The European Commission's business and consumer surveys and Maltese macroeconomic trends

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Abstract

The European Commission's business and consumer surveys are the most extensive regular surveys of Maltese firms and households. The Economic Sentiment Indicator (ESI) for Malta is closely correlated with real GDP growth, particularly when one focuses on the first vintage of national accounts data. This suggests that the opinions expressed by economic agents are partly driven by news prevailing at the time. The sectoral confidence indicators that underpin the ESI are quite highly correlated, with construction sentiment being the most synchronised with sentiment in other sectors. In general, sectoral expectations on future activity appear to be less strongly correlated to changes in national accounts sectoral value added than survey responses to planned employment changes are to observed changes in sectoral employment. Maltese household economic expectations appear to be mostly reflective of current conditions and could be useful to forecast variables that are issued with some time lag, like real GDP.

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Executive Summary

Since 2002 the European Commission has included Maltese households and manufacturing firms in its monthly business and consumer surveys. In recent years, the exercise has also included firms in the services, building and retail sectors, making these surveys the most extensive regular surveys of Maltese firms and households. The Central Bank of Malta has regularly commented on the results of these surveys in its publications, and recently has started to include them in its own Business Conditions Index (BCI). There is a very extensive literature that suggests that business and consumer confidence indicators can be very useful in forecasting economic activity, though to date there have been no attempts to study this in relation to Maltese data. In this light, this policy note attempts to answer three questions:

- **How indicative is the European Commission's Economic Sentiment Indicator (ESI) of the current and future state of the Maltese economy?**

While the ESI for Malta is a much smoother variable than the Maltese economy's real GDP growth rate, the two variables have a close positive correlation. This correlation becomes even more pronounced if one focuses on the first estimates of real GDP growth, rather than later vintages of national accounts data. This suggests that the opinions expressed by economic agents participating in the European Commission survey are partly driven by available economic data and news prevailing at the time. In fact, studies carried out for other EU countries indicate that the correlation between the ESI and growth in GDP is strongest at zero lag, suggesting that the ESI is a coincident rather than a leading indicator of economic activity. It is also interesting that the degree of correlation between Malta's ESI and that in other EU countries (particularly export-oriented economies like Germany and Ireland) is higher than that observed in real GDP growth. This may reflect the fact that the ESI gives a disproportionate weight to industrial firms, which tend to be more exposed to common international factors. Despite the fact that the sectoral composition of the ESI is becoming less in line with that of the national economy, the ESI remains a good coincident indicator of economic activity and can help predict first estimates of Malta's real GDP growth.

- **Do sectoral business survey results shed light about future activity in that particular sector?**

The sectoral confidence indicators that underpin the ESI are highly correlated, with construction sentiment being the most synchronised with sentiment in other sectors. Sectoral value added data from the national accounts are much less correlated, with the construction sector again showing the highest degree of co-movement with other sectors. Correlation

between ESI and national accounts sectoral indicators varies greatly, from strong correlation for construction to some co-movement for industrial confidence to very little correlation for the services and retail sectors. The industrial confidence indicator appears to be a good leading indicator for future changes in manufacturing value added, particularly if one looks at data after 2011. The change in manufacturing employment is also strongly correlated with the balance of manufacturing firms stating whether they would be increasing or decreasing employment. Conversely, responses to questions on manufacturing firms' planned future production are only weakly correlated with changes in the index of industrial production compiled by the National Statistics Office. In general, sectoral expectations on future activity appear to be less strongly correlated to changes in national accounts sectoral value added than survey responses to planned employment changes are to observed changes in sectoral employment. This is particularly true for the services sector. On the other hand, the replies of construction firms are quite indicative of observed changes in both activity and employment, whereas the replies of retail firms have much less predictive properties on observed sectoral developments.

- **Are Maltese household economic expectations reflective of current conditions or can they be used as leading indicators?**

The correlation between consumers' assessment of the economic situation and the first and last vintages of real GDP growth is quite strong and comparable to that found between real GDP growth and the ESI. Consumer expectations about the future economic situation are very closely correlated with their evaluation of past economic activity. However an equation that utilises the lagged value of consumer expectations about future economic activity beats a simple auto-regressive model of real GDP growth in terms of forecasting ability. This suggests that while consumer expectations of economic growth may be backward-looking, they have some predictive power. Maltese household expectations about future movements in unemployment are very closely correlated with past trends in the unemployment rate (as measured in the Labour Force Survey), while expectations of inflation are somewhat less related to past changes in official measures of inflation. Consumer expectations on major purchases in forthcoming months do not appear to have a significant degree of correlation with trends in private consumption growth. Maltese household economic expectations thus appear to be mostly reflective of current conditions and could be useful as coincident indicators, particularly to forecast variables that are issued with some time lag, like real GDP growth. For other variables, like inflation and unemployment, where data is issued on a monthly basis, the usefulness of the survey indicators is more limited.

How indicative is the European Commission's Economic Sentiment Indicator (ESI) of the current and future state of the Maltese economy?

Since 1962 the European Commission has conducted regularly a monthly survey among tens of thousands of private sector firms and consumers in order to provide an indication of current and expected trends in national economies. The questions posed tend to ask for a qualitative reply, such as whether a firm expects to increase, reduce or maintain the same employment level over the next few months, or whether a consumer feels that the general economic situation will improve, worsen or remain the same.[2] The replies from a selected number of these questions are used to create sectoral indicators of confidence, which are in turn converted into a synthetic indicator of overall business conditions known as the ESI.[3]

Given its timeliness and the forward-looking nature of some of the questions, the ESI and other indicators from the monthly surveys carried out by the European Commission have been frequently used to supplement or complement macroeconomic data. Several studies have also been undertaken to assess the extent to which replies from these surveys can be used as coincident or leading indicators of economic activity.[4]

In November 2002, the European Commission extended its surveys to cover Malta. Initially only the manufacturing sector and households were surveyed. Subsequently in May 2007 the survey was extended to services firms, followed by construction companies a year later and finally the retail sector in May 2011. At present the manufacturing survey is carried out among 347 firms, covering 89% of manufacturing employment (with an unweighted response rate of 31%). The sample of services firms covers 612 entities, accounting for 64% of employment (unweighted response rate of 27%). 80% of registered construction firms are included in the sample, constituting nearly 96% of total employment (unweighted response rate at 24%). All registered wholesale and retail firms are surveyed (with an unweighted response rate of 34%). To gauge consumer confidence, one thousand Maltese households are contacted (with a response rate of 40%). This makes these surveys the most comprehensive monthly economic surveys of Maltese firms and households.

