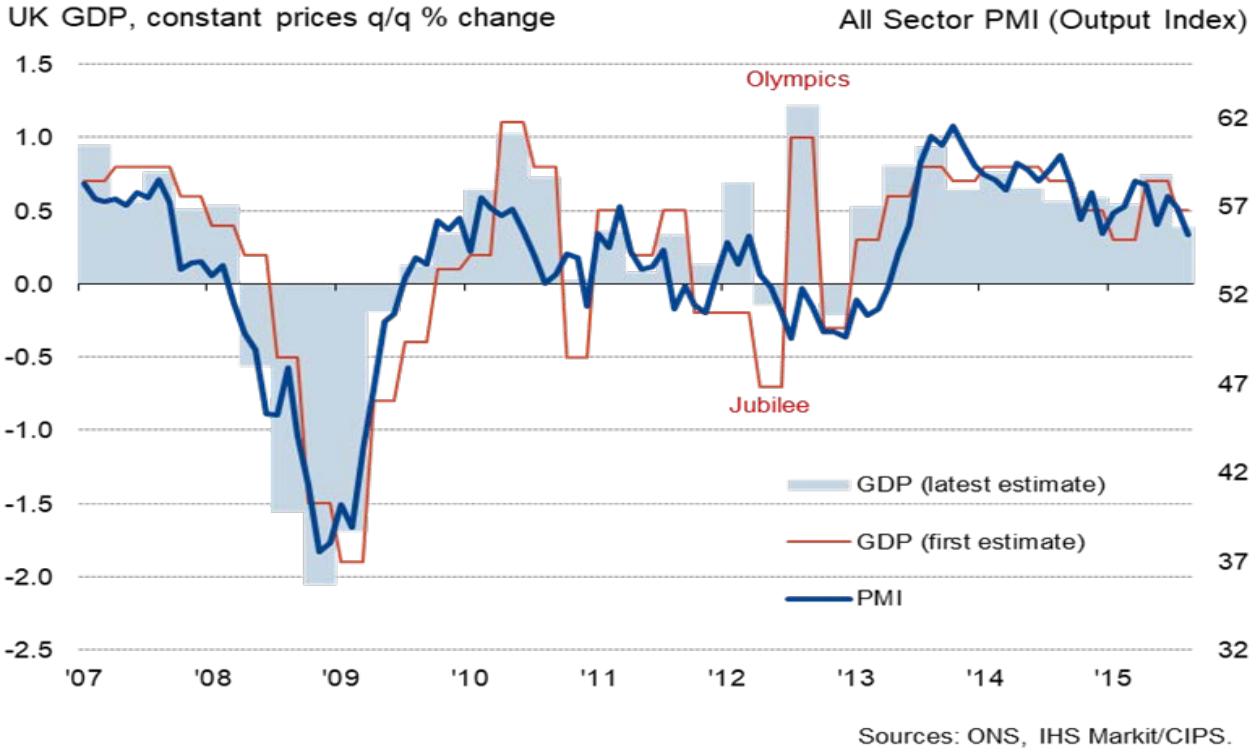
