European Commission

ISSN 2443-8049 (online)

European Business Cycle Indicators

2nd Quarter 2016

TECHNICAL PAPER 009 | JULY 2016

EUROPEAN ECONOMY

Economic and Financial Affairs

European Economy Technical Papers are reports and data compiled by the staff of the European Commission's Directorate-General for Economic and Financial Affairs.

Authorised for publication by José Eduardo Leandro, Director for Policy, Strategy, Coordination and Communication.

This document exists in English only and can be downloaded from http://ec.europa.eu/economy_finance/publications/eetp/index_en.htm or http://ec.europa.eu/economy_finance/publications/. It appears quarterly.

Luxembourg: Publications Office of the European Union, 2016

KC-BF-16-009-EN-N (online)
ISBN 978-92-79-54529-0 (online)
doi:10.2765/412684 (online)

KC-BF-16-009-EN-C (print)
ISBN 978-92-79-54528-3 (print)
doi:10.2765/848096 (print)

European Commission
Directorate-General for Economic and Financial Affairs

European Business Cycle Indicators

2nd Quarter 2016

Special topics

- What survey data tell us about inequality

This document is written by the staff of the Directorate-General for Economic and Financial Affairs, Directorate A for Policy, Strategy, Coordination and Communication, Unit A3 – Economic situation, forecasts, business and consumer surveys
http://ec.europa.eu/economy_finance/publications/cycle_indicators/index_en.htm.

Contact: Christian.Gayer@ec.europa.eu.

CONTENTS

OVERVIEW

Recent developments in survey indicators

Note: All survey results reported in this publication were collected before the announcement of the results of the UK referendum on EU membership on 24 June.

- Both the euro-area and the EU Economic Sentiment Indicator (ESI) increased modestly over the second quarter of 2016. In June 2016, the ESI maintained a position above the long-term average of 100 in both the euro area (at 104.4) and the EU (at 105.7).
- At the euro-area sector level, confidence improved among consumers and in all business sectors except for retail trade. EU developments were similar, apart from confidence in services which remained broadly unchanged over the second quarter of 2016.
- Compared to March's readings, the ESI improved in four of the seven largest EU economies (Germany, Italy, the Netherlands and the UK). The indicator decreased in France and remained broadly unchanged in Spain and Poland.
- Capacity utilisation in the manufacturing sector decreased in the second quarter but continues to score slightly above its long-term average in both the euro area and the EU. In the services sector, capacity utilisation increased slightly in both areas, resuming the upward tendency that had started in early 2013.

Special topic: What survey data tell us about inequality

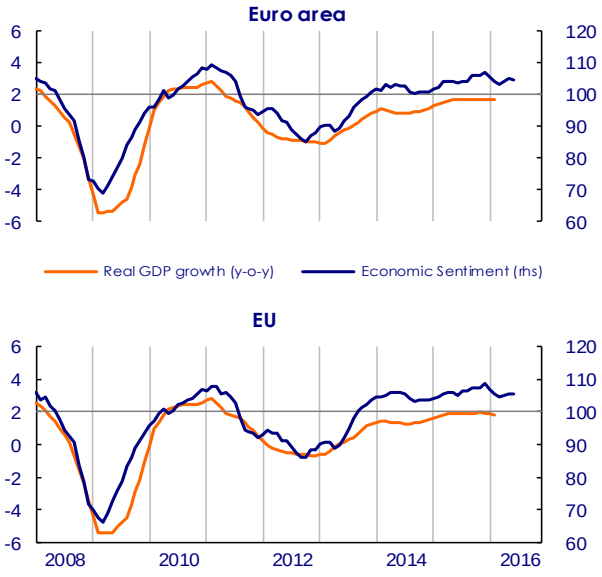
Departing from the observation of an extreme scarcity of data on income and wealth inequality in Europe, this special topic presents a fundamentally new approach to the measurement of inequality. Using consumer survey data from the EU Joint Harmonised Business and Consumer Survey Programme, a new inequality measure is constructed as the difference between households' average assessment of their financial situation in the highest and the lowest income quartile.
Results for a selection of countries show that the sovereign debt crisis has had sweeping effects on inequality in the most vulnerable member states. While Ireland and Spain saw inequality increasing at unprecedented pace, the inequality indicator in Italy and Portugal eased significantly. It is argued that these patterns are, amongst others, driven by particularly sharp rises in unemployment rates in Spain and Ireland (driving up inequality), as well as strong drops in Italian and Portuguese equity valuations (hitting the wealthier and thus lowering the inequality indicator). As regards other countries, an interesting observation relates to the Netherlands and Sweden, where inequality seems to be growing at comparatively fast speed.

1. RECENT DEVELOPMENTS IN SURVEY INDICATORS

1.1. EU and euro area

After the downward trend observed in the first quarter of 2016, the euro-area and EU Economic Sentiment Indicators (ESI) increased somewhat over the second quarter of 2016. The indicators picked up in April and May and stabilised in June. At the end of the second quarter of 2016, the ESI maintained a position above the long-term average of 100 in both the euro area (at 104.4) and the EU (at 105.7).

Graph 1.1.1: Economic Sentiment Indicator

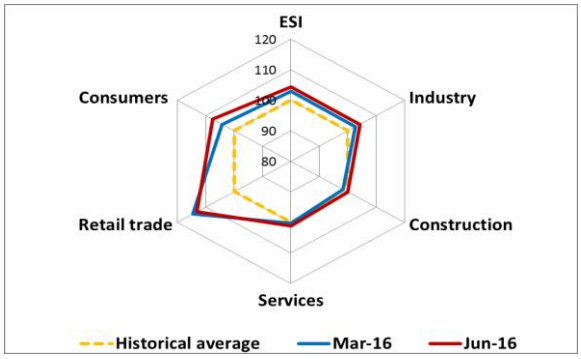


Note: The horizontal line (rhs) marks the long-term average of the survey indicators. Confidence indicators are expressed in balances of opinion and hard data in y-o-y changes. If necessary, monthly frequency is obtained by linear interpolation of quarterly data.

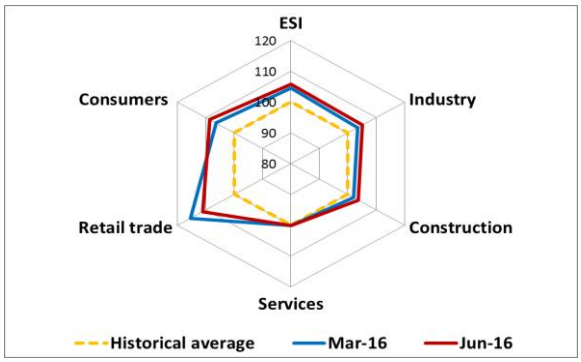
Compared to the readings at the end of the first quarter of 2016, the ESI registered modest gains in the euro area (+1.4 points) and the EU (+1.1 points). The positive signals were echoed by the Ifo Business Climate Index (for Germany), which also picked up over the second quarter of 2016, while Markit Economics' Composite PMI for the euro area remained unchanged, at a level well above the threshold of 50 signalling growth.

At euro-area sector level, the improvement in the sentiment indicator over the first quarter was due to confidence increases among consumers and managers in all business sectors apart from retail trade, where confidence worsened compared to the end of the first quarter of 2016. In the EU, sectoral developments paralleled those in the euro area except for confidence in services, which remained broadly unchanged compared to the end of 2016Q1. In terms of levels, sectoral euro-area and EU indicators currently score at or slightly above their corresponding historical means in services, construction and industry and well above average in retail trade and among consumers (see Graph 1.1.2).

Graph 1.1.2: Radar Charts
Euro area



EU



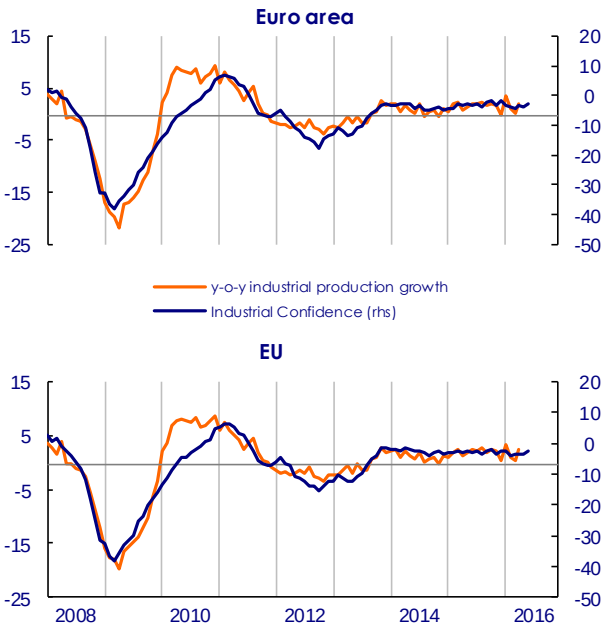
Note: A development away from the centre reflects an improvement of a given indicator. The ESI is computed with the following sector weights: industry 40%, services 30%, consumers 20%, construction 5% and retail trade 5%. The series are normalised to a mean of 100 and a standard deviation of 10. The historical averages are generally calculated from 1990q1. For more information on the radar charts see the Special Topic in the 2016Q1 EBCI (http://ec.europa.eu/economy_finance/publications/eetp/tp007_en.htm).

At country level, compared to March, sentiment improved in four of the seven largest EU economies, namely in the Netherlands (+3.9), Germany (+2.4), Italy (+1.1) and the UK (+1.0). By contrast sentiment worsened in France (-1.1) and remained broadly stable in Spain (-0.4) and Poland (-0.1).

Sector developments

Over the second quarter of 2016, industrial confidence in both the euro area and the EU has improved. A comparison of June's readings to those of March shows modest increases of +1.4 points in the euro area and +1.6 points in the EU. In a longer term perspective, however, Graph 1.1.3 shows that confidence in the industry sector has essentially been moving sideways for more than two and a half years now.