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[2] The questionnaires can be found at https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/business-and-consumer-surveys/methodology-business-and-consumer-surveys/national-questionnaires_en

[3] For details on how the ESI is compiled see European Commission (2019). Gelper and Croux (2010) looks at alternative ways how the ESI could be constructed using more sophisticated techniques.

[4] See for instance de Bondt and Forsells (2017), Posta and Pikhart (2012), Soric, Lolic and Cizmesija (2016), Mourougane and Roma (2002) and Kuzmanovic and Sanfey (2012).

In this light, the Central Bank of Malta gives the results of these surveys due coverage in its economic publications.[5] Moreover since 2016, the ESI is one of the indicators used to compile the Bank's Business Conditions Index (BCI), which is meant to identify turning points in Malta's business cycle and changes in activity in real time.[6] That said, there has not been, to date, an attempt to study the effectiveness of the ESI as a coincident or leading indicator of Maltese GDP, similar to studies which have been carried out in other economies.

Chart 1: Trends in ESI and real GDP growth for Malta
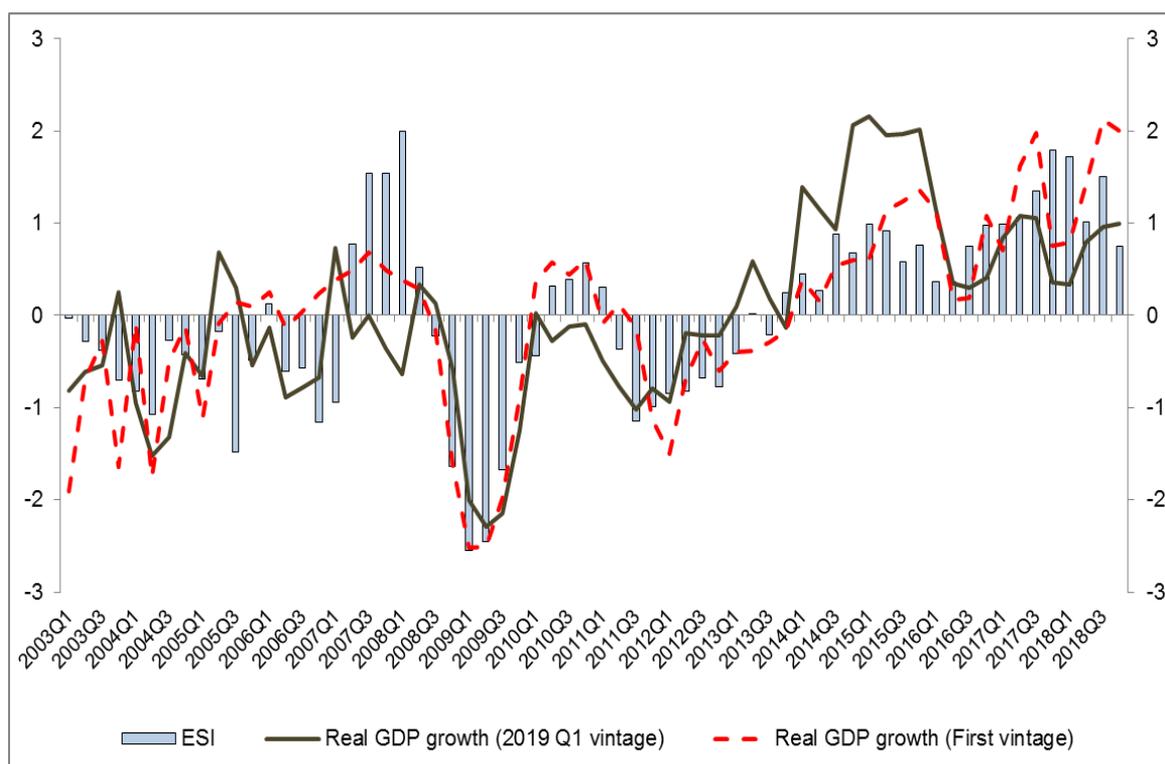
Chart 1 shows real GDP growth and the ESI level for Malta. Both real GDP growth and the ESI level are normalised to facilitate comparisons. Moreover given that real GDP growth data tend to be revised extensively, the Chart also includes data on the first estimate of real GDP growth.[7] The ESI is a much smoother variable than the real GDP growth rate,

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[5] Up to 2006, the Central Bank of Malta conducted its own Business Perceptions Survey. In recent years, the Bank has carried out a regular quarterly exercise of contacts with selected private sector firms and institutions, but the scope of this exercise is to complement information emerging from the European Commission's surveys and also to study in more detail developments in certain industries.

[6] See Ellul (2016) for details.

[7] The GDP vintages can be found at https://www.centralbankmalta.org/site/excel/economics/real-time-macroeconomic-database.xlsx. For a review of GDP revisions for Malta see Grech (2018).

particularly in the pre-crisis period. However there is a significant degree of positive correlation (0.64) between the two variables. When one focuses on the first estimate of real GDP growth, the degree of correlation becomes even more pronounced (0.78). This essentially reflects two factors; namely the fact that the pre-crisis peak of economic activity appeared relatively much higher at the time than later figures showed and the impact of the large upward revision in GDP for 2014 and 2015 that was done in late 2016.[8]

The stronger correlation with the first vintage of data could suggest that the opinions expressed by economic agents participating in the European Commission survey are partly driven by available economic data and news prevailing at the time. The degree to which expectations are backward-looking rather forward-looking is something that will be assessed more deeply in the other two questions addressed in this policy note.

