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Special topic

'New normal'? – The impact of the financial crisis on business and consumer survey data

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2. SPECIAL TOPIC: 'NEW NORMAL'? – THE IMPACT OF THE FINANCIAL CRISIS ON BUSINESS AND CONSUMER SURVEY DATA

Introduction

In recent years there has been a discussion among analysts whether the relationship between quantitative ('hard') and qualitative survey ('soft') data has altered or become weaker in the aftermath of the 2008-12 'Great Recession' (financial and sovereign debt crises). Newspaper headlines like 'Italy puzzles over strong confidence, weak growth riddle'[1] are symptomatic for this hypothesis, suggesting that survey, or confidence, indicators have risen back to levels which are not matched by the post-crisis performance of corresponding hard economic data, such as growth rates of GDP, industrial production, private consumption, etc. Analytically, this could point to a pre/post crisis break in the relationship between the two data types, which has traditionally proven remarkably stable and useful for economic now-and forecasting.[2]

The relationship between soft and hard data is usually approximated by a linear function. Despite the fact that the soft indicators are inherently bounded (e.g. between –100 and +100 for individual balances and composite confidence indicators) while the hard target series (usually growth rates) can in principle take any value larger than –100%, linearity is a reasonable working assumption in 'normal times'. A break would then imply a more or less sudden shift in the parameters of the function. Indeed, using Italian manufacturing survey and production data, Bruno et al. (2016) find evidence for a break in the linear relation between soft and hard data in the summer of 2008. However, as the authors rightly point out, the fact that the break occurs at a point in time when the hard data series were subject to unprecedented dives, the finding could rather point to the inadequacy of a linear as compared to a non-linear relationship. A practical consequence of this conjecture would be to either use a non-linear model or run local linear regressions over shorter samples.

In order to get an understanding whether and in how far such methodological issues are relevant for certain sectors or countries covered by the Joint Harmonised EU Programme of Business and Consumer Surveys, this special topic presents an overview of the outcome of a systematic screening of survey data from the programme. The focus is on whether there is evidence for a level shift in the relation between survey and hard data emerging during or after the financial crisis.

The 'level shift' hypothesis

The hypothesis of a level shift can be grounded on several arguments: First, there is the technical argument related to the sampling process underlying the survey results.[3] In short, it conjectures that a positive bias in the aggregated survey results can stem from the fact that since the crisis and throughout the still ongoing recovery process, a large part of unsuccessful or under-performing firms have been pushed out of the market, and thus, the sample. Consequently it is the remaining firms with a better economic performance which report their more optimistic views, which, however, are not representative of reality. While in principle plausible, there are different reasons that speak against the practical relevance of the hypothesis. First of all, such a sampling bias should in principle apply to both survey and hard statistical data, which are also based on sampling of firms. This is especially

[1] G. Jones, 'Italy puzzles over strong confidence, weak growth riddle', 21 January 2016, available on Reuters at http://uk.reuters.com/article/uk-italy-economy-idUKKCN0UZ0LQ.

[2] See e.g. Malgarini (2012), Cesaroni and Iezzi (2015), Gayer et al. (2015).

[3] See e.g. Fantacone et al. (2016)

true when, as is often the case, the qualitative surveys are carried out by statistical institutes based on samples drawn from the same registers that are e.g. used for compiling industrial output figures for the economy.[4] Moreover, also empirically, Bruno et al. (2016) find no significant differences in reported optimism or pessimism between the responses of 'long-lasting' firms (i.e. responding in each round and, thus, apparently thriving) versus 'non-long-lasting' firms (i.e. responding only infrequently or no more) participating in the Italian manufacturing survey over the period 2006-10. The authors conclude that there is no evidence for a 'sample selection' bias in the data.

The second rationalisation of the level-shift hypothesis is of a psychological nature. Many survey questions ask respondents to qualitatively rate the current or an expected situation compared to a 'normal' situation or assess the level of a given economic variable against a 'sufficient' benchmark level. Against the backdrop of the Great Recession, the reasoning is that economic agents may have adjusted, i.e. lowered, their underlying reference standard, or 'level of aspiration', to a continued lower level of economic performance. Unlike the statistical 'sample bias' hypothesis it applies to both business and, maybe even stronger, consumers.[5]

For businesses, the hypothesis in particular implies that they may answer the survey questions with a lower level of long-term (or potential) output in mind, thus reporting qualitative assessments on business activity that appear to be above 'normal' even when actual production levels are still clearly below pre-crisis levels. In this case, the change in the reference standard is not of an 'unconscious' psychological nature, but rather a cognitive rational adjustment of expectations to a persistently reduced production capacity. An observed over-optimism relative to previous periods concerning the intensity of the recovery from the crisis could then hide a long-term dampening effect on firms' (perception of their) potential output, with repercussions on their production and investment plans.