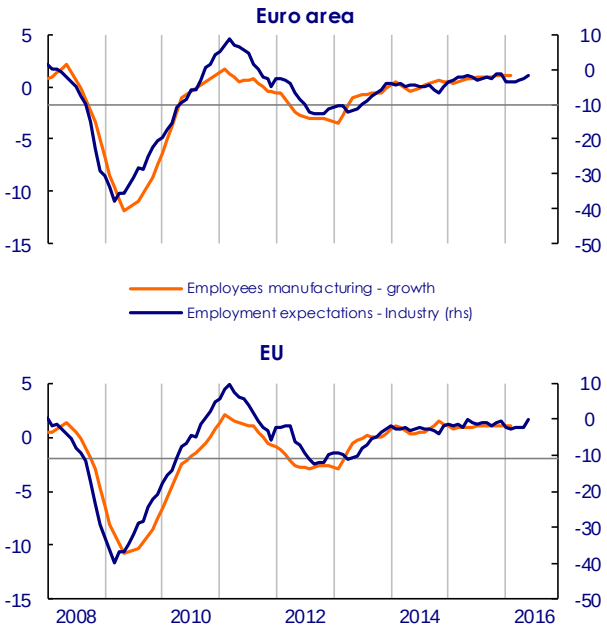
Graph1.1.3: Industry Confidence indicator



In both European aggregates, managers' production expectations and their assessments of order books improved over the quarter, while their appraisal of the stocks of finished products remained broadly stable. Also managers' views on export order books were broadly unchanged in both areas, while their appraisals of past production trends improved in the euro area and remained broadly stable in the EU.

In June, selling price expectations were at a higher level than in March in both areas, following three monthly increases in a row. Managers' employment expectations picked up over the first quarter in both the euro area and the EU.

Graph1.1.4: Employment - Industry Confidence indicator

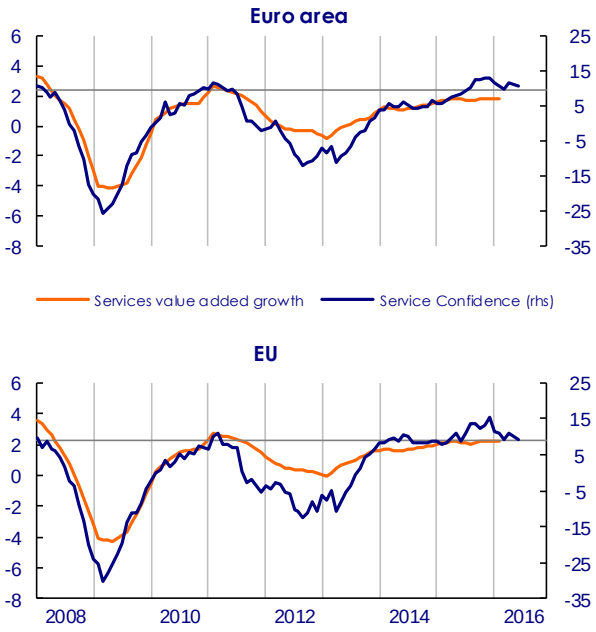


In the seven largest EU countries, compared to the end of the first quarter of 2016, industry confidence increased strongly in the UK (by 5.7 points), Germany (+3.1) and the Netherlands (+2.8). By contrast, it worsened in France and Poland (by 1.9 and 1.0 points, respectively). Confidence changed rather little in Italy (+0.8) and Spain (-0.5).

The latest readings from the quarterly manufacturing survey showed that, compared to the first quarter of 2016, **capacity utilisation in manufacturing** decreased by 0.5 percentage points in the euro area and by 0.4 percentage points in the EU. In April, the level of capacity utilisation was 81.5% in the euro area and 81.1% in the EU, thus still slightly above the long-term averages in both areas (euro area 81.1%; EU 80.8%).

Over the second quarter of 2016, confidence in **services** improved modestly in the euro area, and remained broadly stable in the EU. In both regions the indicator scores just above its respective long-term mean. In terms of intra-quarter developments, confidence registered a marked increase in April but worsened again over May and June.

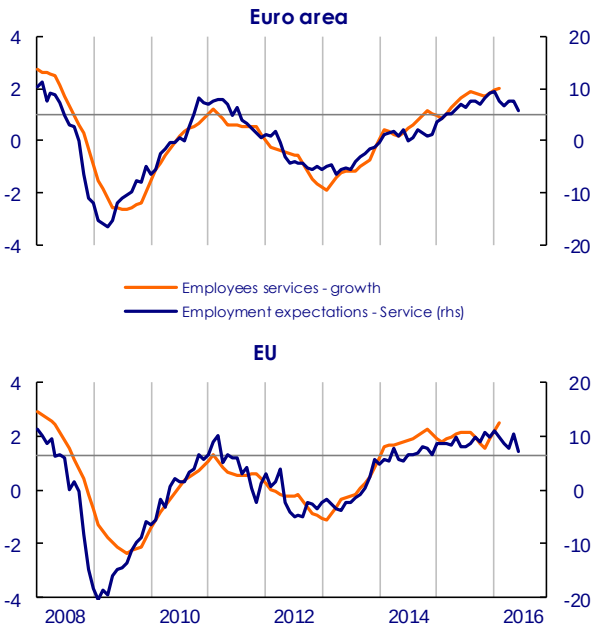
Graph1.1.5: Services Confidence indicator



As for the individual components of services confidence, managers' views on past demand and the past business situation improved, while their demand expectations worsened.

In both areas, services managers' employment expectations worsened slightly over the second quarter, bringing them close to their respective long-term averages.

Graph1.1.6: Employment - Services Confidence indicator

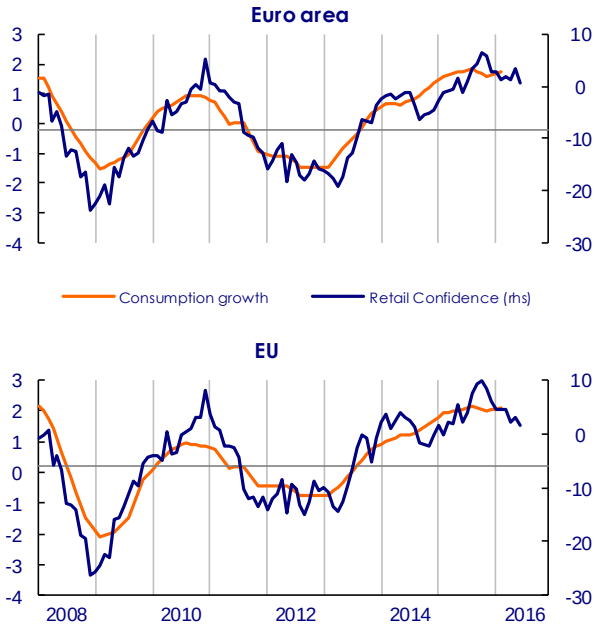


Looking at the largest EU countries, compared to March 2016, confidence rallied in Italy (+6.1), while it remained broadly stable in Germany (+0.4) and Poland (+0.1). The Netherlands (-0.9), France (-1.1), Spain (-2.3) and the UK (-2.9) saw the indicator decreasing over the second quarter 2016.

The latest results of the quarterly survey on **capacity utilisation in services** showed a slight increase, resuming the upward tendency that had started in early 2013. In April compared to January, the indicator increased by 0.3 percentage points to 88.9 in the euro area and by 0.2 percentage points to 89.0 in the EU.

Retail trade confidence decreased in both the euro area and the EU in the second quarter of 2016. In both areas the indicator decreased in April, picked up in May and dropped again in June. As a result, the June level is 1.0 point lower in the euro area and 2.9 points lower in the EU compared to March. However, and despite having peaked already in autumn last year, retail trade confidence remains distinctly above its long-term average in both areas.

Graph1.1.7: Retail Trade Confidence indicator



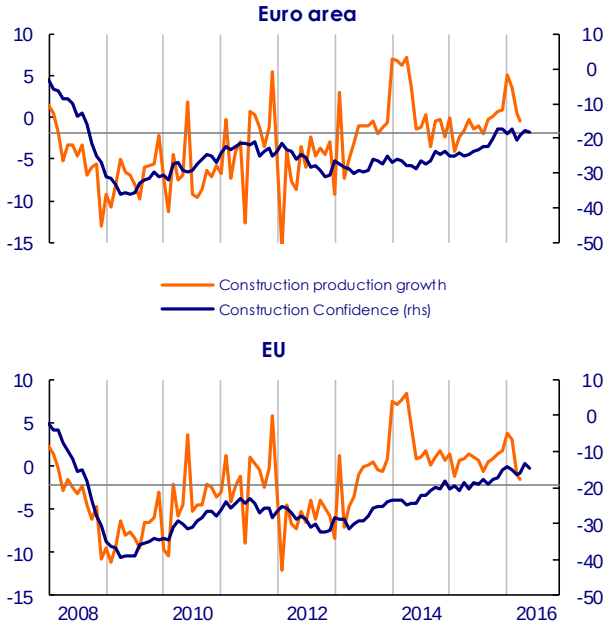
The downward correction of confidence in both areas resulted mainly from negative developments in managers' appraisals of the past business activity, particularly in the EU. Also EU managers' expected business activity worsened, while their views on the adequacy of the volume of stocks improved. In the euro area both managers' expected business activity and

their assessment of the adequacy of their stocks remained broadly unchanged.

From a country perspective, confidence worsened markedly in Italy (-9.0) and the UK (-13.4) and, much less so, in Spain (-1.5) and the Netherlands (-1.0). By contrast, confidence changed barely in Germany (+0.6), France (+0.7) and Poland (-0.6).

Compared to March 2016, confidence in **construction** improved in both the euro area (+2.2) and the EU (+2.0). In a longer term perspective, however, the slow upward trend discernible since 2013 has flattened in the euro area since the beginning of the year, while it seems to be intact in the EU. From a month-on-month perspective, both areas saw the indicator increasing in April and May and declining in June.

Graph1.1.8: Construction Confidence indicator

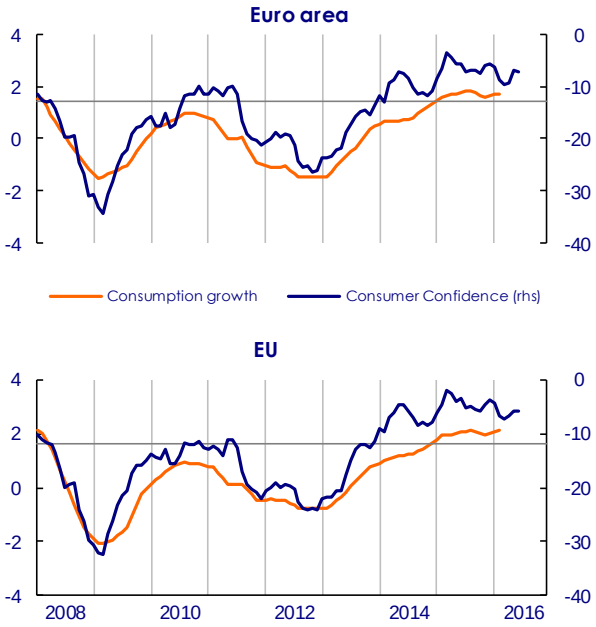


At the end of the second quarter of 2016, compared with March, both components of the indicator - managers' views on current order books and their employment expectations – were higher in the euro area. EU managers' views on current order books improved markedly while their employment expectations remained broadly stable.