Posta and Pikhart (2012) indicate that for most EU countries the correlation between the ESI and growth in GDP is strongest at zero lag, suggesting that the ESI is not as such a leading indicator but can be useful as a coincident indicator.[9] Table 1 broadly confirms this finding, though there are six countries, including Malta, where the ESI has a stronger correlation with the first lag of real GDP growth. The overall drop in correlation is not that significant, however. This reflects the fact that both economic sentiment and economic activity tend not to fluctuate greatly in the short term.

Table 2 compares the correlation between Malta's ESI and that in other EU countries, and contrasts it with the correlation between its economic cycle and that of its European partners. It is quite interesting that the correlation in economic sentiment is much more pronounced than that in real GDP growth. Malta's economic sentiment appears to be quite synchronised with that of major exporting EU countries, like the Netherlands, Germany and Ireland. This may reflect the fact that the ESI gives a lot of weight to the responses of industrial firms, much more than the weight that manufacturing has in overall GDP. These firms would tend to form part of global value chains affected by common factors, like external demand and oil prices.

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[8] The latter mainly reflected a large upward revision in the gambling and betting sector.

[9] Gayer (2005) finds that the ESI is most useful to forecast GDP growth up to one or two quarters ahead. Moreover, the Commission survey indicators turn out to have a better tracking performance when used in annual differences rather than in levels. In this note the focus is however on levels. This is in line with more recent literature, particularly in factor modelling, such as Giannone et al. (2009) and Bulligan et al. (2012), where qualitative variables are treated as stationary in levels.

Table 1: Correlation between ESI and real GDP growth (zero and first lag)

	Zero lag	*First lag*
Austria	0.857	0.829
Belgium	0.880	0.785
Bulgaria	0.830	0.734
Cyprus	0.896	0.888
Czechia	0.899	0.851
Denmark	0.635	0.649
Estonia	0.923	0.917
Finland	0.833	0.834
France	0.874	0.808
Germany	0.775	0.738
Greece	0.877	0.826
Hungary	0.791	0.796
Ireland	0.716	0.668
Italy	0.863	0.804
Latvia	0.954	0.928
Lithuania	0.881	0.838
Luxembourg	0.478	0.403
Netherlands	0.912	0.887
Poland	0.699	0.598
Portugal	0.928	0.851
Romania	0.887	0.839
Slovakia	0.884	0.866
Slovenia	0.930	0.899
Spain	0.885	0.932
Sweden	0.788	0.732
UK	0.721	0.726
EU	*0.885*	*0.840*
Malta	*0.637*	*0.654*

Source: author's estimates using European Commission and Eurostat data

Table 2: Correlation between Malta's ESI and GDP growth and those of other nations

	ESI	*Real GDP growth*
Austria	0.649	0.260
Belgium	0.584	0.230
Bulgaria	0.359	0.117
Cyprus	0.500	0.081
Czechia	0.505	0.384
Denmark	0.357	0.453
Estonia	0.285	0.259
EU	*0.703*	*0.470*
Finland	0.408	0.242
France	0.529	0.268
Germany	0.703	0.419
Greece	0.312	0.131
Hungary	0.731	0.520
Ireland	0.705	0.675
Italy	0.552	0.402
Latvia	0.352	0.181
Lithuania	0.491	0.242
Luxembourg	0.485	0.383
Netherlands	0.707	0.441
Poland	0.555	-0.030
Portugal	0.733	0.468
Romania	0.258	0.225
Slovakia	0.418	0.241
Slovenia	0.598	0.392
Spain	0.543	0.411
Sweden	0.668	0.410
UK	0.686	0.464

Source: author's estimates using European Commission and Eurostat data

Chart 1 suggests that there were periods in time, particularly during the downturns in 2009 and 2012 and the subsequent upturn in 2013, when the relationship between Malta's ESI and the most recent vintage of real GDP growth rate was stronger than average. This was tested statistically by computing the correlation between the two variables over a shorter time frame, namely twenty consecutive quarters, over the period for which the ESI is available. On average, the correlation coefficient between the final vintage of real GDP growth and the ESI amounted to 0.54 (or less than the correlation observed for the whole period). Moreover the correlation in the last two years appears to have dropped

substantially. The highest degree of correlation was in the twenty quarter period before 2016Q1, when there was a 0.91 positive correlation between Malta's ESI and real GDP growth. By contrast in more recent periods the correlation between the two variables has disappeared. This basically reflects the fact that economic sentiment remained quite high by historical standards, but there was a deceleration in real GDP growth compared to the very high growth rates seen in 2014 and 2015.

When one does the same analysis using the first vintage of real GDP, the loss in correlation is not as stark. In fact, on average, there is a positive correlation of 0.76 (virtually the same as when the correlation is computed for the entire period), with a peak of 0.91 in the twenty quarter period before 2013Q1. In more recent periods, the correlation drops, but just to 0.53. This continues to suggest that the ESI is much more accurate in predicting trends in the first estimate of GDP growth rather than later vintages of data.

In fact, an equation that uses the first lag of the ESI to forecast the first estimate of real GDP growth is more accurate at predictions than a simple autoregressive model. This is true for two-, three- and four-quarter ahead forecasts, while for one-quarter ahead forecasts the two models have similar predictive powers.[10]

Do sectoral business survey results shed light about future activity in that particular sector?