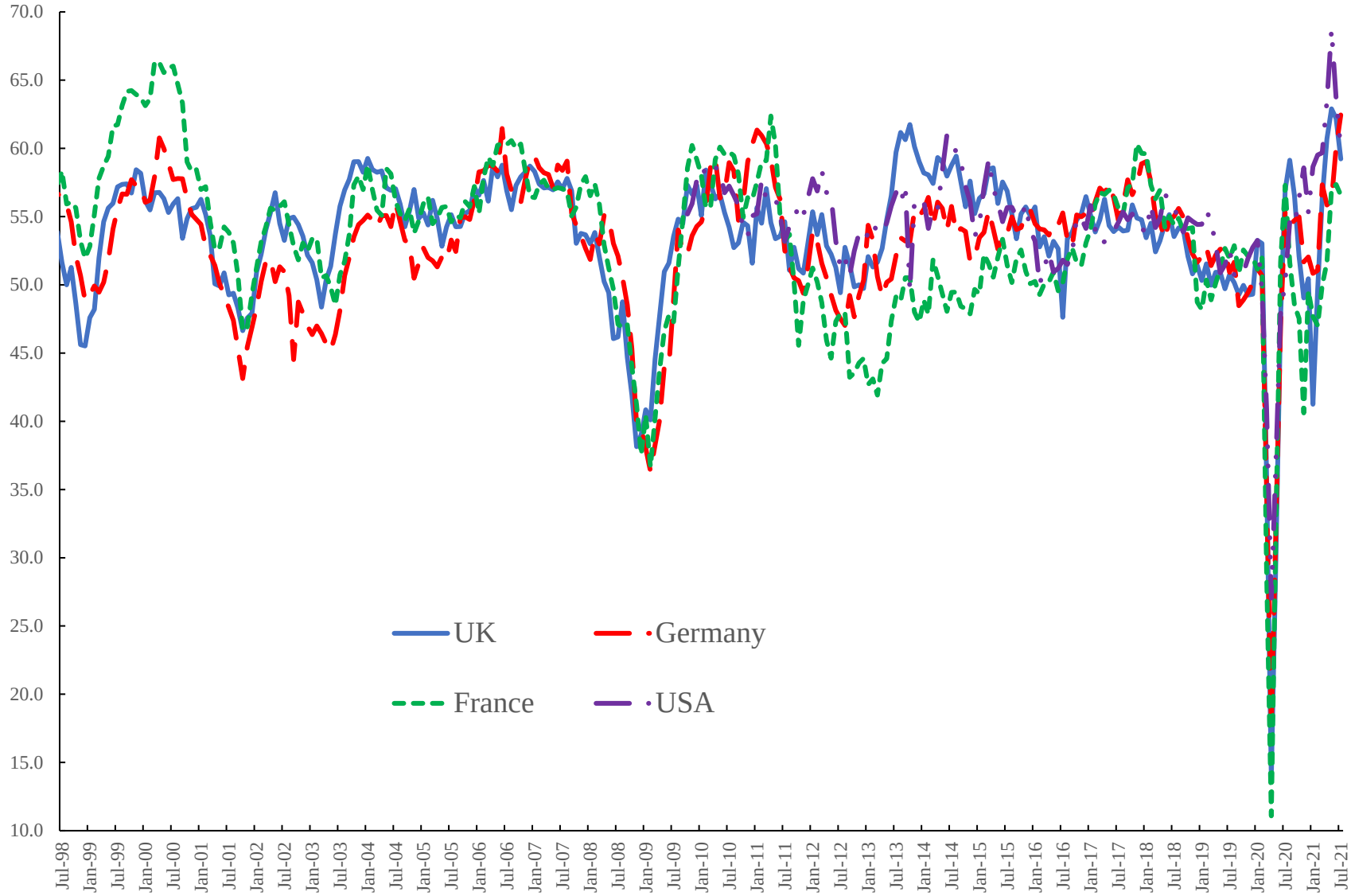