Focusing on individual countries, the indicator picked up markedly in France (+4.0), the Netherlands (+6.3) and the UK (+5.3) and, to a somewhat lesser extent, in Germany (+2.9). By contrast, it deteriorated in Spain (-1.2). In Italy (+0.7) and Poland (+0.5) the indicator remained broadly stable. Construction confidence now stands above its long-term average in all the seven largest EU Member States except for France and Spain.

In both the euro area and the EU, confidence among **consumers** improved somewhat in the second quarter of 2016, thanks to improvements in April and May. In June the indicator remained broadly unchanged.

Graph1.1.9: Consumer Confidence indicator



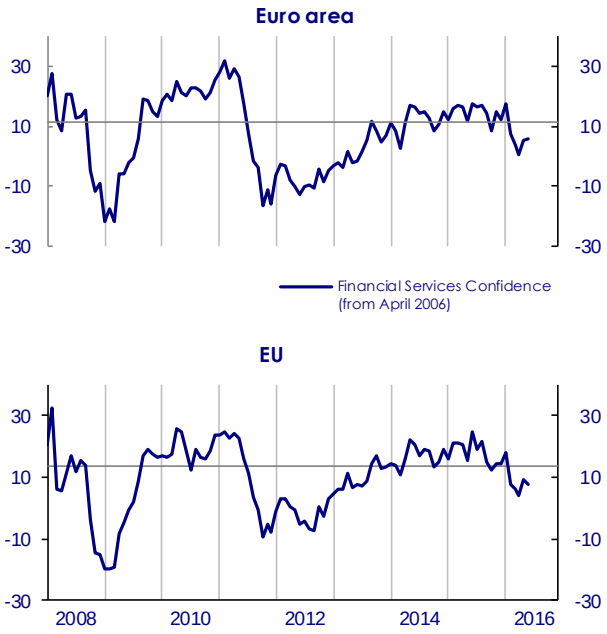
In both areas, the increase in the second quarter was backed mainly by an improvement in consumers' unemployment expectations. Consumers' expectations about their personal financial situation and their savings remained broadly unchanged in both areas, while consumers' expectations on the general economic situation increased somewhat in the euro area and remained nearly unchanged in the EU.

Confidence improved strongly in Germany (+4.6), France (+4.5) and the Netherlands (+10.1) and to a lesser degree in Spain (2.7) and Poland (+1.5). By contrast, confidence worsened in the UK (-2.2) and, more markedly, in Italy (-5.7).

While EU and euro-area confidence in **financial services** (not included in the ESI) improved over the second quarter of 2016, it

could only partly offset the important drop registered in the first quarter of 2016.

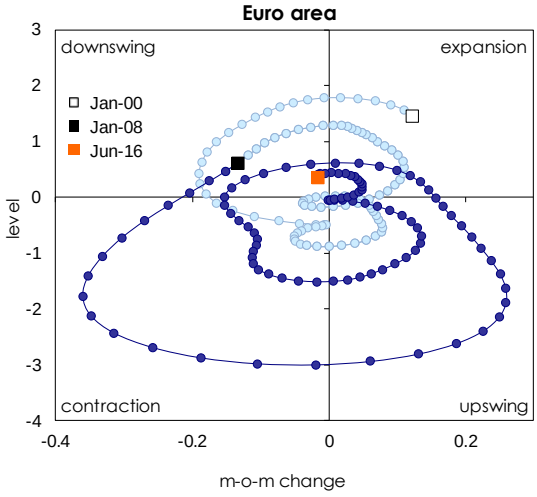
Graph1.1.10: Financial Services Confidence indicator



In both the euro area and the EU, confidence increased thanks to managers' more optimistic views on past demand and the past business situation, while their demand expectations worsened.

The developments in survey data over the first quarter are illustrated by the evolution of the **climate tracers** (see Annex for details)**.** During the second quarter of 2016 the economic climate tracer for the euro area remained in the downswing quadrant that it had entered at the beginning of the year.

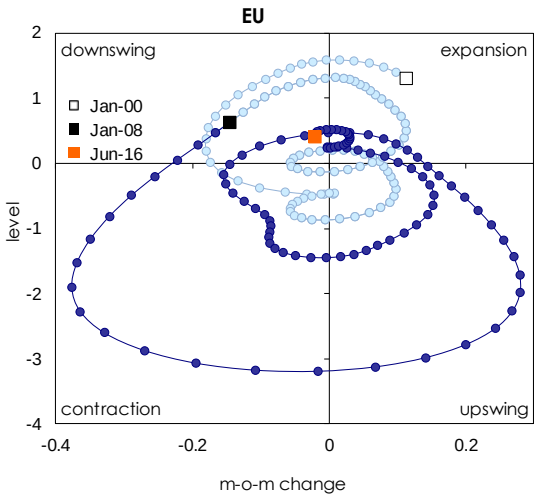
Graph 1.1.11: Euro area Climate Tracer



This situation is backed by the climate tracers for consumers and the industry, services and retail trade sectors. The climate tracer for construction has moved from the upswing area into the direction of the contraction quadrant and now stands just at the neutral intersection of the two axes.

Also for the EU, the overall economic climate tracer is located in the downswing quadrant.

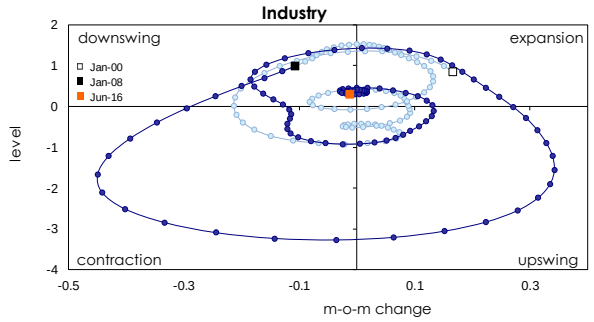
Graph 1.1.12: EU Climate Tracer

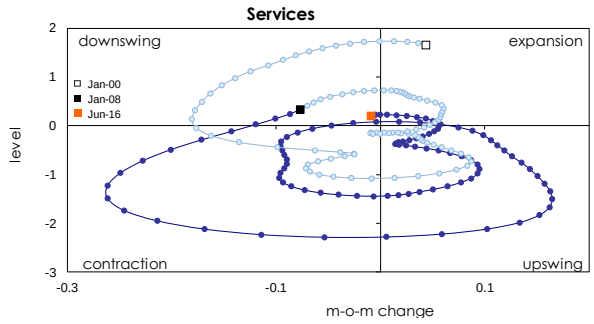


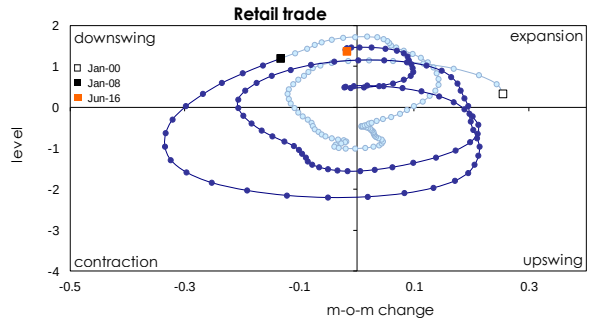
In contrast to the euro area, the EU climate tracers for services and retail trade are somewhat more decisively in the downswing area and the climate tracer for the construction sector moved from the upswing to the expansion quadrant.

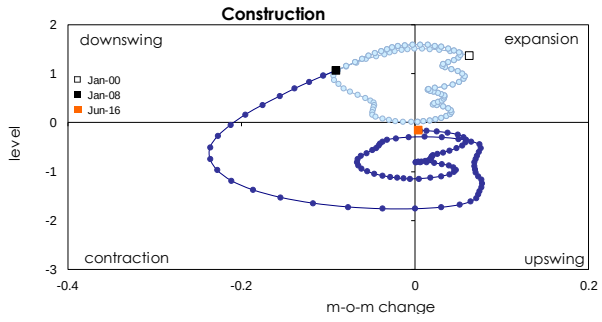
Graph 1.1.13: Economic climate tracers across sectors