As outlined previously, sectoral confidence indicators underpin the ESI. These sectoral indicators are quite highly correlated, as can be seen in Table 3. The sectoral confidence indicator which displays the least relative co-movement is the retail sector's confidence indicator, whilst the construction sentiment indicator is the one that is most synchronised with sentiment in other sectors. Sectoral value added data from the national accounts for construction, services, retail and industry are much less correlated.[11] The value added of the construction sector displays the highest level of co-movement with the other sectoral indicators, followed closely by consumption expenditure data (interpreted here as the

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[10] The relative RMSE for the simple GDP ESI equation stands at 0.6 for the four and three- quarter ahead forecast and at 0.7 for the two-period ahead forecast. These RMSEs were calculated using a 20-quarter moving quarter sample period.

[11] Note that when dealing with national accounts data, the indicators are defined in annual terms (to eliminate seasonality).

counterpart to the consumer confidence indicator). By contrast, industry value added data is the least synchronised with the other national accounts indicators.

When looking at the degree of correlation between ESI and national accounts sectoral indicators, these vary greatly. On the one hand, private consumption expenditure and construction value added are strongly correlated with construction and consumer confidence indicators. Industry value added and the industrial confidence indicator show some degree of co-movement. By contrast, there is little correlation between national accounts estimates for the services and retail sectors and the sentiment indicators for these sectors. Interestingly the strongest correlations are found between private consumption growth and the construction and services confidence indicators. The degree of co-movement is lowest between retail value added and industrial and services sector confidence.

Table 3: Correlation between ESI and national accounts indicators (2011 to 2018)

	Const ESI	Consu ESI	Ind ESI	Ret ESI	Ser ESI
Construction ESI	1	0.7	0.7	0.8	0.8
Consumers ESI	0.7	1	0.7	0.6	0.8
Industry ESI	0.7	0.7	1	0.5	0.7
Retail ESI	0.8	0.6	0.5	1	0.6
Services ESI	0.8	0.8	0.7	0.6	1

	Const	Consu	Ind	Ret	Ser
Construction	1	0.6	0.3	0.3	0.1
Consumers	0.6	1	0.4	0.3	0.1
Industry	0.3	0.4	1	-0.1	-0.2
Retail	0.3	0.3	-0.1	1	0.6
Services	0.2	0.1	-0.2	0.6	1

	Const ESI	Consu ESI	Ind ESI	Ret ESI	Ser ESI
Construction	0.6	0.6	0.5	0.4	0.6
Consumers	0.7	0.6	0.4	0.6	0.7
Industry	0.5	0.2	0.5	0.2	0.5
Retail	0.1	0.1	0.0	0.2	0.0
Services	0.2	0.5	0.2	0.3	0.2

Chart 2 shows that the change in manufacturing value added is not closely correlated with the concurrent level of industrial confidence. However when one looks at the first three lags of industrial confidence, the degree of correlation grows significantly (exceeding 0.5 in all

cases, with maximum correlation close to 0.6 for the second lag). If one restricts analysis to the period since 2011 (i.e. excluding the significant variation induced by the Great Recession), the degree of correlation between the concurrent values for the change in manufacturing value added and industrial confidence is nearly double that seen for the whole time series (with maximum correlation of 0.6 for the first lag of industrial confidence).

Chart 2: Trends in industrial confidence and in manufacturing value added growth
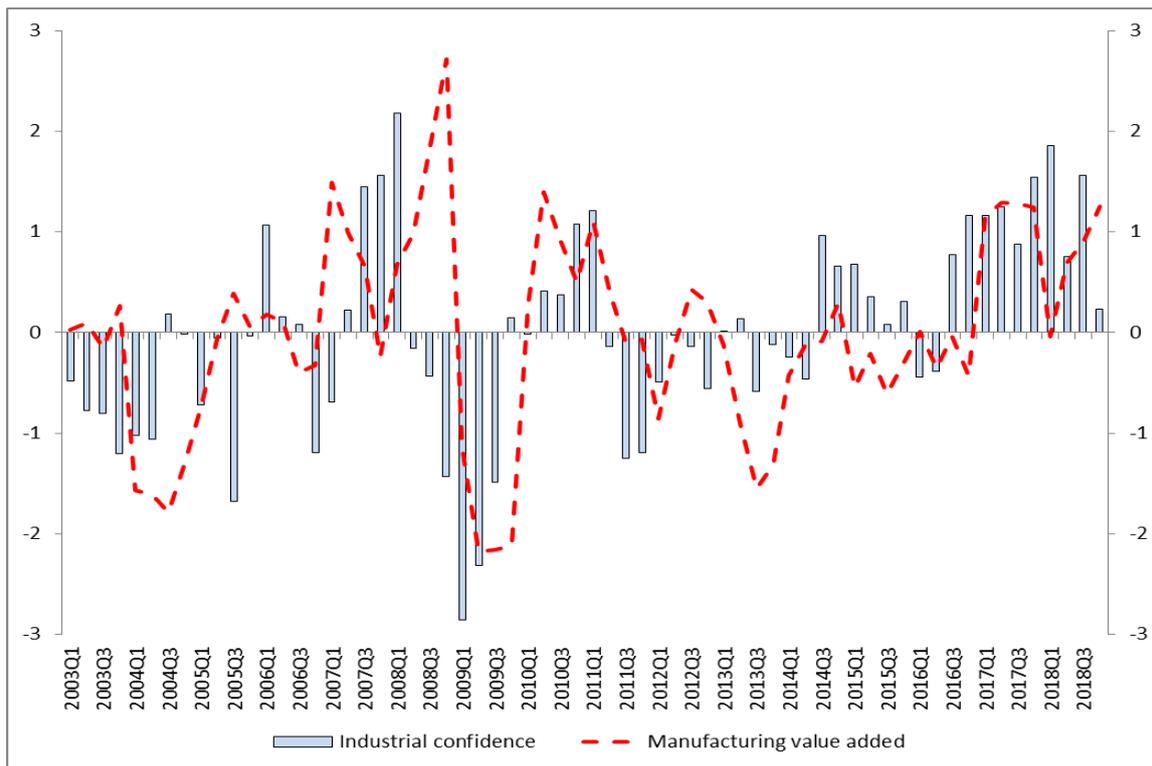
The change in manufacturing employment is also strongly correlated with the concurrent reading and the first lag of the balance of manufacturing firms stating whether they would be increasing or decreasing employment in the months ahead. When considering the whole time series, the degree of correlation in this case is noticeably stronger than that seen between industrial confidence and the change in manufacturing value added. However if the time period is restricted to 2011, the degree of correlation between employment intentions and the actual change in employment falls to that seen between industrial confidence and the change in manufacturing value added.