Chart 8. Monthly Output PMIs, France, Germany, UK and USA 1998=2021



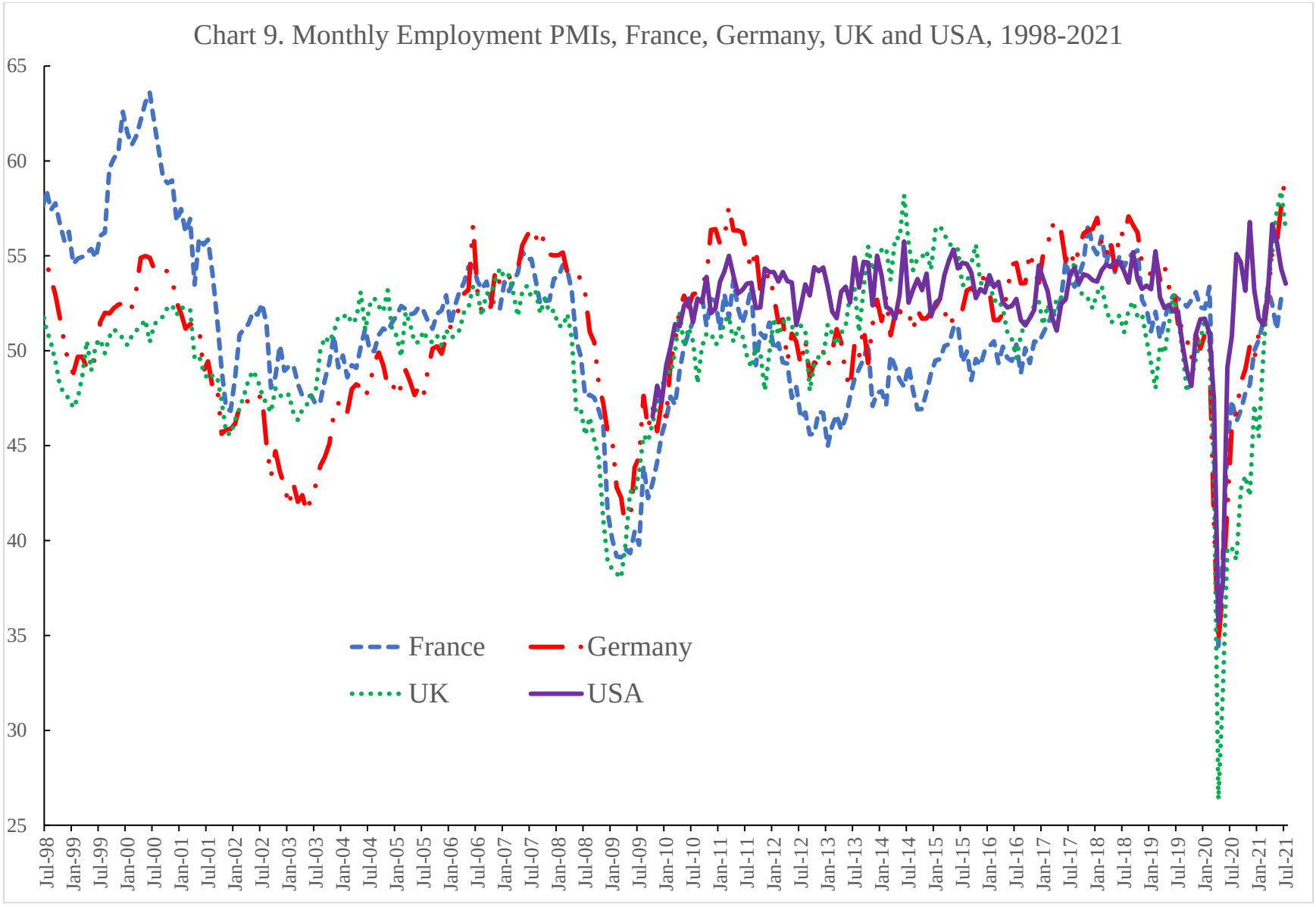


Chart 9. Monthly Employment PMIs, France, Germany, UK and USA, 1998-2021
65
60
55
50
45
40
35
30
25
France
Germany
UK