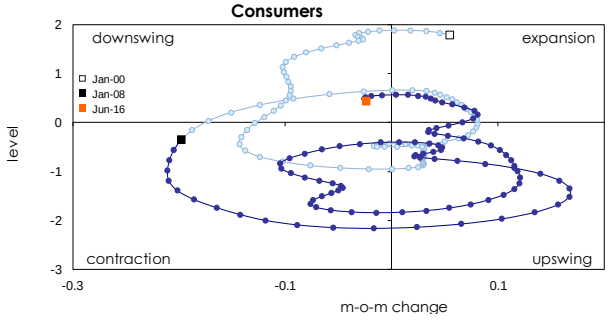
Euro area



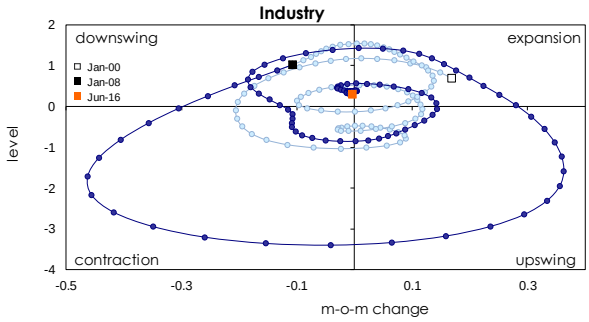


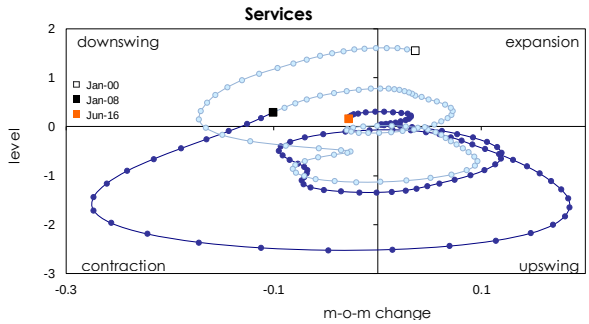


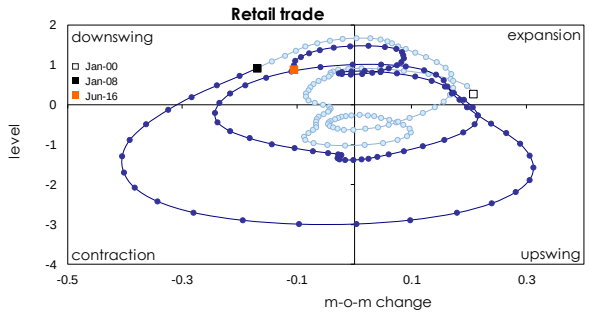


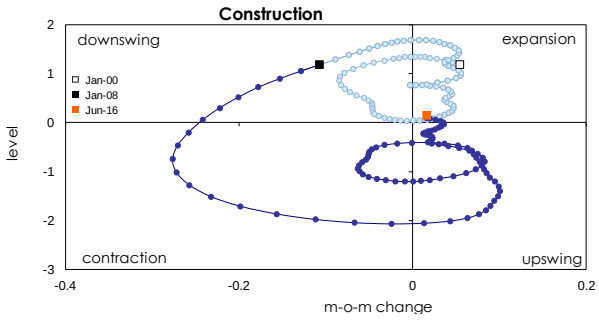


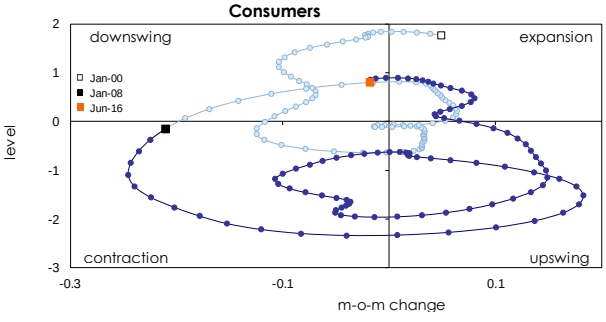
EU







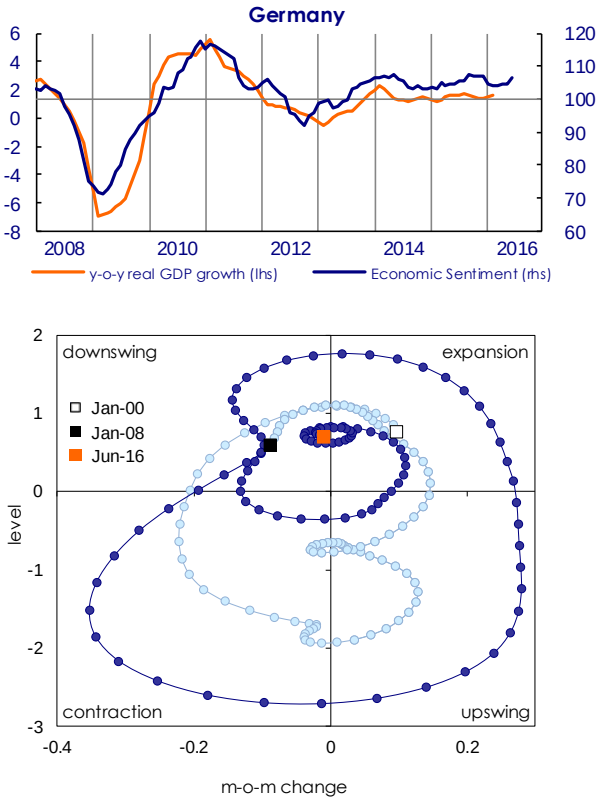




1.2. Selected Member States

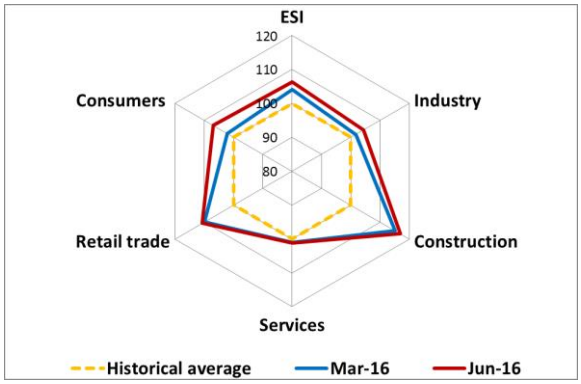
Over the second quarter of 2016 sentiment has improved strongly in the Netherlands and - to a lesser extent - in Germany, Italy and the UK, while it remained broadly stable in Spain and Poland and decreased in France. Economic sentiment scored above its long-term average in all the largest EU Member States, except for Poland.

Graph 1.2.1: Economic Sentiment Indicator and Climate Tracer for Germany



In **Germany,** the ESI increased over the second quarter of 2016, almost offsetting the drop registered in the first quarter of 2016. Thanks to a sizeable increase in June that followed two slight increases in April and May, the German ESI is again well above its long-term average of 100, at 106.4 points. In terms of the climate tracer, Germany remained in the downswing quadrant, but is pointing to the border with the expansion area. Compared with the end of the first quarter, confidence improved markedly in industry and among consumers and, to a lesser extent, in the construction sector, while it remained broadly stable in services and retail trade (Graph 1.2.2).[1] All German confidence indicators except for services are currently above their respective long-term average, most clearly so for retail trade and construction.

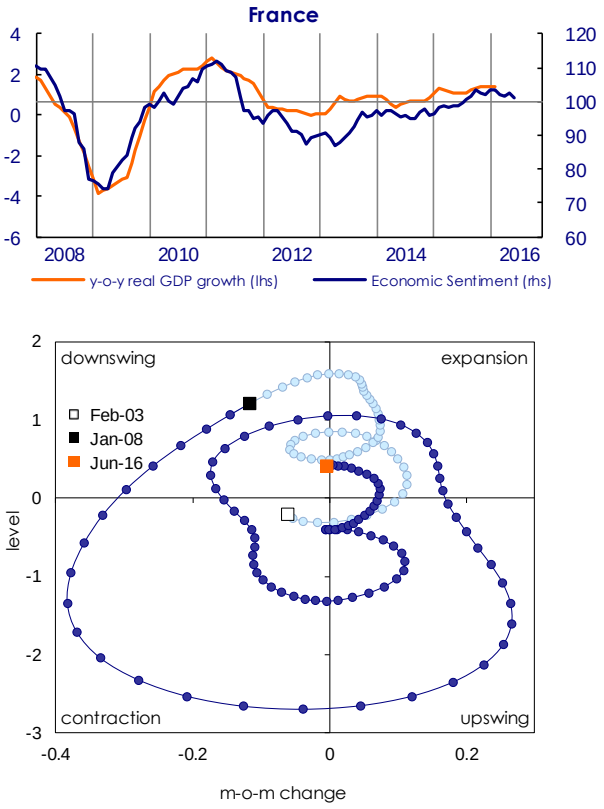
Graph 1.2.2: Radar Chart for Germany



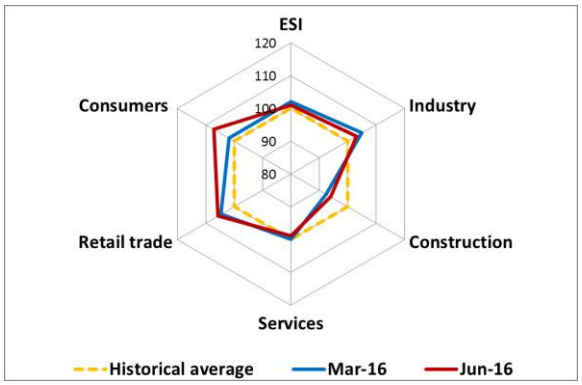
Economic sentiment in **France** worsened over the first quarter; the indicator decreased in April, recovered markedly in May but fell back strongly again in June. At 101.0 points, the sentiment index remains only slightly above its long-term average of 100. The climate tracer is entering into the downswing quadrant from the expansion area (see Graph 1.2.3). Compared with the end of the first quarter, confidence worsened in industry and services, while it improved in retail trade, construction and among consumers (see Graph 1.2.4). The radar chart illustrates that confidence in industry, retail trade and among consumers is above its respective historical average, while construction confidence scores clearly below its long-term average, thereby acting as a drag on the French ESI.

[1] For background information on the radar charts see the Special Topic in the 2016Q1 EBCI (http://ec.europa.eu/economy_finance/publications/eetp/tp007_en.htm).