The European Commission's survey includes questions on manufacturing firms' past production and planned future production. Responses to the two questions appear very closely correlated (close to 0.6 for the concurrent and the first lag of the two sets of responses). This suggests that, despite reported relatively volatile changes in output,

expectations of future production are driven to a large extent by past production. On the other hand, survey responses on planned or past production are only weakly correlated with the change in the index of industrial production compiled by the National Statistics Office (with the correlation coefficient never exceeding 0.4). The industrial production index is less volatile than survey responses to questions on past or planned production (see Chart 3).

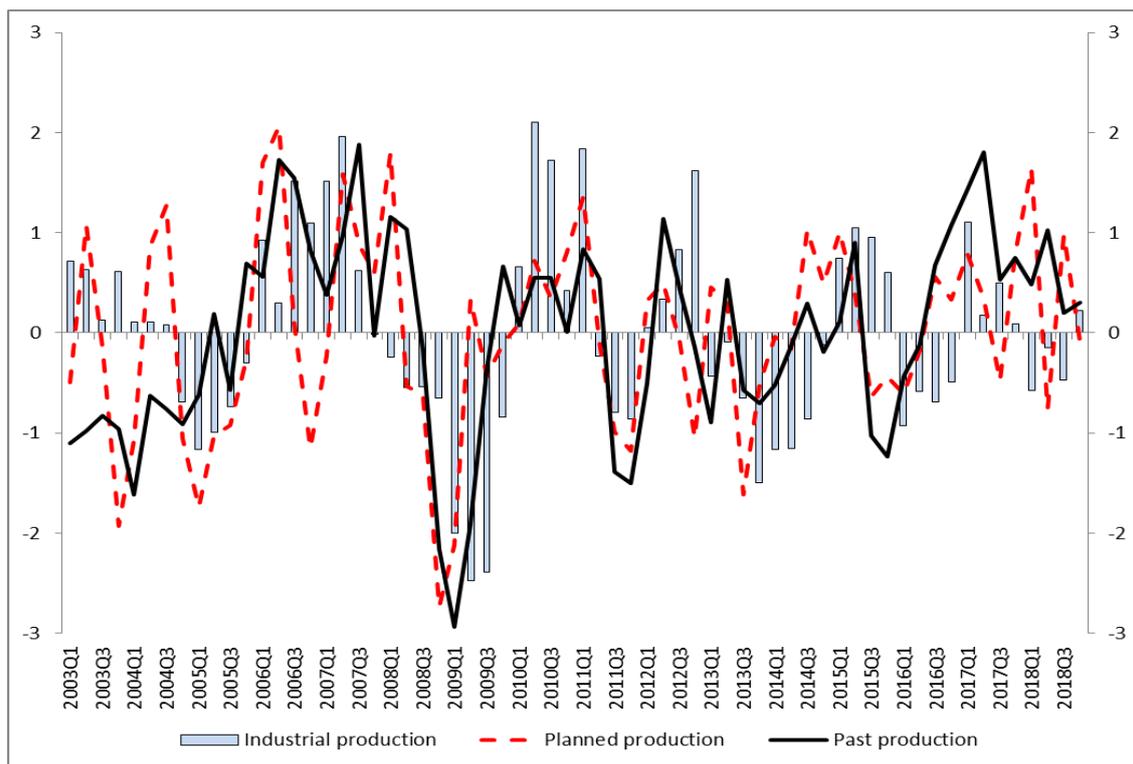**Chart 3: Trends in industrial production and in responses on past/planned production**

Table 3 indicated that sectoral confidence indicators were closely correlated with changes in national accounts estimates of value added when one looks at manufacturing and construction, but much less so for retail and services. The confidence indicators are compiled in a way that combines replies to different questions, including how activity and employment are expected to develop in future. Table 4 looks at whether survey responses on future activity and employment changes are indicative of observed changes in national accounts sectoral estimates for the different sectors. For instance, survey responses by construction firms on future employment changes are closely correlated (0.7) with observed changes in construction employment one quarter later. The correlation between anticipated activity and observed changes in sectoral value added is less strong for all sectors. It is interesting to note that whereas services firms' expectations of activity are not that indicative of subsequent observed changes in sectoral value added, employment expectations are much more closely correlated with actual outcomes. This could in part reflect the sample

composition of the European Commission survey which may focus more on the larger employers in the sector. While these firms continue to be the main drivers of employment growth, over time a larger relative share of value added in the services sector is being generated by smaller firms (see Grech, 2018a). In fact, if one extends the sample back to 2003, the degree of correlation between anticipated activity in services and observed changes in value added rises significantly (to 0.5), whereas that between expected changes in employment and observed changes remains virtually unchanged (at 0.6).

Table 4: Correlation between sectoral national accounts indicators and survey expectations (2011 to 2018)

|	*Manufacturing*	*Construction*	*Retail*	*Services*
Activity	0.3	0.4	0.1	0.1
Employment	0.4	0.7	0.2	0.5

Table 4 suggests, similarly to Table 3, that the replies of industrial and construction firms are quite indicative of observed changes in their activity and employment, whereas the replies of retail firms have less predictive properties. As for services, it appears that the effectiveness of the survey may be declining over time, particularly if one focuses on trends in value added rather than those in employment.

Are Maltese household economic expectations reflective of current conditions or can they be used as leading indicators?