USA
Jul-98
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
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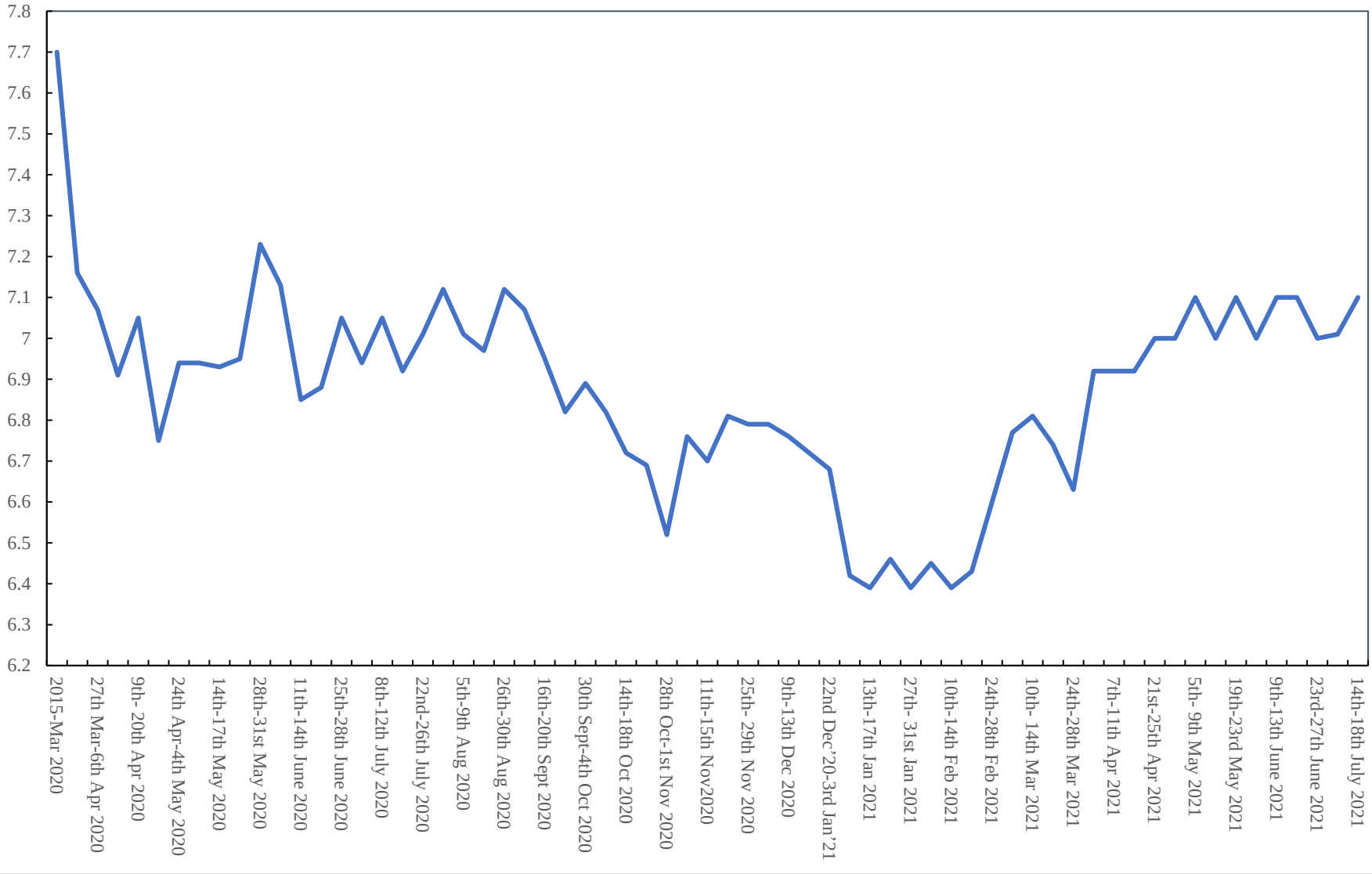
Jul-18
Jan-19
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21