Graph 1.2.3: Economic Sentiment Indicator and Climate Tracer for France

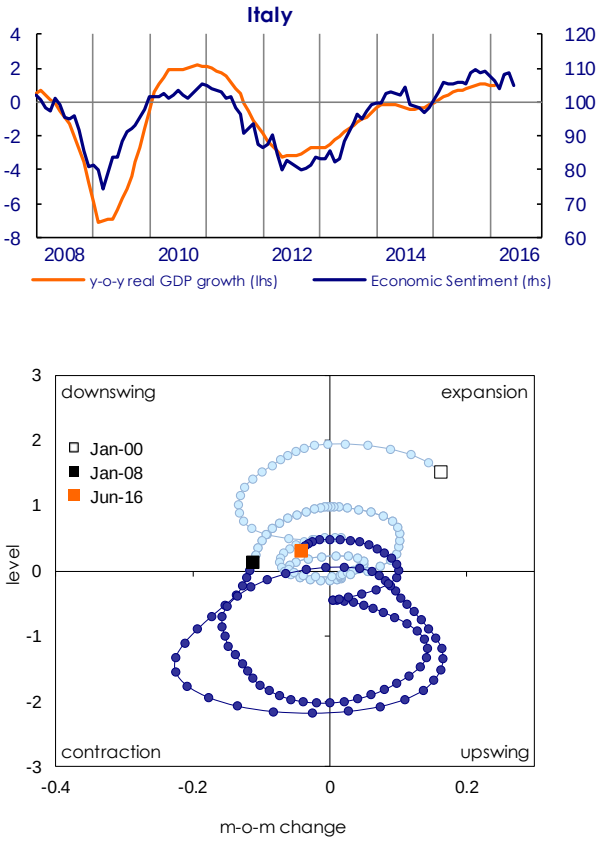


Graph 1.2.4: Radar Chart for France

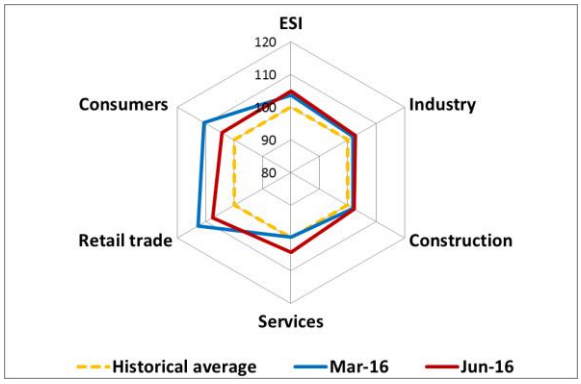


At the end of the second quarter of 2016, sentiment in **Italy** was at a slightly higher level than in March 2016. The increase resulted from a marked increase in April which was largely erased in June. Nevertheless, the sentiment index remains well above its long-term average of 100, at 104.8 points. The climate tracer moved deeper in the downswing area and is pointing to the contraction quadrant. At sector level, confidence improved markedly only in the services sector, while it remained broadly stable in industry and construction and worsened strongly in retail trade and among consumers. The radar chart shows that despite this recent deterioration, consumer and retail trade confidence remains well above its long-term average. Following the recent pick-up, also services confidence now scores markedly above its long-term average (see Graph 1.2.6).

Graph 1.2.5: Economic Sentiment Indicator and Climate Tracer for Italy



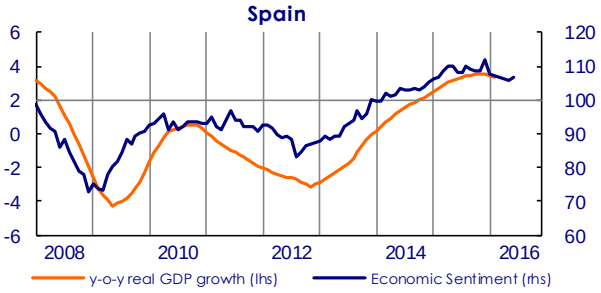
Graph 1.2.6: Radar Chart for Italy

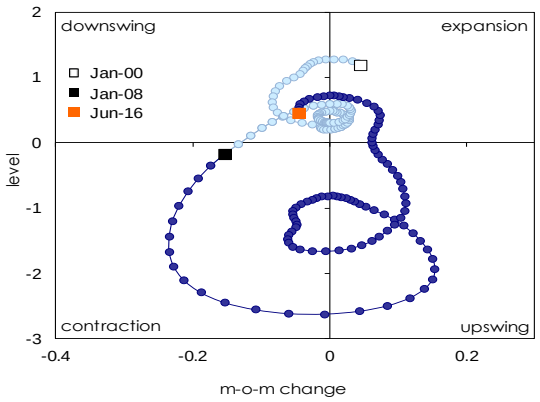


The ESI in **Spain** remained broadly stable compared to March 2016, resulting from a rise in June that partly compensated for two modest decreases registered in April and May. At 106.5 points, the sentiment indicator is still well above its long-term average of 100. The climate tracer for Spain moved further into the

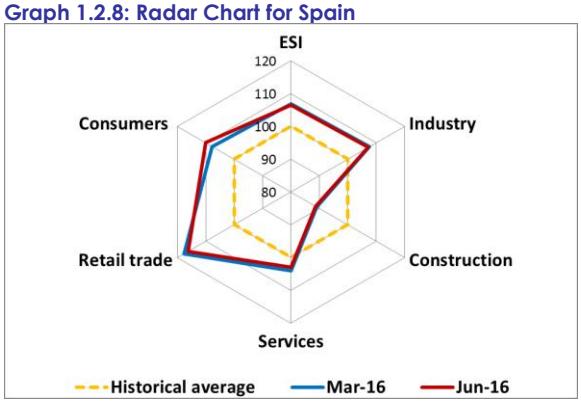
downswing area. Confidence improved among consumers, remained broadly stable in industry and decreased in all remaining business sectors. The radar chart illustrates that the construction indicator is scoring markedly below its long-term average, while all other indicators, especially the one for retail trade, are markedly above average (see Graph 1.2.8).

Graph 1.2.7: Economic Sentiment Indicator and Climate Tracer for Spain



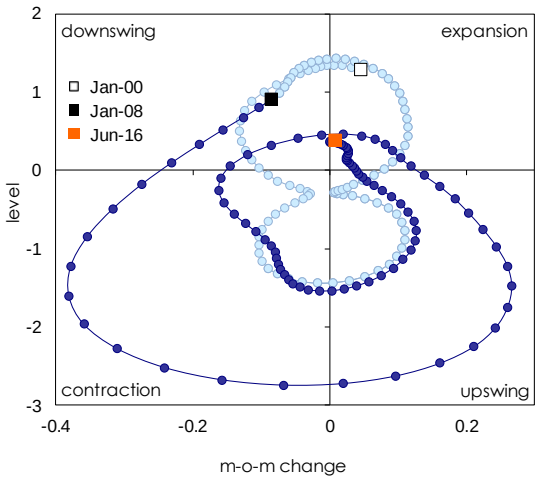


Graph 1.2.8: Radar Chart for Spain

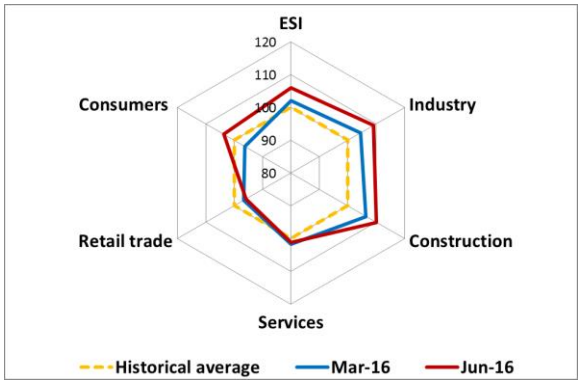


In the **Netherlands**, sentiment improved over the second quarter. The ESI improved markedly in April and June, while it remained stable in May. At 105.9, the indicator currently scores well above its long-term average. The climate tracer remains in the expansion quadrant, but is close to the downswing area. At sector level, compared with March, sentiment improved sharply among consumers and in the construction sector and – less strongly - in industry. By contrast, confidence declined slightly in services and retail trade. The radar chart (see Graph 1.2.8) shows that it is the industry and construction sectors which are currently scoring well above their long-term averages, while the retail trade sector is the only one scoring below its long-term average in 2016Q2.

Graph 1.2.5: Economic Sentiment Indicator and Climate Tracer for the Netherlands

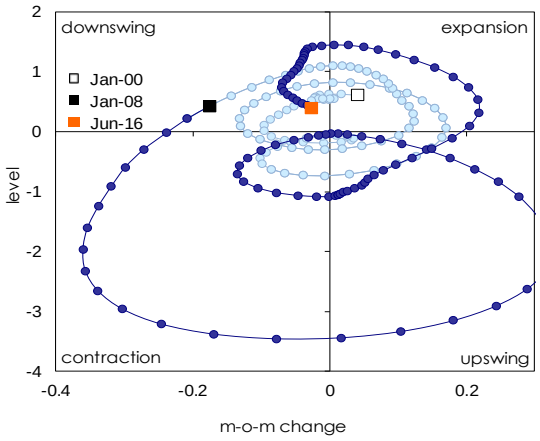


Graph 1.2.8: Radar Chart for the Netherlands



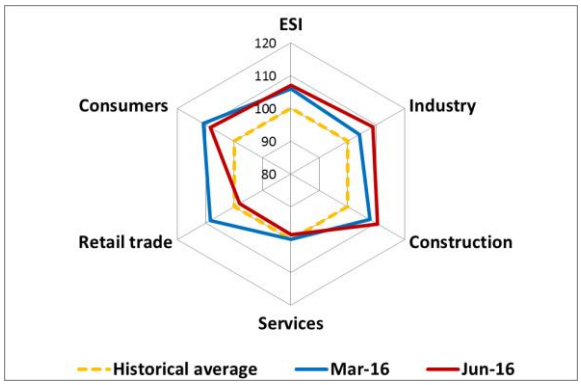
In the **United Kingdom**, sentiment increased slightly in the second quarter compared to March 2016, thanks to two consecutive increases in May and June that offset a marked decrease booked in April. The indicator scores well above its long-term average of 100, at 107.0. The climate tracer remained in the downswing quadrant. The slightly improving sentiment resulted from clear upward revisions in industry and construction confidence, which were mostly offset by a substantial decline in the retail trade sector and more modest drops in services and among consumers.

Graph 1.2.9: Economic Sentiment Indicator and Climate Tracer for the United Kingdom



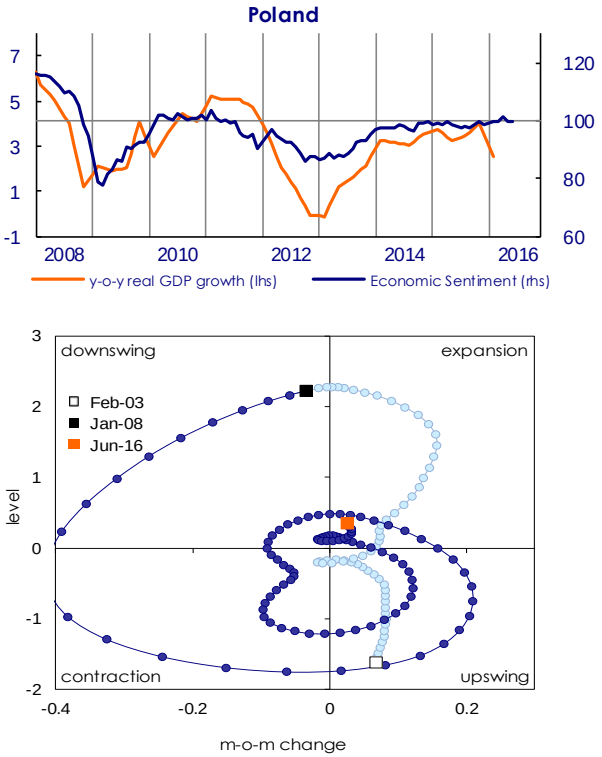
The marked decline in retail trade confidence led the indicator to a level slightly below its historical average. While services confidence remains close to its long-term average, consumer, industry and construction confidence continue to score above their respective averages (see Graph 1.2.10).