The consumer confidence survey includes a large number of questions to households on their opinion of the current and future state of economic activity. This includes a question on how they evaluate the general economic situation evolved over the last twelve months and how they expect it to change over the next twelve months. When one compares the balance of replies of consumers on how the economic situation changed with the first and last vintages of real GDP growth, the degree of correlation is quite strong and comparable to that found between real GDP growth and the ESI. Whereas in the latter case the correlation was stronger for the first vintage, in the case of consumer replies on past economic growth the correlation is slightly stronger with the last vintage of GDP data (0.68 vs 0.65 for the first vintage). However, as can be seen from Chart 4, if one restricts analysis to more recent periods rather than the whole time series, the degree of correlation is strongest with the first

vintage of GDP data.[12] The Chart also indicates that consumer evaluations of economic activity tend to be quite stable. Once the evaluation turned negative in mid-2003, it remained so till early 2007, followed by a brief interlude during the pre-crisis peak in activity. This was followed by another long period during which replies remained negative, despite the recovery in activity after the crisis. Since mid-2013 the trend in consumer replies on the past economic situation have tended to be nearly consistently upwards, even though the rate of GDP growth has fluctuated.

**Chart 4: Trends in GDP growth and in consumer replies on past economic situation**
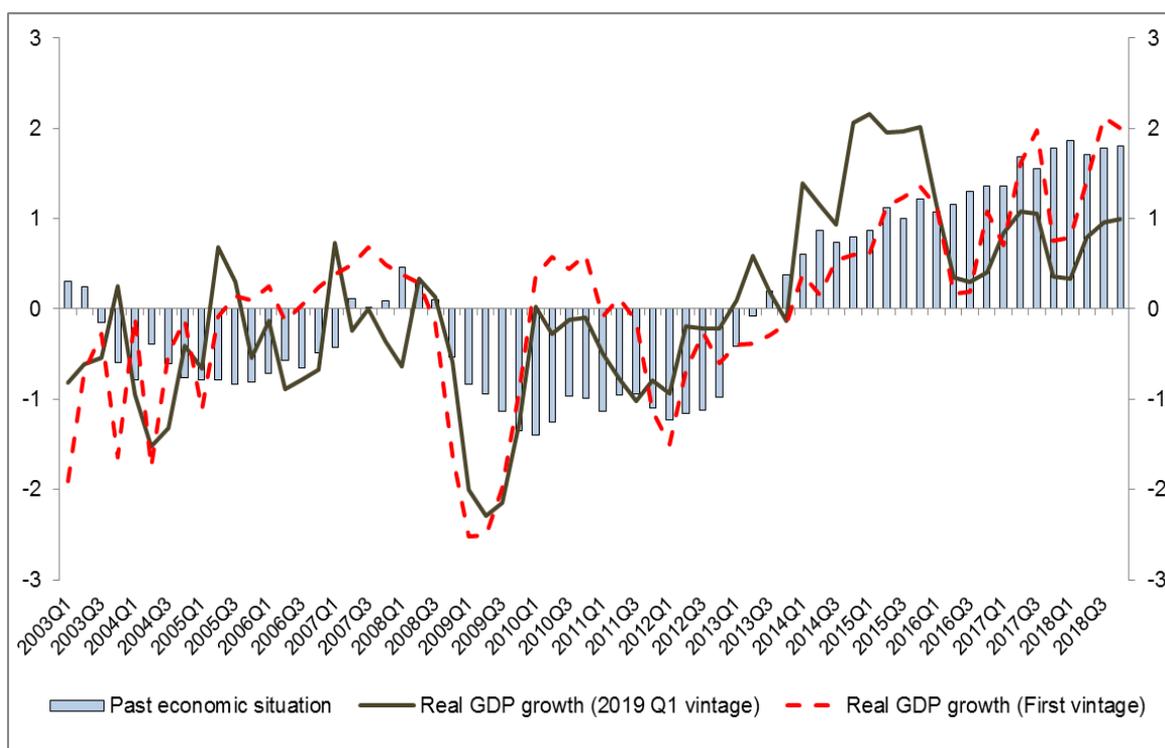
Consumer expectations about the future economic situation are very closely correlated with their evaluation of the past evolution of economic activity (with the degree of correlation of nearly 1). The degree of correlation between consumer replies on the past and future economic situation exceeds slightly the correlation between real GDP growth and its lagged value (which stands at 0.8). This suggests that while Maltese consumers form their expectations based on their assessment of the past, they do not tend to adapt expectations that much to account for errors between their expectations and actual outcomes.

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[12] If one computes correlation for a window of twenty successive quarters (rather than the whole period), the correlation between consumer replies on past economic growth and the last vintage of GDP data starts to break down in 2017. By contrast the correlation with the first vintage of GDP data drops slightly after 2017 but remains strong at nearly 0.64.

Although the survey question relates to economic growth over the next twelve months, replies are not that closely correlated with the four-quarter ahead measure of GDP growth. Correlation is strongest with the concurrent and one-quarter ahead measure (0.6 and 0.7 respectively). An equation that utilises the lagged value of consumer expectations about future economic activity beats a simple auto-regressive model of real GDP growth in terms of predictive ability.[13] This suggests that while consumer expectations of economic growth may be backward-looking, they have some predictive power particularly over a short horizon.