Chart 10. ONS Life satisfaction, UK, 2020-2021



Data Appendix Table 1. US Economic Indicators, January 2006-April 2008 - All data are seasonally adjusted except columns 1 and 2.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Jan-06	10.4	14.7	2292	2224	106.8	91.2	27.0	0.6	3.3	2.3	3.2	3.1
Feb-06	8.4	13.8	2125	2129	102.7	86.7	27.4	0.6	3.5	2.6	3.3	3.2
Mar-06	7.2	12.3	1965	2097	107.5	88.9	28.3	0.6	3.6	3.1	3.3	3.2
Apr-06	4.0	11.2	1821	1987	109.8	87.4	29.4	0.6	4.0	1.9	3.0	2.8
May-06	5.3	10.0	1944	1918	104.7	79.1	29.1	0.5	3.8	1.4	3.5	2.4
Jun-06	0.1	8.6	1819	1879	105.4	84.9	28.0	0.4	4.0	0.8	2.5	2.4
Jul-06	1.0	7.2	1746	1774	107.0	84.7	28.6	0.3	4.0	0.8	2.5	1.9
Aug-06	-2.2	5.7	1646	1731	100.2	82.0	24.5	0.3	4.0	1.0	2.6	5.0
Sep-06	-1.8	4.3	1721	1654	105.9	85.4	26.2	0.4	4.2	0.8	3.0	3.1
Oct-06	-4.4	3.0	1470	1560	105.1	93.6	25.6	0.4	4.0	0.5	3.4	3.6
Nov-06	-3.4	1.8	1565	1527	105.3	92.1	25.7	0.3	4.2	0.0	3.3	3.2
Dec-06	-0.2	0.7	1629	1628	110.0	91.7	27.6	0.3	4.3	0.4	3.3	2.9
Jan-07	-3.0	-0.1	1403	1566	110.2	96.9	29.6	0.4	4.2	0.9	3.4	3.0
Feb-07	-1.0	-0.8	1487	1541	111.2	91.3	27.8	0.3	4.1	1.7	3.2	3.3
Mar-07	-0.1	-1.3	1491	1569	108.2	88.4	30.3	0.3	4.2	1.5	3.0	3.7
Apr-07	-1.2	-2.1	1485	1457	106.3	87.1	29.0	0.2	3.8	1.5	3.0	3.1
May-07	-2.5	-2.8	1440	1520	108.5	88.3	29.1	0.2	4.1	1.4	2.9	3.2
Jun-07	-0.1	-3.4	1468	1413	105.3	85.3	27.6	0.2	4.1	1.2	2.9	3.0
Jul-07	-0.7	-3.8	1371	1389	111.9	90.4	30.0	0.3	4.1	1.3	2.5	3.6
Aug-07	0.2	-4.3	1347	1322	105.6	83.4	27.5	0.2	4.0	0.6	3.2	4.0
Sep-07	-4.7	-4.9	1182	1261	99.5	83.4	25.6	0.2	4.1	0.9	3.2	3.4
Oct-07	-5.6	-6.1	1274	1170	95.2	80.9	24.1	0.2	3.8	0.7	2.7	2.7
Nov-07	-3.9	-7.7	1178	1162	87.8	76.1	23.3	0.2	3.8	1.3	2.8	2.0
Dec-07	-6.6	-9.0	1000	1080	90.6	75.5	23.6	0.2	3.7	0.9	2.2	1.8
Jan-08	-5.3	-10.7	1071	1061	87.3	78.4	23.8	0.1	3.7	0.8	1.9	1.4
Feb-08	-8.2		1065	984	76.4	70.8	21.5	0.0	3.7	-0.1	1.7	1.3
Mar-08			947	927	64.5	69.5	18.8	-0.2	3.6			
Apr-08						62.6						

Source Blanchflower (2008)

Column 1. Median house prices of existing one family homes inc. condos National Association of Realtors % oya

Column 2. 20 city house price index - S & P / Case-Shiller % oya

Column 3. Housing starts - Census Bureau. Annualised level, thousands of units

Column 4. Permits to build - Census Bureau. Annualised level, thousands of units

Column 5. Consumer Confidence - Conference Board Index

Column 6. Consumer Confidence - Reuters / University of Michigan Index

Column 7. Consumer Confidence – Conference Board % saying jobs are plentiful

Column 8. Private non-farm payrolls - Bureau of Labor Statistics % change, three months on previous three months

Column 9. Private average hourly earnings – Bureau of Labour Statistics % oya

Column 10. Nominal Retail Sales - Census Bureau % change, three months on previous three months

Column 11. Real consumption - Bureau of Economic Analysis % oya

Column 12. Real personal disposable income – Bureau of Economic Analysis % oya

Data Appendix Table 2. UK Economic Conditions May 2004-March 2008 Source Blanchflower (2008)