Graph 1.2.10: Radar Chart for the UK



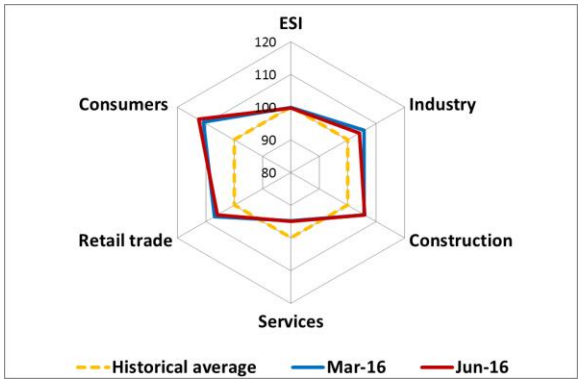
Sentiment in **Poland** improved in April, worsened in May and remained stable in June, resulting in a practically unchanged situation compared to March 2016. The ESI remains slightly below its long-term average, at 99.7. The climate tracer for Poland is located in the expansion area. At sector level, compared to March 2016, confidence declined slightly in industry, while it remained broadly unchanged in all the other business sectors and improved among consumers.

Graph 1.2.11: Economic Sentiment Indicator and Climate Tracer for Poland



As visible in the radar chart (see Graph 1.2.12), confidence among consumers and in retail trade is performing above average. While this is, to a lesser extent, also true for industry and construction, services confidence remained below its long-term average in 2016Q2.

Graph 1.2.12: Radar Chart for Poland



2. SPECIAL TOPIC: WHAT SURVEY DATA TELL US ABOUT INEQUALITY

Introduction

Economic inequality within societies has attracted a great deal of attention in recent years. Publications by the OECD with catchy titles like "Growing unequal? Income Distribution and Poverty in OECD Countries" (2008) or "Divided we stand – Why inequality keeps rising (2011)" are just a few manifestations of the phenomenon. In particular the 2008/09 financial and ensuing sovereign debt crises have arguably reinforced interest in the topic, with a number of publications shedding light on whether they have had any (intermediate or lasting) effects on inequality. While articles referring to US developments appear more numerous, there are also some dedicated to developments in Europe, e.g. Grabka (2015), who focusses on Germany, Lundberg and Waldenstroem (2014), reporting evidence from Sweden, and Jenkins et al. (2013), who analyse income inequality developments in twelve EU countries.[2]

Generally, there are two major types of economic inequalities, which are studied in the literature: the differences in persons'/households' income or in their wealth. Both concepts have in common that they are rather hard to measure, resulting in a scarcity of available data-sources.

Income inequality is mostly measured via dedicated surveys. The most prominent one in respect of Europe is the European Union Survey on Income and Living Conditions (EU-SILC), as well as its predecessor, European Community Household Panel (ECHP). Taken together, the surveys provide annual information on income levels for the EU-15 (from 1994-2001)[3] and the EU-28 plus Iceland, Norway, Switzerland and Turkey (from 2007).[4] There are also a number of national surveys, which tend to provide longer vintages, e.g. the German Socio-Economic Panel (SOEP) with data stretching back to 1984. However, when interested in cross-country comparisons the national data are of very limited use, since there are significant differences in the applied methodologies. To alleviate such problems, initiatives like the Luxembourg Income Study Database (LIS) have been set up to assemble data from a wide range of countries in a harmonised template. In spite of these efforts though, the use of data compiled from different data-sources remains a daunting exercise with various shortcomings, as shown by Atkinson and Brandolini (2001).

As regards the measurement of inequality in private wealth, data is even scarcer. A major step forward is arguably the eurosystem household finance and consumption survey (HFCS), a joint project of all central banks of the euro area, whose first wave was published in 2013.[5] Based on a sample of 62,000 respondents, the survey has collected household-level data on private wealth for 15 euro-area countries. While certainly promising, so far only a single survey wave has been conducted, limiting analyses of wealth inequality to a cross-sectional, rather than longitudinal perspective.

Besides their scarcity, short vintage length and lacking cross-country comparability, there are a number of other shortcomings which survey-based income and wealth data have in common. First of all, given the substantial costs involved, the studies are conducted rather infrequently (once a year or even multi-annually). They

[2] Some of the analyses conducted in the study also cover a number of additional OECD countries.

[3] Austria, Finland and Sweden were included in the survey only in 1995, 1996 and 1997 respectively. For more information, see Peracchi (2002).

[4] The geographic coverage of the EU-SILC programme has been gradually expanded between 2004 and 2007. The starting point was the EU-15, for which the survey collects data since 2004.

[5] See ECB (2013) for a discussion of the results of the first survey wave.

furthermore tend to be published with a significant time-lag (e.g. more than a year for the German SOEP). Additionally, the explicit inquiry of income and wealth levels is suspected to be associated with a certain degree of under-reporting by the richest and/or top-earning respondents. The ECB (2013) finds indications of such a phenomenon, when comparing its HFCS results with mean wealth levels per person, as derived from national accounts.

This short article provides a fundamentally new approach to the measurement of inequality, which, to the author's best knowledge, has never been applied so far. The idea is to extract information on inequality from the results of consumer surveys. Concretely, we resort to data from the EU Joint Harmonised Business and Consumer Survey Programme, which inquires every month some 40,000 consumers across Europe about their personal finances, consumption plans, etc. The wording of the twelve monthly survey questions, as well as (to a large extent) the survey methodology are harmonised, rendering the survey results comparable across all 28 EU Member States.

What makes the survey so interesting for inequality research is that its results are not only available at overall national level, but also for national demographic sub-groups, amongst others four different income groups (1st to 4th quartile).[6]

The survey question particularly useful for our purpose is number 1 of the harmonised questionnaire, which reads "How has the financial situation of your household changed over the last 12 months?" The answering categories range from "got a lot better" (1 point) and "got a little better" (1/2 point), over "stayed the same" (0 points), to "got a little worse" (-1/2 point), "got a lot worse" (-1 point) and "don't know". The responses are summarised across participants in a so-called balance, i.e. the share of positive replies (in points) *minus* the share of negative ones. When comparing the development of the balance statistics of the lowest and the highest income quartile, one can expect to gain valuable information on whether (i) inequality is increasing or decreasing (depending on which of the two balance series is larger) and (ii) the speed at which the two categories approach each other or drift apart (depending on the absolute magnitude of the difference between them). It is arguably this trajectory of inequality which is of most interest to researchers, rather than the absolute difference between mean income/wealth levels of the richest and poorest layers of society, as classically inquired by inequality surveys.

Besides their explicit focus on the change in inequality, the survey data have a number of other advantages:

(i) The balance statistics are regularly collected (every month, although we prefer to use the data at yearly level so as to exclude some of the inherent volatility);

(ii) The data is available without any major time-lag (balance series get available at the end of the reference month);

(iii) The results are generated by the same methodology (and thus comparable) across all EU Member States;

(iv) The vintages are without any gaps and stretch back to 1985[7];

(v) The concept inquired ("financial situation") does not only capture changes in income, but also in respondents' wealth, that being a major advantage, not only in the light of the notorious scarcity of data on private household wealth, but also due to its particular relevance for the assessment of societal inequality. After all, household wealth tends to be much more important than household income. Own calculations on the basis of income and wealth data from the ECB's HFCS indeed show that households' wealth is between 7 times (highest income quintile) to 15 times (lowest income quintile) larger than their annual income.[8] [9]

[6] Respondents are asked to indicate their annual income, allowing for their categorisation into one of the four groups.

[7] For some countries, especially the new Member States having joined in 2004/07, the vintages are shorter.

[8] This point is also highlighted by Murtin and d'Ercole (2015) who state that "wealth inequality is much larger than income inequality due to financial assets

(vi) Since respondents are asked to assess the *change* in their financial situation (rather than the level of their income/wealth), even the richest respondents are unlikely to give biased answers to hide their financial well-being.

Construction of the Inequality Indicator

In practice, the following procedure is applied to derive our inequality measure from question 1 ("How has the financial situation of your household changed over the last 12 months?"). Taking the monthly balance series for the first and the fourth quartile of the income distribution as a point of departure, we erase all observations referring to months 1 to 9 of a year. The reason is that, to avoid short-term volatility and distil meaningful, long-term tendencies in inequality, we aim for an annual inequality measure. However, only households' assessments at the end of a year t can be argued to (mainly) capture developments over that year, while earlier assessments partly consider developments pertaining to year t-1. Based on the reduced data-set, the monthly balance-series (consisting of the October-, November- and December-observation only) are transformed into yearly ones by averaging them. Each yearly value thus captures how high- (low-) income households assess the development of their financial situation over the past 12 months, when reflecting on it at the end of the year.[10] In a final step, for each year, the balance series of the lowest is subtracted from that of the highest income quartile. The resulting inequality gauge provides an indication of whether inequality tends to grow or decrease (positive vs. negative value), as well as possible accelerations or decelerations in the prevalent trend.[11]

Results

Given the space constraints of this article, the resulting inequality indicators are only presented for a selection of eight EU countries, four of which have been directly hit by the sovereign debt crisis (Ireland, Portugal, Spain, Italy), while the remainder arguably only indirectly (Germany, France, the Netherlands, Sweden).

The non-vulnerable countries

When focussing on the non-vulnerable countries (see Figure 1), a number of conclusions emerge:

(i) First of all, over the entire period observed (1986-2015), the inequality indicators are persistently above 0, suggesting that inequality grew incessantly, albeit at varying speeds.

(ii) The national indicators vary greatly in their characteristic levels. Since the onset of the 1990s, France and Germany remain broadly in the range of 10-20 points. This contrasts with Sweden, which, ever since 2003, displays a significantly higher level of the indicator, with a peak at close to 30 points in 2009. The difference is even more pronounced in the case of the Netherlands, whose inequality indicator is, with the exception of three years, always above 30 points and peaks in 2015 at around 45 points. It thus seems that inequality in the Netherlands and (since the beginning of the

that are very unequally distributed and mainly accrue to top income and top wealth households".