Empirical results

The screening for an apparent level shift in the relation between soft and hard data was performed for the Economic Sentiment Indicator (ESI) and the confidence indicators for industry, services and consumers. Together the three components account for 90% of the sector weights underlying the ESI; any level shift in the ESI should thus be traceable to (at least) one of these components.[6] In addition, two individual survey questions were screened for each of the sectoral surveys in order to also cover assessments of past or present situations, which are not always included in the sectoral confidence indicators.

More precisely the following questions were selected: (i) from the industry survey: Q1 (managers' assessment of production trends) and Q2 (adequacy of overall order books); (ii) from the services survey: Q1 (trend in business situation) and Q2 (trend in demand/turnover); (iii) from the consumer survey: Q1 (trend in households' financial situation) and Q3 (trend in general economic situation of the country).

All series were assessed against their corresponding 'hard' reference series, appropriately transformed into year-on-year percentage changes: Industrial Production Index (IPI) for the industry survey, Value Added in Services (VA) for the services survey and Private Consumption (PC) for the consumer

[4] A related argument goes that statistical institutes' samples used to compile industrial output and GDP figures might fail to include new and more dynamic (and optimistic) start-up businesses that emerged after the crisis, see Jones (2016). Again, this alleged downward bias, this time in the hard data, should in principle apply in the same way to soft survey data.

[5] For the realm of consumer surveys, the argument is linked to the hypothesis of a psychological process called 'homeostatis' which seeks to explain why the long-term level of optimism/pessimism among consumers appears to be constant, while measures of economic performance are trending considerably over longer time horizons, see Curtin and Dechaux (2015).

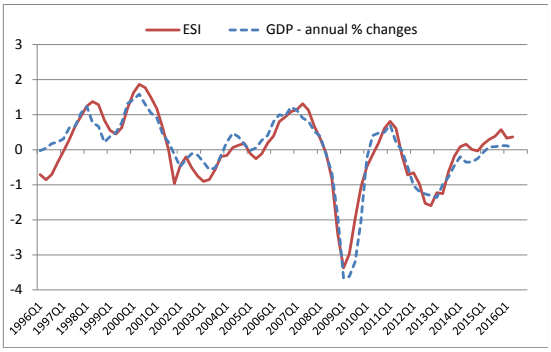
[6] The building and retail trade confidence indicators, each accounting for only 5% of the ESI, are not included in the analysis; for the retail trade indicator this can also be justified by the fact that it may to some extent be seen as a mirror image of the consumer survey results; building confidence is arguably following very idiosyncratic and highly country-specific drivers following the burst of the real estate bubble in a number of countries.

survey. In addition, the ESI and the three confidence indicators were assessed against real GDP growth. The screening was performed for the euro-area, the nine largest EU economies (Germany, France, Italy, Spain, the Netherlands, Belgium, the UK, Poland and Sweden) as well as Portugal.[7]

Euro area results

At the most aggregate level, Graph 2.1 displays the results for the ESI and the annual GDP growth rate for the euro area: visually, the level of the ESI corresponding to a certain rate of GDP growth seems to be slightly different after 2013 compared with the previous period.[8] Notably, the standardised ESI has been consistently above the GDP curve for almost three years.

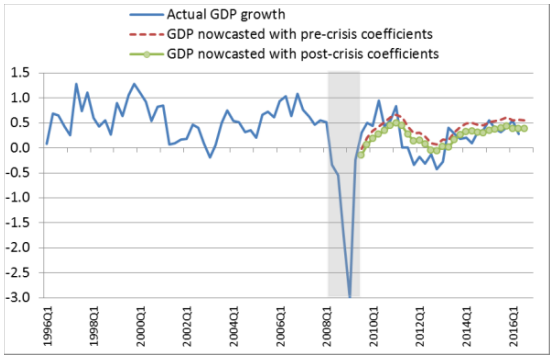
Graph 2.1: Euro area Economic Sentiment Indicator (ESI) and GDP (year-on-year % changes) – Standardised series



Somewhat more formally, Graph 2.2 presents the results of a regression-based comparison. In order to check if the divergence observed in the graph effectively corresponds to a different relationship between the soft data and the reference series, bivariate linear regression models (with constant) were run separately for the two sub-periods before and after the crisis.[9]

To exclude the impact of the extreme values in 2008-09 around the trough of the recession on the regression, which might indeed call for a non-linear modelling, the pre-crisis regression is run until 2008Q2, while the post-crisis estimation runs from 2009Q3 up to 2016Q2. Graph 2.2 displays the GDP nowcasts computed on the basis of the two different sets of estimated parameters. Plugging in the ESI data from 2009Q3 onwards, it illustrates the levels of GDP growth that would 'fit' to the level of the ESI in a pre-crisis versus a post-crisis world.