a) UK housing

	(1) Halifax House price Index	(2) Nationwide House price Index	(3) HBF Price balance	(4) RICS Sales to stock ratio	(5) Loan Approvals '000s
2007Q2	2.3	2.1	5	0.41	337
2007Q3	0.8	1.2	-1	0.38	318
2007Q4	-0.9	0.6	-22	0.33	242
2008Q1	-1.0	-1.7		0.27	
Aug-07	0.3	0.5	6	0.38	106
Sep-07	-0.6	0.5	-9	0.38	100
Oct-07	-0.7	1.1	-10	0.35	88
Nov-07	-1.3	-1.0	-24	0.33	81
Dec-07	1.4	-0.4	-33	0.30	72
Jan-08	0.0	-0.4	-41	0.29	74
Feb-08	-0.4	-0.5	-47	0.26	73
Mar-08	-2.5	-0.6		0.25	

b) UK consumer confidence

	(6) Nationwide consumer confidence	(7) GfK balance	(8) GfK future economic situation	(9) GfK major purchases
May-04	100	-2	-14	12
Sep-04	106	-7	-14	5
Jan-05	110	1	-10	11
Jan-06	94	-3	-15	10
Sep-06	92	-7	-21	9
Dec-06	84	-8	-19	2
Mar-07	88	-8	-10	2
Apr-07	90	-6	-18	4
May-07	99	-2	-10	4
Jun-07	95	-3	-10	7
Jul-07	96	-6	-13	-5
Aug-07	94	-4	-15	3
Sep-07	99	-7	-19	-2
Oct-07	98	-8	-17	-2
Nov-07	86	-10	-21	-3
Dec-07	85	-14	-26	-8
Jan-08	81	-13	-26	-20
Feb-08	78	-17	-29	-21
Mar-08	77	-19	-32	-21
Series average	96	-7	-8	8

c) Labour market surveys

	(10) REC	(11) CIPS/NTC
	Demand for staff	
28-Feb-05	54.5	50.1
31-Mar-05	55.0	52.2
30-Apr-05	55.9	51.9
31-May-05	56.3	50.7
30-Jun-05	55.4	50.8
31-Jul-05	54.7	51.3
31-Aug-05	55.1	51.0
30-Sep-05	53.8	50.9
31-Oct-05	54.7	51.0
30-Nov-05	55.4	50.3
31-Dec-05	55.9	51.2
31-Jan-06	54.3	50.9
28-Feb-06	52.3	51.0
31-Mar-06	54.6	51.5
30-Apr-06	55.2	52.4
31-May-06	57.4	52.5
30-Jun-06	57.0	53.4
31-Jul-06	59.1	53.1
31-Aug-06	58.2	52.1
30-Sep-06	56.8	53.3
31-Oct-06	59.3	53.2
30-Nov-06	61.2	53.6
31-Dec-06	61.8	54.3
31-Jan-07	60.8	53.8
28-Feb-07	59.0	54.0
31-Mar-07	62.3	53.3
30-Apr-07	60.5	52.5
31-May-07	59.4	53.7
30-Jun-07	63.2	53.9
31-Jul-07	64.1	53.4
31-Aug-07	60.1	53.8
30-Sep-07	60.2	52.5
31-Oct-07	57.4	53.0
30-Nov-07	53.7	51.9
31-Dec-07	50.7	52.1
31-Jan-08	51.4	51.4
29-Feb-08	49.0	51.3