Chart 5: Trends in unemployment and in consumer expectations of this variable
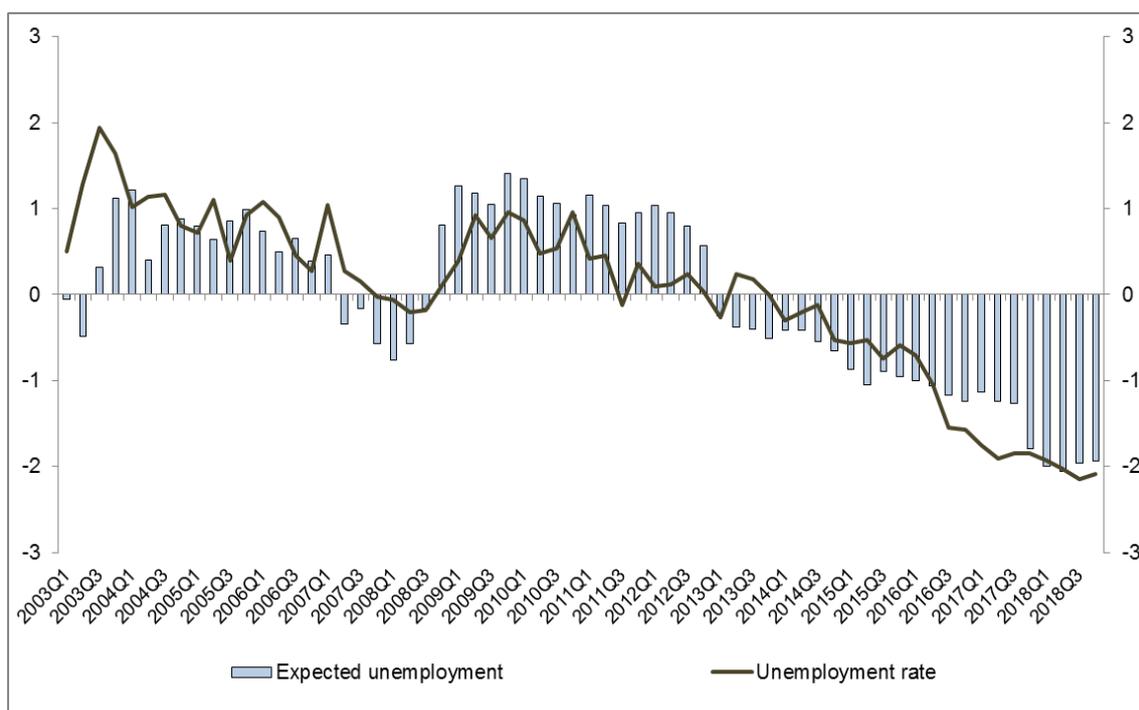

Maltese consumers participating in the European Commission surveys also appear to be quite conscious of ongoing developments in unemployment (see Chart 5). There is a very close degree of correlation (standing at 0.8) between trends in the unemployment rate (as measured in the Labour Force Survey) and consumer expectations on future movements in unemployment. The degree of correlation seen for Maltese consumers is nearly double that observed at EU average level when looking at the current period values of unemployment expectations and observed changes in unemployment. Whereas for the EU the degree of correlation rises steadily for additional lags in unemployment expectation (with the highest

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[13] The relative RMSE for an equation that forecasts real GDP growth using consumer expectations of growth stands at 0.8 for the four and three- quarter ahead forecast and at 0.9 for the two-period ahead forecast. These RMSEs were calculated using a 20-quarter moving quarter sample period.

value found for the three-quarter lag) that for Malta falls with each additional lags.[14] Since the survey question asks for trends in unemployment over the next twelve months, this indicates that Maltese consumers' expectations on unemployment are backward-looking whereas those at EU level appear to have more predictive power.

Chart 6: Trends in inflation and in consumer expectations of this variable
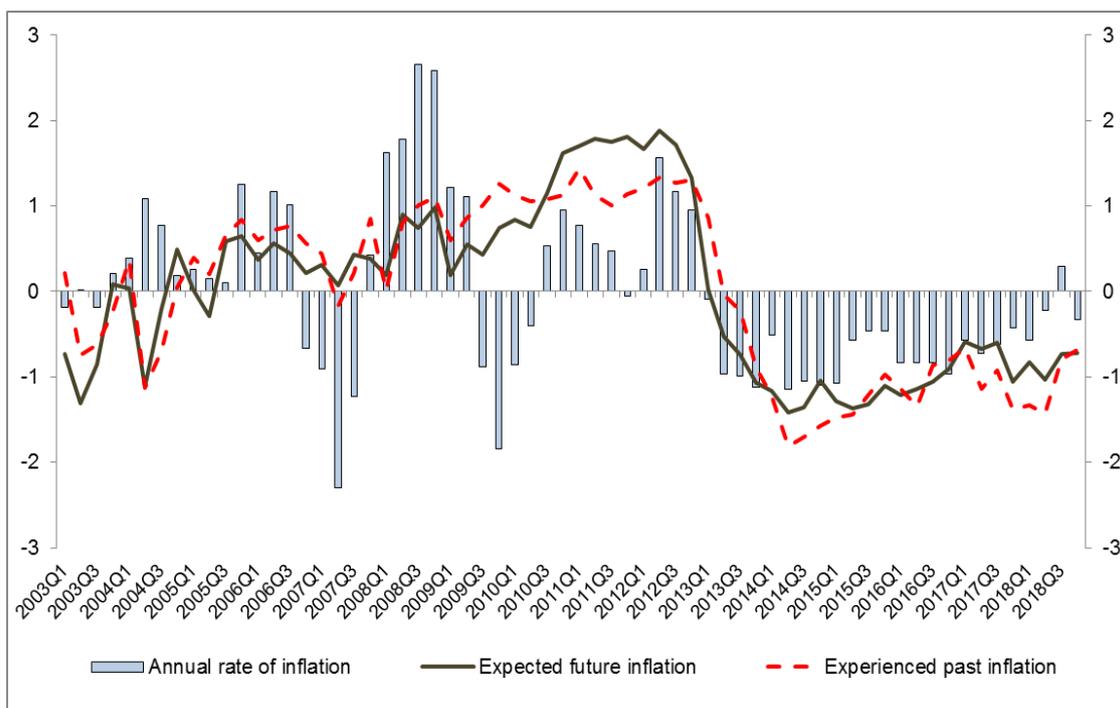