Graph 2.2: Euro area actual and nowcast GDP growth (year-on-year % changes)



In line with the simple visual inspection, the GDP nowcasts based on the post-crisis coefficients are slightly, but visibly below the forecasts that the current ESI levels would have suggested in a pre-crisis set-up (pre-crisis coefficients). The difference between the two nowcasts is quite stable at a level around 0.15 percentage points of annual GDP growth. That is to say, a given level of the ESI today corresponds to an annual euro-area GDP growth rate which is on average 0.15 pps. lower than what the same ESI level suggested before the Great Recession.

Under the assumption that this gap cannot (only) be due to a statistical sampling issue (which, as argued before, even if existent, should in principle cancel out in the soft and hard data), the result seems to provide some evidence for a 'psychological (or cognitive) shift' in what survey respondents consider as a ('normal' or 'sufficient') reference situation.

[7] Portugal was included to increase the number of countries hit (hard) by the sovereign debt crisis.

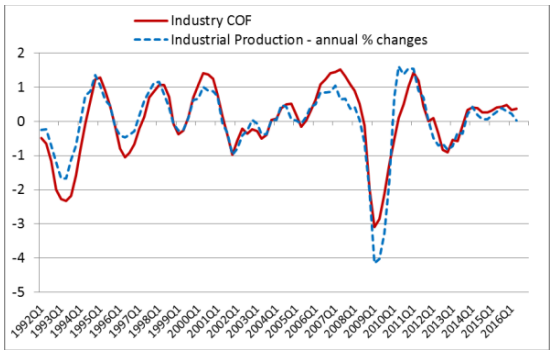
[8] In order to be able to compare the series in a unique scale, all corresponding pairs of soft and hard data were standardised over common samples, deducting the long-term average and dividing by the standard deviation of the series.

[9] Alternatively, break point tests could be used. However, referring back to the results by Bruno et al. (2016) reported above, it is likely that the findings are superposed by the non-linearity issue around the peak of the crisis. Moreover, the two-regression approach has the additional advantage that it delivers a readily interpretable quantification of any level shift.

Given that the ESI is a composite index whose main drivers are the confidence indicators in industry, services and among consumers, this raises the additional question whether the apparent shift in assessments is broad-based or comes from a particular segment of the economy.

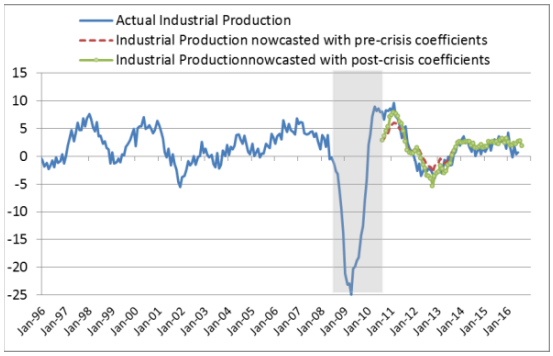
Graph 2.3 displays the relationship between the industrial confidence indicator and industrial production growth. A systematic level shift after the crisis is not apparent from the standardised series.

Graph 2.3: Euro area industrial confidence indicator and industrial production (year-on-year % changes) – Standardised series



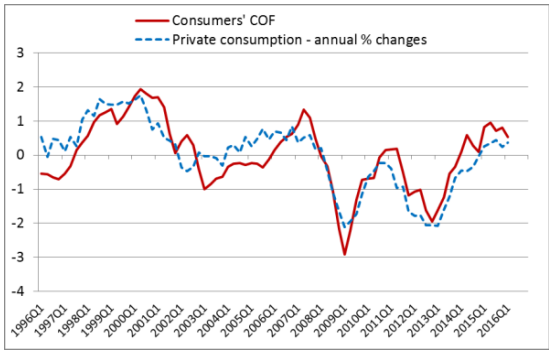
Comparing the regression-based nowcasts using pre- and post-crisis coefficients does not suggest systematically different forecast levels either (Graph 2.4); apart from a period around 2012/13, the IP nowcasts using the pre-crisis coefficients are not higher than those based on the post-crisis structure.