Data Appendix Table 3. Consumer Fear by country by year, 1985-2021

	UK	Belgium	Denmark	Germany	Ireland	Greece	Spain	France	Italy	Netherlands	Portugal	Finland
1985	34	33	-4	23	46	12		47	44	-3		
1986	31	30	1	11	43	25	23	31	36	-10	21	
1987	6	33	27	26	43	31	27	38	38	5	12	14
1988	-3	21	33	33	32	22	18	27	39	10	8	9
1989	4	8	28	21	17	19	7	16	30	-2	3	-6
1990	28	9	23	35	14	35	14	20	33	5	3	7
1991	46	25	26	40	42	44	26	51	41	19	9	33
1992	42	41	31	42	48	49	49	54	53	27	25	10
1993	34	56	27	59	41	40	57	60	65	61	61	19
1994	20	33	-3	36	24	40	30	37	31	31	55	-12
1995	15	34	-13	32	17	48	21	16	15	14	46	-10
1996	11	35	0	50	10	47	16	49	23	9	49	-4
1997	-3	39	-11	50	-13	49	7	34	27	-9	16	-14
1998	11	16	-8	31	-18	55	2	14	24	-15	23	-15
1999	15	10	8	23	-23	51	-1	9	25	-9	15	-13
2000	12	-11	-5	10	-20	35	-1	-7	16	-20	11	-11
2001	19	16	3	25	16	42	10	19	4	12	18	8
2002	20	27	8	34	34	37	20	33	11	31	43	14
2003	22	44	25	49	42	50	14	49	17	56	60	23
2004	20	34	10	47	15	38	12	32	19	35	50	20
2005	22	37	-1	40	11	44	11	28	25	18	50	13
2006	31	23	-12	22	12	41	10	13	18	-10	45	7
2007	**28**	**10**	**-8**	**-1**	**33**	**35**	**12**	**5**	**19**	**-16**	**43**	**-2**
2008	**45**	**22**	**20**	**17**	**54**	**50**	**46**	**27**	**27**	**11**	**51**	**18**
2009	55	65	31	70	63	63	42	61	43	61	64	43
2010	42	37	5	25	38	84	27	37	42	23	56	11
2011	48	16	5	5	32	88	20	35	42	18	65	16
2012	38	43	10	21	25	82	44	47	54	53	72	31
2013	21	47	1	23	11	75	31	45	44	54	57	32
2014	4	32	-9	16	-8	48	4	40	29	19	17	32
2015	8	19	-11	17	-16	46	-9	33	8	4	10	29
2016	16	18	1	27	-12	62	-3	21	12	5	5	16
2017	16	2	-9	14	-12	51	-7	9	13	-23	-13	-6
2018	**19**	**-1**	**-9**	**8**	**-12**	**30**	**-1**	**9**	**8**	**-26**	**-11**	**-8**
2019	**24**	**10**	**1**	**16**	**7**	**7**	**13**	**9**	**14**	**-7**	**-1**	**6**
2020	43	51	15	44	26	52	48	45	41	52	53	29
2021		35	-4	32	1	49	25	37	37	24	42	11
Mean	23	27	6	29	18	45	18	31	29	14	31	10

Data Appendix Table 4. Consumer Fear, 1992-2021

	Austria	Estonia	Czechia	Latvia	Hungary	Slovenia	Slovakia	Sweden
1992		72						
1993		72		49	43			
1994		43		40	19			
1995	38	25	25	32	42			5
1996	46	26	24	34	35	32		24
1997	39	35	49	32	24	30		10
1998	32	30	55	30	10	29		-3
1999	19	52	62	30	23	24	54	-2
2000	2	47	43	22	25	13	36	-19
2001	15	37	14	14	22	12	32	19
2002	21	21	27	17	14	28	32	13
2003	31	19	40	17	37	31	22	24
2004	30	11	30	16	31	29	6	22
2005	31	3	15	7	35	35	0	19
2006	17	-17	6	-5	42	20	-4	-1
2007	**-3**	**-7**	**3**	**-4**	**53**	**11**	**-12**	**-18**
2008	**17**	**34**	**14**	**32**	**53**	**19**	**1**	**29**
2009	52	47	45	66	71	54	53	39
2010	14	5	26	27	29	43	22	-10
2011	10	0	29	13	37	39	29	2
2012	27	9	40	11	42	44	36	25
2013	27	1	36	8	27	43	33	17
2014	34	5	17	8	14	28	13	1
2015	42	13	8	8	17	13	8	17
2016	43	17	4	14	11	9	-2	16
2017	12	6	0	10	4	-5	-5	3
2018	**-2**	**2**	**0**	**6**	**1**	**-5**	**-8**	**2**
2019	**8**	**6**	**10**	**6**	**-2**	**7**	**2**	**19**
2020	27	34	42	29	32	45	47	36
2021	6	25	33	22	22	32	43	3
Mean	24	21	24	20	28	25	18	11