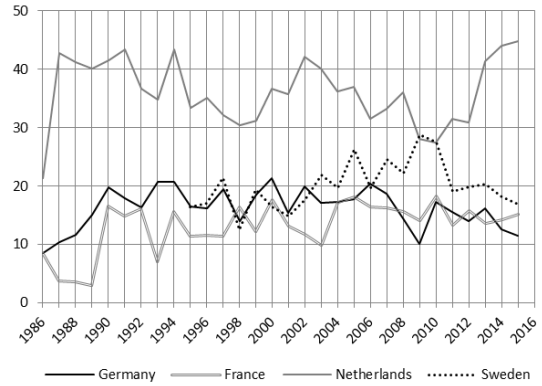
9 Analysing a measure which consists of two components with a high likelihood of moving in opposite directions would arguably be of little use. In that regard, it is comforting that the correlation between income and wealth seems to be rather high. As Murtin and d'Ercole (2015) point out, "low-wealth households are typically low-income households while high-wealth households are typically also high-income households".

10 While it would be possible to derive the annual balance-series only from households' assessments in December of a year, we prefer to also include the October and November values to avoid outliers in a given month impacting on the annual results.

11 It should be pointed out that the inequality measure mainly answers the question whether and to which degree (compared to the past) inequality grows or decreases. By contrast, the level of the indicator does not seem to allow for a precise quantification of the positive (or negative) growth rate. The reason is rooted in the underlying balance series (for the highest and the lowest quartile). While their individual and joint evolution over time makes intuitive sense, their levels appear to suffer from a strong negative bias. For a number of countries examined, the balance series of both income groups remain negative throughout most of the observation period. This clearly conflicts with extended periods of positive economic growth, wage increases, etc. which took place over the observation horizon.

2000s) in Sweden has grown at a remarkably high speed, compared to other non-vulnerable countries.

Figure 1: Inequality in non-vulnerable countries



At first glance, these results appear surprising, especially in the case of Sweden, which is known for its social welfare state combining high income taxes and comparatively generous social welfare payments. The results get plausible though, when recalling a particularity of our inequality indicator, which distinguishes it from most other indicators usually looked at in comparable studies. Being derived from a survey question inquiring households' financial situation (rather than their income), the indicator in fact captures inequality developments in respect of both income and private wealth. With this in mind, the results lend support to the findings of Skopek et al. (2011), who conclude from an analysis of income and wealth data in the "Survey of Health, Ageing and Retirement in Europe" that wealth inequality in Sweden is unexpectedly high. According to the authors, the findings suggest that Scandinavian "welfare states are successful in reducing income inequalities… by progressive taxation…, [but] …are less successful in reducing wealth inequalities".

As regards the Netherlands, the results can be corroborated by a 2015 OECD study, which finds that, based on the ratio of mean and median net wealth per household, the Netherlands are the country with the second highest inequality of all 18 OECD countries examined.[12] While the Dutch ratio is around 5, it is close to two in most other OECD countries.

The same study also embarks on a comparison of inequality measures before and after the Great Recession (2006 vs. 2012). In the Netherlands, the median net wealth is shown to have dropped faster than the mean net wealth between 2006 to 2012, implying an increase in wealth inequality. A closer examination of the figures shows that the intensity of the inequality increase is the second largest of all countries examined and only more extreme in the case of the US.[13]

(iii) In all countries for which available data stretch sufficiently far backwards, one can discern a sharp acceleration in the inequality indicator in the second half of the 1980s'. The further course of the graph shows that something significant must have happened in that period, since the pace of inequality growth never falls back to the former levels any more. This observation could be rationalised by liberalisation policies enacted by conservative governments in the 1980s.

(iv) The financial and ensuing sovereign debt crises seem to have had a moderate and, in particular, only a temporary effect on the speed of inequality growth. Arguably, the imprint of the financial crisis was somewhat bigger, with three out of four countries featuring a simultaneous drop in the indicator in 2009, which probably reflects losses in the valuations of stocks, an asset mainly held by the wealthy layers of society.[14] The effect of the sovereign debt crisis is less clear-cut, Sweden being the only country with a clear downward correction of the indicator as of 2011.

(v) At the current juncture, the speed of inequality growth seems normal, compared to the last 30 years. The only exception are the Netherlands, where the increases of the past three years brought the indicator to a record-high level. While an analysis of the underlying reasons would go beyond the scope of this article, the surge might potentially be related to the 2012/13 Dutch recession, which almost

[12] The highest ratio (around 7) is found in the US.

[13] Note that the OECD provides data on the changes between 2006 and 2010 only for six OECD countries.

[14] See, e.g., data from the HFCS (ECB, 2013), which shows that stock ownership is concentrated in the higher income/wealth groups.

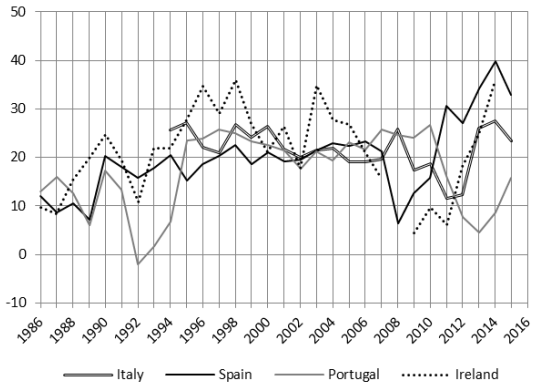
doubled the unemployment rate and forced the state to take severe austerity measures. As will be explained in this article, rising unemployment almost mechanically drives up the inequality indicator, while austerity measures at least have the potential to do the same.

The vulnerable countries

Turning to the vulnerable countries (see Figure 2), the major commonality with the previous group is that the inequality indicator generally stays well above 0[15], i.e. inequality never shrinks, but only, occasionally, grows at a reduced speed. In terms of volatility it seems that, especially in contrast to France and Germany, accelerations and decelerations in inequality tend to be larger. The Irish indicator, for instance, ranges between 10 and 35, whereas the German one never leaves a band between 10 and 20. On average, the indicator readings seem somewhat higher than in the non-vulnerable countries, but clearly below the Dutch level.

The most interesting section of the graph obviously relates to the financial crisis in 2009 and the ensuing debt crisis. While the reaction to the financial crisis is somewhat inconclusive, with inequality dropping a bit in Portugal and (more so) in Italy, while rising in Spain, the sovereign debt crisis seems to have left a very strong mark on all national indicators, which clearly dwarfs their reactions to the 2008/09 crisis.

Figure 2: Inequality in vulnerable countries



Generally, two groups can be distinguished: In Italy and Portugal, the debt crisis resulted in historic drops in inequality. In 2011/12, inequality growth in Italy was as low as never before. By the same token, the Portuguese inequality indicator in 2013 reached its lowest level in twenty years. The effects of the crisis in Spain and Ireland were diametrically opposed. Starting from a level of 12 points in 2009, the Spanish indicator skyrocketed to 40 points in 2014 (by far the highest level ever registered), paralleled by the Irish inequality indicator shooting up to 35 points.

To explain these differences in detail would go beyond the scope of this article, especially since it would require an in-depth analysis of the different national austerity measures with a view to the relative strength of their impact on high vs. low income/wealth households.

Nevertheless, even abstaining from policy measures, there are a number of variables with a potential bearing on inequality, which developed very differently across countries and can potentially explain (part of) the puzzling divergences in the national inequality trajectories.

The first of these variables is the level of unemployment. Whenever people get unemployed, they (i) are likely to move to a lower income group, driving up the share of unemployed, inter alia, in the lowest quartile.[16] (ii) Newly unemployed people are likely to report a deterioration in their financial situation. Taken together, rising unemployment thus tends to increase the relative share of respondents in the lowest income quartile which report a deterioration in their personal finances. It thus drives up the inequality indicator.

[15] The only exception is the value of the Portuguese indicator in 1992.

[16] While rising unemployment can, in principle, boost the share of unemployed in any of the income quartiles, it is likely to have a particularly strong effect on the first quartile. This is because (i) several countries pay unemployment benefits in the form of lump sums, which tend to fall into the lowest income quartile so as to provide sufficient incentives for people to seek new jobs and (ii) if unemployment benefits are calculated as a percentage of the last salary, the rates are usually quite low (e.g. 60% in Germany), resulting in significant income losses.

Indeed, a look at the evolution of unemployment in the four countries examined shows that this inequality-inducing variable increased, by far, the most in Spain. Between 2008 and 2013, the Spanish unemployment rate tripled from some 8% to more than 25%. The relative rise of the unemployment rate in Ireland was similarly pronounced, with the rate jumping from 5% in 2008 to 15% in 2010/11. Although equally regrettable, the surges in Portuguese and Italian unemployment rates were somewhat milder in the sense that the rates "just" doubled between 2008 and 2013/14.[17] It can thus be concluded that varying intensities of the surge in unemployment seem to be a partial explanation for why Spanish and Irish inequality increased so sharply in the sovereign debt crisis. Of course, the pattern cannot explain why inequality in Portugal and Italy actually dropped, thus highlighting the role that other variables must have played.

The second type of variables with a potentially significant bearing on inequalities are the valuations of financial and real assets. Provided that the likelihood of owing such assets is concentrated in the upper income/wealth class, drops in the prices of such assets should decrease inequality, while rises should do the opposite.

Since, according to the ECB's 2013 HFCS, the percentage of households owing their main residence is quite high in Spain (ca. 80%), Italy and Portugal (both around 70%), developments in house prices are unlikely to have a clear bearing on inequality (after all, most households are affected by changes in house prices). By contrast, the ownership of stocks seems to be a very divisive phenomenon. According to the HFCS, only some 10% of Spanish households owe stocks, which still favourably compares to Italy (ca. 5%) and Portugal (about 4%).[18] The study furthermore shows that the euro-area wide distribution of stocks by income group is markedly unequal: Whereas 2% of the lowest 20% of the income distribution hold stocks, the same goes for more than 24% of the best-earning 20% of the euro-area population. With such clear-cut results, we assume that the relationship also holds at national level, for which the HFCS unfortunately does not provide data.