Graph 2.4: Euro area actual and nowcast Industrial Production (year-on-year % changes)



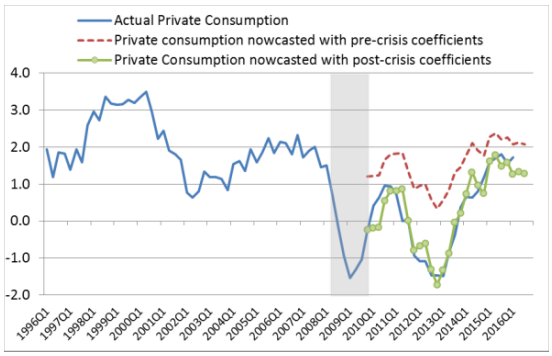
The picture is different when looking at the relationship between consumer confidence and private consumption growth, where Graph 2.5 already hints at a 'too high' level of the confidence indicator with respect to its reference series ever since 2010/11.

Graph 2.5: Euro area consumer confidence indicator and private consumption (year-on-year % changes) – Standardised series



This is confirmed by comparing the nowcasts based on the pre- and post-crisis regressions between the variables (Graph 2.6).

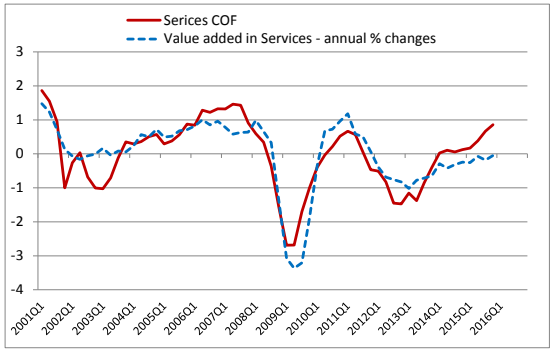
Graph 2.6: Euro area actual and nowcasted private consumption (year-on-year % changes)



Using the regression coefficients obtained from the sample 1996Q1 – 2008Q2, euro-area private consumption growth would have been nowcast consistently higher than actually observed and suggested by the post-crisis regression. The difference between the two nowcasts varies between a marked 2 pps. of annual consumption growth around 2012/13 and a somewhat reduced, but still significant gap of 0.7 pps. on average since 2015q1.

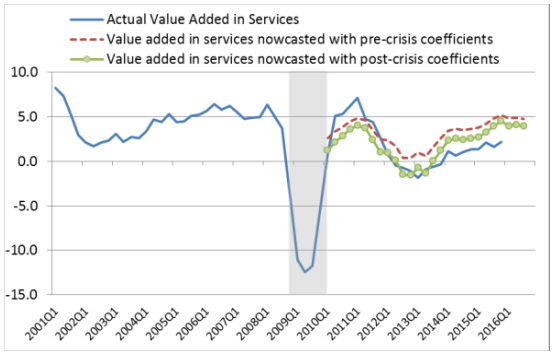
Somewhat in between the above results for industry and consumer confidence is the picture for the services confidence indicator.

Graph 2.7: Euro area services confidence indicator and value added (year-on-year % changes) – Standardised series



While Graph 2.7 suggests some 'over-optimism' compared to the past average relationship between the two series only recently (2014-15), the comparison of regression-based nowcasts for value added in services provides clearer evidence. The difference between the two nowcasts is again most pronounced around 2012/13 at a level around 1.8 percentage points of annual VA growth and narrows to around 0.8 pps. since 2015. Again, this means a given level of services confidence today corresponds to an annual euro-area growth rate in services VA which is about 0.8 pps. lower than what the same confidence level suggested before the crisis.

Graph 2.8: Euro area actual and nowcast value added in services (year-on-year % changes)



Altogether, the results for the euro area suggest that there has been a certain shift in respondents' reference standards or aspiration levels when answering the surveys: measured by historical, i.e. pre-crisis, standards, the level of their confidence is high compared to the level of growth observed in the economic target series in the aftermath of the crisis. For the euro area, this shift appears to be strongest among consumers and is also observable in the responses of services managers. In both cases, the extent of the 'positive bias' appears to have been diminishing more recently. By contrast, there is no evidence that respondents to the manufacturing industry survey have altered their level of aspiration when answering the questions that enter into the industry confidence indicator.