Data Appendix Table 5. Consumer Fear, 2001-2021

	Albania	Bulgaria	Croatia	Cyprus	Lithuania	Luxembourg	Malta	Poland	Romania	Montenegro	Macedonia	Turkey
2001	15		33	37			55					
2002	26		32	24	25	15	52	32				
2003	20		33	7	40	12	42	44				
2004	15		41	-5	36	24	22	43				
2005	15	26	46	-15	34	24	16	31				
2006	17	19	46	-26	34	19	1	37				
2007	**9**	**10**	**41**	**-27**	**21**	**5**	**-14**	**31**			**19**	
2008	**15**	**17**	**37**	**12**	**29**	**5**	**-6**	**16**			**38**	
2009	57	55	56	73	62	31	38	21		36	32	
2010	48	56	52	45	33	29	22	70		22	23	
2011	42	40	55	17	29	27	26	71		22	11	
2012	48	50	64	17	45	24	36	53	29	15	12	
2013	40	41	65	11	43	1	34	44	26	4	14	
2014	35	40	33	13	34	-2	21	46	10	3	23	
2015	28	18	14	7	23	-10	13	37	9	1	32	
2016	-1	22	13	-6	5	8	-13	4	23	8	-1	29
2017	-4	19	9	-11	6	-1	-18	-3	23	13	-1	29
2018	0	14	-1	-12	5	-3	-30	-6	18	14	1	29
2019	4	15	-1	-7	3	10	-24	-2	19	10	-5	42
2020	19	38	32	47	29	49	14	39	16	25	16	41
2021	13	28	25	37	22	35	-8	32		17	21	32
Mean	5	27	27	33	12	29	6	19	35	16	6	27

Data Appendix Table 6. Quarterly GDP Growth, Q12017-Q12021, Source https://data.oecd.org/gdp/quarterly-gdp.htm US =1.6 in Q22021

	Q12017	Q22017	Q32017	Q42017	Q12018	Q22018	Q32018	Q42018	Q12019	Q22019	Q32019	Q42019	Q12020	Q22020	Q32020	Q42020	Q12021
EU	0.7	0.9	0.7	0.9	0.2	0.6	0.2	0.6	0.6	0.3	0.3	0.1	-3.2	-11.1	11.6	-0.4	-0.1
France	0.8	0.8	0.7	0.8	0	0.4	0.4	0.6	0.6	0.6	0.2	**-0.3**	-5.9	-13.2	18.5	-1.5	-0.1
Germany	1.2	0.7	0.9	0.8	**-0.2**	0.5	**-0.3**	0.3	0.6	**-0.5**	0.3	0	-2.0	-9.7	8.7	0.5	-1.8
Ireland	**-5.5**	4.3	2.1	6.1	0	4.1	**-2.0**	1.8	1.3	3.8	**-1.2**	1.0	3.1	-1.4	8.3	-5.2	8.6
Italy	0.6	0.4	0.4	0.6	0	0.1	0	0.2	0	0.2	0.1	**-0.4**	-5.7	-12.9	15.9	-1.8	0.1
Japan	0.8	0.2	0.8	0.4	0	0	**-0.7**	0.5	0.4	0.1	0.1	**-1.9**	-0.5	-8.1	5.3	2.8	-1.0
Netherlands	0.5	0.9	0.7	0.8	0.4	0.6	0.3	0.5	0.6	0.4	0.4	0.5	-1.6	-8.4	7.5	0	-0.8
Spain	0.8	1.1	0.6	0.6	0.5	0.5	0.6	0.6	0.5	0.4	0.4	0.4	-5.4	-17.8	17.1	0	-0.4
Sweden	0.4	1.2	1.1	0.2	0.2	1.0	**-0.5**	1.3	0.4	0.4	0.5	0.1	-0.9	-7.8	7.4	0	0.8
Switzerland	0.2	0.3	0.7	1.1	1.1	1.0	**-0.2**	0.2	0.1	0.4	0.5	0.4	-1.7	-6.8	7.2	0.1	-0.5
UK	0.5	0.3	0.4	0.4	0.1	0.4	0.6	0.2	0.6	0.1	0.5	0	-2.8	-19.5	16.9	1.3	-1.6
USA	0.5	0.6	0.7	0.9	0.8	0.8	0.5	0.2	0.6	0.8	0.7	0.5	-1.3	-8.9	7.5	1.1	1.5