The European Commission survey also asks consumers about price developments they experienced in the past and their expectations on future inflation. The responses to these two questions are positively correlated to trends in the official inflation rate (both measured by means of the HICP and the RPI). However the degree of correlation (0.5) is less pronounced than that observed when looking at the correlation between expectations on unemployment and the economic situation and trends in official measures of unemployment and GDP growth. Moreover in this case, the degree of correlation observed for Maltese consumers is significantly less than that seen when looking at responses of EU consumers on inflation trends (0.9). As can be seen from Chart 6, Maltese consumers' responses on past experienced inflation and their expectations of future inflation mirror each other very closely. The degree of correlation between the two is much more pronounced than that observed amongst EU consumers (0.9 vis-à-vis 0.7).That said, it appears that since 2011,

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[14] That said, at the three-quarter lag, the degree of correlation for Maltese data stands at 0.67, which is slightly higher than that for the EU average.

Maltese consumers' inflation expectations and their experience of inflation is becoming more aligned with trends in the official measure of inflation, and is now in line with the relationship observed amongst EU consumers. This possibly reflects the fact that during this period, Malta's inflation rate has become significantly less volatile.

However while consumer responses on past inflation have become more in line with observed trends in inflation, consumer expectations on future inflation do not appear to have acquired any predictive properties. Expectations of future inflation remain quite highly correlated to the current level of observed inflation, with correlation dropping significantly if one relates expectations of inflation expressed in previous quarters to observed inflation in subsequent quarters. By contrast expectations on inflation expressed by EU consumers show more correlation when one looks at inflation in the following two quarters, than when one compares them with inflation observed in that same quarter.

Chart 7: Trends in consumption and in consumer expectations of this variable
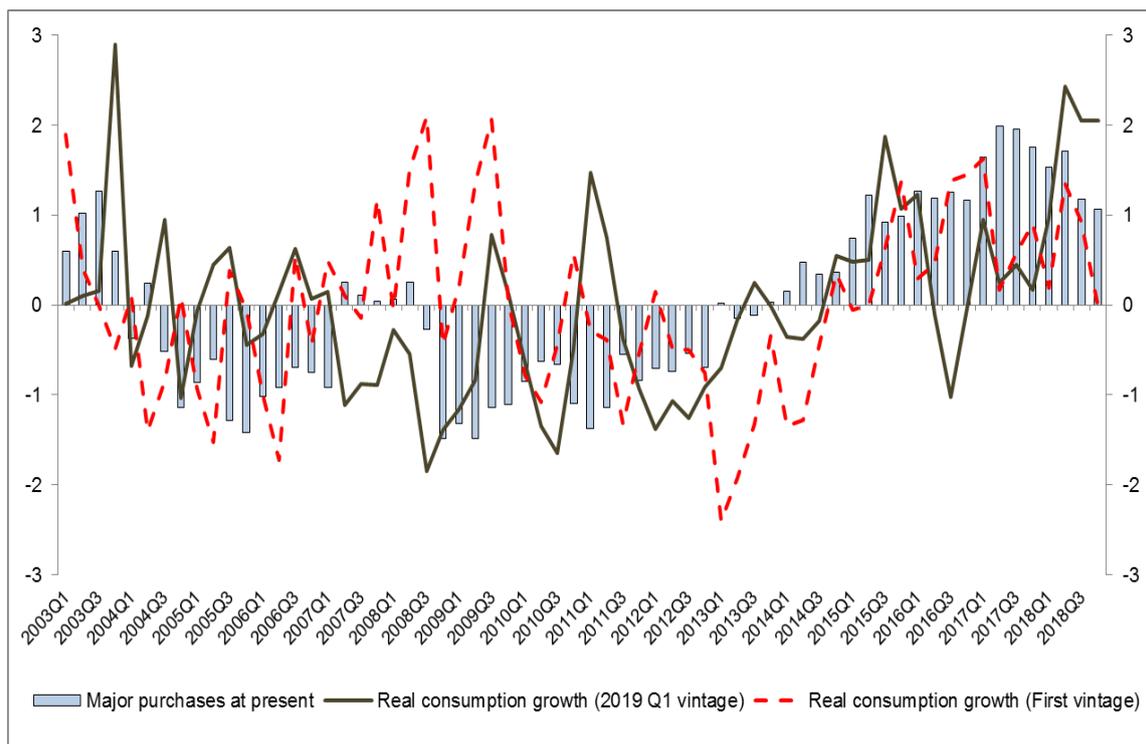
Besides questions on broad macroeconomic variables, consumers are also asked about whether they are making major purchases at present or whether they plan to make any in the forthcoming year. Both Maltese and EU consumers have a tendency to say that while they are currently making major purchases, they would stop doing this in future months. In

recent years, the difference between responses on the level of current major purchases and future ones has increased in both the EU and in Malta.

Consumer expectations on major purchases in forthcoming months do not appear to have a significant degree of correlation with trends in private consumption growth. The relationship between changes in real private consumption and responses on major purchases at present is more pronounced but still relatively weak (0.4) when one looks at the entire time series available for consumer survey responses in Malta. However, as can be seen from Chart 7, since 2011 the relationship has tended to strengthen (to 0.6), particularly when one looks at the first vintage of national accounts data. Quite interestingly, the degree of correlation rises when one uses replies to the question on whether major purchases are being made at present to explain changes in consumption in subsequent quarters. Consumer replies on current major purchases have the highest correlation (0.7) with private consumption growth two quarters later. That said, an equation that utilises this lagged value of consumer responses on major purchases fails to beat a simple auto-regressive model of real private consumption growth in terms of predictive ability.

Maltese household economic expectations appear to be mostly reflective of current conditions, and thus could be useful as coincident indicators, particularly for forecasting variables that are issued with some time lag, like real GDP growth. For other variables, like inflation and unemployment, where data is issued on a monthly basis, the usefulness of the survey indicators is more limited.

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