Overview of full results

In total, 143 series were checked by a visual pre-screening of appropriately standardised soft and hard data for a level shift during or after the crisis. Of the 143 series, around 50% do not show any apparent difference between pre- and post-crisis relations between the survey indicators and hard data, while for around 40% a change in the relation seems plausible. For the remaining 10% the visual inspection did not give clear results, in most cases due to idiosyncratic or volatile developments pre- or post-crisis.

Looking across the results for the sample of ten countries (Germany, France, Italy, Spain, the Netherlands, Belgium, Portugal, the UK, Poland and Sweden), a possible shift in the level of the 'soft' indicators is visible (i) when comparing the ESI with year-on-year GDP growth in Germany, France, Italy, Spain and Portugal; (ii) when comparing the consumer confidence indicator (and in particular question Q3, which asks for an assessment of the general economic situation) with consumption growth in Germany, the UK and Poland (even if in the latter the series is too short to derive strong conclusions); (iii) when comparing the services confidence indicator with value added in services in Germany, Belgium, Portugal, the UK and Poland. Only for Q1 of the services survey (which asks for an assessment of the past business situation) there also appears to be a level shift in Italy. By contrast, and in line with the results for the euro area, with the exception of Poland, there is no clear evidence for level shifts in the industry survey.

Impact on manufacturers' perceived potential output

While the analysis has not provided evidence for a shift in the assessment standards of respondents to the monthly industry survey, the

results from the quarterly question on capacity utilisation can be used to investigate whether the crisis has led industry managers to reduce their perception of the level of potential output to a lower post-crisis 'normality'.[10] Following Malgarini (2012), combining the average capacity utilisation rate reported by managers and actual industrial production data, we calculate a measure of (perceived) potential manufacturing output for the euro area and the ten selected EU Member States.

Capacity utilisation (CU) derived from the Harmonised EU-wide surveys can be interpreted as the ratio between the current level of industrial output (IP) and its (perceived) potential manufacturing output (PMO):

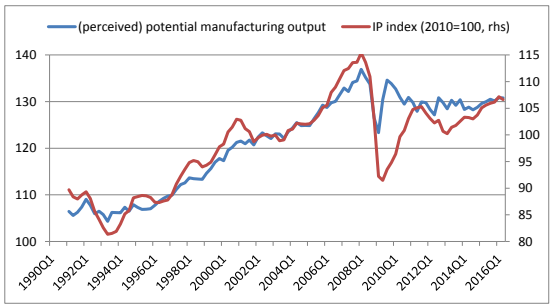
$CU_t = IP_t/PMO_t \times 100$

Therefore, the (perceived) potential manufacturing output (PMO) can be derived as the ratio of industrial production (IP) and capacity utilisation (CU).

As visible in Graph 2.9 for the euro-area, this measure of (perceived) potential manufacturing output fell markedly during the crisis, but largely recovered already in the second half of 2009Q2. Since then, it remained broadly stable at a level around 4% below pre-crisis. This lower level of perceived production potential could have induced manufacturing managers to lower their aspiration levels, e.g. when assessing their order books against the reduced production capacity. However, the previously reported results suggest that this is not the case, i.e. the level of confidence, assessment of order books etc. relative to 'hard' manufacturing growth appears to be in line with pre-crisis times.[11]

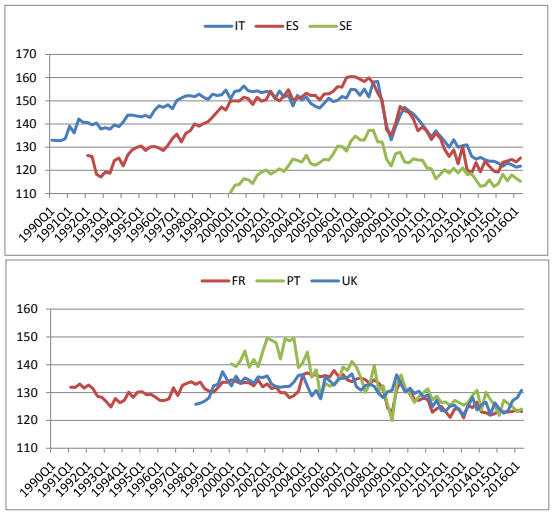
The comparison of the PMO index with the actual IP index shows that, following the significant gaps between actual and perceived potential output in 2009/10 and 2012/13, perceived potential output is broadly in lockstep again with observed production by historical (pre-crisis) standards more recently.