In combination with the well-known fact that households have a "home bias" in their stock purchases[19], a look at the development of national stock indices[20] might therefore help explaining the observed inequality trajectories. The following observations are due:

(i) First of all, from the end of 2008 to the end of 2011, which is the period in which the Italian inequality indicator dropped more than the Portuguese, Italian stocks shed 22%, compared to a milder decrease of 13% in Portugal. Worth highlighting, in Spain and Ireland, where inequality did not decrease over the period, the losses were either very contained (-7% in Spain) or stocks actually rallied (+24% in Ireland).

(ii) Similarly, from 2010 to 2013, the Portuguese inequality indicator eased more than the Italian one, coinciding with a loss of 14% in Portuguese stocks, which is arguably more adverse than the 6% drop registered in Italy. Again, developments in Spain and Ireland were more benign, with either no changes (Spain) or a plus of 57% (Ireland).

(iii) Focussing on the surge in inequality across all countries towards the end of the observation period (2012-14 in Spain, 2011-14 in Ireland, 2012-14 in Italy and 2013-15 in Portugal), it clearly coincides with buoyant national stock markets:

2012-14 saw Spanish stocks increase by 26%, Irish stocks over the period 2011-14 rallied by 80%, while Italian valuations between 2012 and 2014 firmed by 17%. The only exception is Portugal, where rising inequality between 2013 and 2015 actually coincided with a decrease in stock prices of 19%.

[17] In Portugal, the unemployment rate rose from some 8% in 2008 to ca. 17% in 2013. In Italy, the rate increased from some 6% in 2008 to 13% in 2014.

[18] The study does not provide such data for Ireland.

[19] One of the first studies to shed light on the "home bias" was by French and Poterba (1991). A recent article by Vanpee and de Moor (2012) shows that the equity "home bias" in the OECD countries has decreased between 2001 and 2010, but is still present.

[20] The following indices are considered: MIB (Italy), IBEX 35 (Spain), PSI 20 (Portugal), ISEQ (Ireland).

On a more general level, the surge in inequality towards the end of the observation period coincides with the vulnerable countries moving back to positive economic growth. The first time after the financial and sovereign debt crises that consumers' assessments entering our inequality indicator were inquired against the backdrop of positive (year-on-year) GDP growth was in 2013 (Ireland, Portugal), 2014 (Spain) and 2015 (Italy). The fact that rallying growth did not translate into significant decreases of inequality (yet)[21] can be attributed to a general characteristic of economic upswings, namely their tendency to first be felt by the more affluent, before also impacting on the poorer layers of society.

Usually, upswings are preceded by stock markets rallying in anticipation of the enhanced growth rates. Once economic growth materialises, it tends to be concentrated in higher company profits. Only when the profits have been earned, discussions about a possible participation of the employees through wage increases start. In a similar vein, enterprises need to first make higher profits and gain a sufficient degree of confidence in the continuation of the positive trend before recruiting new employees. This typical sequencing of events in economic upswings is another potential reason (besides the above-described stock market rally) why the inequality indicator's upward trend towards the end of the observation period does not end abruptly. Most likely, it will take some more time before the benefits of more robust economic growth feed through to the lower income quartiles.

Conclusions

Departing from the observation of an extreme scarcity of data on income and wealth inequality in Europe, as well as a number of downsides related to the available data (underreporting of top income/wealth households, short vintages, etc.), this article presents a fundamentally new approach to the measurement of inequality.

Using consumer survey data from the EU Joint Harmonised Business and Consumer Survey Programme, the inequality measure is constructed as the difference between households' average assessment of their financial situation in the highest and the lowest income quartile.

The resulting indicators show whether inequality is increasing or decreasing (depending on whether the assessments of the high or low income households are higher) and the speed at which the two categories approach each other or drift apart.

The results for a selection of eight countries show that the effects of the financial crisis on inequality seem to have been rather moderate. The same goes for the sovereign debt crisis, when focussing on countries not immediately affected by it (Germany, France, Netherlands, Sweden). By contrast, the sovereign debt crisis has had sweeping effects on inequality in the vulnerable states examined (Spain, Portugal, Ireland, Italy). While Ireland and Spain saw inequality increasing at unprecedented pace, the inequality indicator in Italy and Portugal eased significantly. It is argued that these patterns are, amongst others, driven by particularly sharp rises in unemployment rates in Spain and Ireland (driving up inequality), as well as strong drops in Italian and Portuguese equity valuations (hitting the wealthier and thus lowering the inequality indicator). The inequality indicator's increase towards the end of the observation period, which is observed in all vulnerable countries, is attributed to a tendency of economic upswings to first be felt by the more affluent (through higher stock valuations and company profits), before feeding through to the lower income strata (through wage increases and decreasing unemployment).

As regards the non-vulnerable countries, an interesting observation relates to the Netherlands and Sweden, where inequality seems to be growing at comparatively fast speed.

[21] There are only tentative signs of a trend reversal in Spain and Italy in 2015 so far.

References

Atkinson, A. B., Brandolini, A. 2001. Promise and Pitfalls in the Use of "Secondary" Data-Sets: Income Inequality in OECD Countries as a Case Study. Journal of Economic Literature, September 2001, 771-799.

De Moor, L. and Vanpée, R. 2012. Bond and Equity Home Bias and Foreign Bias: an International Study. Katholieke Universiteit Leuven – Faculty of Business and Economics.

European Central Bank. 2013. The eurosystem household finance and consumption survey – results from the first wave. Statistics Paper Series No 2, April 2013.

French, K. R. and Poterba, J. M. 1991. Investor diversification and international equity markets. The American Economic Review 81 (2), 222–226.

Grabka, M. 2015. Income and wealth inequality after the financial crisis: the case of Germany. Empirica, 42: 370-390.

Jenkins, S.P., Brandolini, A., Micklewright, J., Nolan, B. 2013. The Great Recession and the distribution of household income. Oxford University Press.

Lundberg, J. and Waldenstroem, D. 2014. Wealth inequality and the Great Recession: evidence from Sweden.

Murtin, F. and d'Ercole, M. M. 2015. Household wealth inequality across OECD countries: new OECD evidence. OECD Statistics Brief, June 2015 - No. 21.

OECD. 2008. Growing unequal? Income Distribution and Poverty in OECD Countries.

OECD. 2011. Divided we stand – Why inequality keeps rising.

OECD. 2015. It it together: Why less inequality benefits all.

Peracchi, F. 2002. The European Community Household Panel: A review. Empirical Economics.

Skopek, N., Buchholz, S., Blossfeld, H.-P.. 2011. Wealth inequality in Europe and the delusive egalitarianism of Scandinavian countries. University of Bamberg – Chair of Sociology I.

ANNEX

Reference series

Confidence indicators	Reference series from Eurostat, via Ecowin (volume/year-on-year growth rates)
Total economy (ESI)	GDP, seasonally- and calendar-adjusted
Industry	Industrial production, working day-adjusted
Services	Gross value added for the private services sector, seasonally- and calendar-adjusted
Consumption	Household and NPISH final consumption expenditure, seasonally- and calendar-adjusted
Retail	Household and NPISH final consumption expenditure, seasonally- and calendar-adjusted
Building	Production index for building and civil engineering, trend-cycle component

Economic Sentiment Indicator

The economic sentiment indicator (ESI) is a weighted average of the balances of replies to selected questions addressed to firms and consumers in five sectors covered by the EU Business and Consumer Surveys Programme. The sectors covered are industry (weight 40 %), services (30 %), consumers (20 %), retail (5 %) and construction (5 %).
Balances are constructed as the difference between the percentages of respondents giving positive and negative replies. EU and euro-area aggregates are calculated on the basis of the national results and seasonally adjusted. The ESI is scaled to a long-term mean of 100 and a standard deviation of 10. Thus, values above 100 indicate above-average economic sentiment and vice versa. Further details on the construction of the ESI can be found at: Methodological guides - Surveys – DG ECFIN website
Long time series (ESI and confidence indices) are available at: Survey database – DG ECFIN website

Economic Climate Tracer

The economic climate tracer is a two-stage procedure. The first stage consists of building economic climate indicators, based on principal component analyses of balance series (s.a.) from five surveys. The input series are as follows: industry: five of the monthly survey questions (employment and selling-price expectations are excluded); services: all five monthly questions; consumers: nine questions (price-related questions and the question about the current financial situation are excluded); retail: all five monthly questions; building: all four monthly questions. The economic climate indicator (ECI) is a weighted average of the five sector climate indicators. The sector weights are equal to those underlying the Economic Sentiment Indicator (ESI, see above).
In the second stage, all climate indicators are smoothed using the HP filter in order to eliminate short-term fluctuations of a period of less than 18 months. The smoothed series are then normalised (zero mean and unit standard deviation). The resulting series are plotted against their first differences. The four quadrants of the graph, corresponding to the four business cycle phases, are crossed in an anti-clockwise movement and can be described as: above average and increasing (top right, 'expansion'), above average but decreasing (top left, 'downswing'), below average and decreasing (bottom left, 'contraction') and below average but increasing (bottom right, 'upswing'). Cyclical peaks are positioned in the top centre of the graph and troughs in the bottom centre. In order to make the graphs more readable, two colours have been used for the tracer. The darker line shows developments in the current cycle, which in the EU and euro area roughly started in January 2008.

EUROPEAN ECONOMY TECHNICAL PAPERS

European Economy Technical Papers can be accessed and downloaded free of charge from the following address:
http://ec.europa.eu/economy_finance/publications/eetp/index_en.htm

Titles published before July 2015 can be accessed and downloaded free of charge from:
http://ec.europa.eu/economy_finance/publications/cycle_indicators/index_en.htm
(European Business Cycle Indicators).

Alternatively, hard copies may be ordered via the "Print-on-demand" service offered by the EU Bookshop: http://bookshop.europa.eu.

HOW TO OBTAIN EU PUBLICATIONS

Free publications:

- one copy:
  via EU Bookshop (http://bookshop.europa.eu);

- more than one copy or posters/maps:
  - from the European Union's representations (http://ec.europa.eu/represent_en.htm);
  - from the delegations in non-EU countries (http://eeas.europa.eu/delegations/index_en.htm);
  - by contacting the Europe Direct service (http://europa.eu/europedirect/index_en.htm) or calling 00 800 6 7 8 9 10 11 (freephone number from anywhere in the EU) (*).

  (*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

Priced publications:

- via EU Bookshop (http://bookshop.europa.eu).

KC-BF-16-009-EN-N

Publications Office

ISBN 978-92-79-54529-0