Graph 2.9: Euro area industrial production index and (perceived) potential manufacturing output (PMO)



The picture is quite different for Italy, Spain and Sweden, and to some extent also France, the UK and Portugal (see Graph 2.10).

Graph 2.10: (perceived) potential manufacturing output (PMO) in Italy, Spain, Sweden, France, Portugal and the UK



In these countries there is evidence of a persistent negative shift in the level of

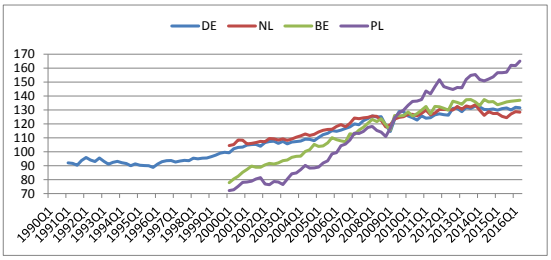
[10] Bruno et al. (2016), using Italian micro-data on capacity utilisation, provide some evidence that the recession has modified the way agents form their expectations, leading to a change of their production plans and a setting of a 'new normal' situation. They show that the level of capacity utilisation that managers consider as 'sufficient' has decreased after 2009. While this would suggest a 'new modesty', the 'sufficient' level of capacity utilisation seems to have recovered to close to pre-crisis levels recently, suggesting that firms could have finally adjusted their capital stock.

[11] These apparently conflicting results may be reconciled when assuming that managers assess the sufficiency of their orders not in terms of volumes but in terms of months of production. Under this assumption, the results may point to an (implicit) adjustment of aspiration levels also in the manufacturing survey, in the sense that managers make their assessment of the sufficiency of order books in view of the reduced production capacity.

perceived potential manufacturing output.[12] The loss of perceived potential has been particularly strong in Italy and Spain, amounting to around 20% relative to early 2008. Moreover, in Italy, potential manufacturing output appears to continue to decrease. Despite this significant loss of production potential, the previously reported screening results suggest that industry managers have not (explicitly) adjusted their general aspiration level to this lower reality.[13]

By contrast, in Germany, Belgium, the Netherlands and Poland the crisis has affected the level of (perceived) potential manufacturing output only temporarily. Hence, in line with the results of the screening of manufacturing confidence before and after the crisis, any significant adjustment of long-term aspirations is not to be expected.

Graph 2.11: (perceived) potential manufacturing output (PMO) in Germany, Belgium, the Netherlands and Poland



Summary and conclusions

In order to check if there is evidence for a possible shift in the level that managers and consumers consider as 'normal' or 'sufficient' when they are asked to assess their situation, selected confidence indicators and questions of DG ECFIN's Business and Consumer Survey programme have been compared with their respective reference series in a pre-crisis versus post-crisis set-up. The results for the euro area suggest that there has been a certain shift in respondents' reference standards when answering the surveys: measured by historical, i.e. pre-crisis, standards, the level of their confidence is high compared to the level of growth observed in the economic target series in the aftermath of the crisis. For the euro area, this shift appears to be strongest among consumers and is also observable in the responses of services managers. In both cases however, the 'positive bias' appears to be diminishing more recently. By contrast, there is no evidence that respondents to the manufacturing industry survey have altered their level of aspiration when answering the questions that enter into the industry confidence indicator.

With some nuances, the results are broadly reflected at the country level. Overall, a change in the level seems plausible for around 40% of the screened 143 survey series after the Great Recession. Based on indications that the gaps appear to become less important over time, time will show whether this 'new, lower normal' is indeed a persistent feature.

For the time being, some caution seems warranted when gauging current survey levels against historical standards; in relation to observable economic output indicators, a 'good' situation today was arguably a merely mediocre situation in the eyes of some survey participants before the crisis. This needs to be addressed in regression-based inference about economic activity using survey data over longer time periods.

Importantly, we do not find evidence for a 'new normal' in the case of the manufacturing industry survey. While manufacturers' (aggregate) ideas of their potential production are still somewhat below pre-crisis levels in the euro area, this does not seem to have impacted on their aspiration level or general confidence in their business. This appears to be the case even in countries where potential output in industry is still markedly below pre-crisis levels.

[12] The results are broadly in line with Malgarini (2012) who finds evidence of a negative shift in the level of perceived potential output in Italy, France and the UK.

[13] As discussed above, it is possible that an implicit adjustment is taking place, where managers tie their assessment e.g. of the sufficiency of order books to the reduced production capacity.

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