CENTRAL BANK OF MALTA
POLICY NOTE
GLOBAL OIL PRICE SWINGS AND SHIPPING DISRUPTIONS: 
DO THEY MATTER FOR MALTA?

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Policy Note
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Abstract

Recent years have been characterised by the COVID-19 outbreak, a sharp contraction in global economic activity in 2020 and a remarkable rebound in 2021, though with continued supply disruptions. Energy and commodity prices were further fuelled by the war in Ukraine. As a result of these factors, oil prices and shipping costs experienced large swings, which in turn led to high inflationary pressures not seen since the early 1980s. Against this background, this study compares the developments in inflation between Malta and the euro area as well as its member countries. It also aims at assessing the effect that oil price swings and disruptions in the shipping industry at the global level exert on the Maltese economy, with emphasis on HICP inflation and its main sub-indices. As of September 2022, the Maltese headline inflation (7.4%) is the second lowest in the euro area right after France (6.2%) and far from the peak value of 24.1% reached in Estonia. Moreover, oil price swings and, to a lesser extent, disruptions in the shipping industry appear to produce recessionary effects while raising several inflation sub-indices. Finally, the energy subsidies implemented by the Maltese government since July 2021 helped reducing the negative effects of the two disturbances.

JEL classification: C32, F41, Q43

Keywords: Oil shocks, Shipping Disruptions, Inflation, Malta.
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Executive Summary

The global economy has been hit by unprecedented shocks in recent years. These shocks resulted in large swings in commodity prices and shipping costs, which in turn led to rising inflationary pressures not seen since the early 1980s.

Both shipping and energy have a direct impact on the Maltese economy as a small island with a highly open economy and heavily reliant on shipping transportation for merchandise goods and commodities. In terms of energy, the Maltese economy has historically been reliant on the importation of a variety of fossil fuels. Between the mid-1990s and 2016 almost the entirety of the electricity in Malta was produced from heavy fuel oil while, from 2017, mostly from liquified natural gas (LNG). In addition, energy prices in Malta are fully administered and, to date, have been kept unchanged since July 2021 despite the surge in international energy prices.

As of September 2022, Malta's inflation rate, at 7.4%, remains relatively lower than that experienced in the euro area, which stood at 9.9%. Headline HICP inflation in Malta is the second lowest in the monetary union right after France (6.2%) and far from the peak value of 24.1% reached in Estonia. As a comparison, the other three of the four larger Member States, Spain, Italy and Germany respectively recorded a 9.0%, 9.4% and 10.9% increase in prices. When considering the sub-indices of non-energy industrial goods and services, Malta's inflation stands at 6.6% and 7.4%, which are above those of the monetary union, respectively, at 5.5% and 4.3%. Maltese food inflation stands at 10% and below the euro area at 11.8%.

When assessing the effect of global oil price swings and disruptions in the shipping industry, both disturbances appear to exert recessionary effects on the Maltese economy while putting upward pressure on headline inflation and its sub-indices. This study uses a VAR framework to assess the impact of higher energy and shipping costs on the Maltese economy. A 10% oil shock produces responses characterised by a bigger magnitude than those of a 10% shock originating in the shipping industry. Moreover, shipping disruptions appear to have a slightly less persistent recessionary effect and do not significantly influence domestic energy prices. Following a global energy disturbance, Maltese food, energy and services inflation sub-indices gradually increase, while non-energy industrial goods experience a more abrupt upward pressure.

Finally, the evidence provided in this study shows that the energy subsidies provided by the Maltese government would help reduce the negative consequences on economic activity and to dampen the inflationary pressures experienced by, mainly, the food and services HICP sub-indices. Following a 10% energy shock the latter sub-indices would experience substantially lower upward pressures. More precisely, food and services would respectively raise prices by 0.25% and 0.2% in the medium term as opposed to 0.5% and 0.45% in the case of no government intervention. Therefore, as of September 2022, the reason why the Maltese headline inflation is relatively low by euro area standards is likely to be due to the combination of two factors: a direct effect of no increase in energy prices and an indirect
effect due to the absence of spillover effects from domestic energy prices into other categories in the consumption basket.
1. How does the Maltese inflation compare with the Euro area’s

As a result of the COVID-19 pandemic and the restrictive measures introduced by governments worldwide to limit the spread of the virus, the World Bank estimates that the global economy shrank by around 3.3% in 2020 with all the Organisation for Economic Cooperation and Development (OECD) countries losing together 4.4% of their output when compared with the previous year.²

Despite such a slowdown, during most of the subsequent year the global economy quickly responded to the easing of the pandemic restrictions and promptly rebounded, driven mainly by a strong increase in aggregate demand. According to the World Bank, the world economy grew by 5.8% in 2021 with all the OECD countries regaining 5.6% of their economic activity.³

Chart 1

**NOMINAL BRENT OIL PRICE IN USD AND BALTIC DRY INDEX - JANUARY 2000 - MARCH 2022**

(Index; Dollars)

This volatility in economic activity resulted in sharp swings in oil prices and shipping costs. Chart 1 shows the evolution of two indices over the period between January 2000 and March 2022 that capture the developments in these markets. Specifically, the Baltic Dry Index (BDI) is depicted in blue and plotted on the left scale while the nominal brent oil price in red is plotted on the right scale and expressed in dollars per barrel. The BDI is a shipping-freight cost issued by the London-based Baltic Exchange and is a composite index of shipping costs across three major cargo sizes (Capesize, Panamax and Supramax) relative to more than 20 maritime trade routes worldwide. The index is regarded as a measure of demand for shipping capacity versus the supply of cargos and, as such, it is seen as a leading indicator of economic activity. The Brent oil price, depicted in red and plotted on the right scale, shows the price of a blend of light-sweet crude oil extracted from the oilfields in the North Sea. Due to its low density and low content of sulphur, the blend is relatively easy to process into petroleum products and, as such, it is used as a benchmark for pricing crude oil in most of the Atlantic basin and internationally.

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² World Bank national accounts data: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG
³ See footnote 2.
Chart 1 shows how both indices tend to gradually increase during periods of economic expansions and to decline abruptly in conjunction with global economic crises. This characteristic was particularly evident during the Great Recession of 2008/09 and at the onset of the COVID-19 pandemic. During such periods, the demand for cargo capacity and for energy suddenly fell due to the negative outlook of the global economy.

Both indicators are of critical importance for the global economy and Malta is no exception. Given its insularity as an island economy, Malta is heavily reliant on the shipping industry for the importation of goods (such as raw materials, intermediate and final goods). Moreover, Malta has historically been an economy reliant on the importation of a variety of fossil fuel products, to the extent that almost the entirety of its electricity was produced by heavy fuel oil until 2017. Finally, energy prices in Malta are fully administered and, to date, have been kept unchanged since July 2021 despite the recent surge worldwide.

**Chart 2**

HARMONISED CONSUMER PRICES IN THE EURO AREA AND IN MALTA – JANUARY 2002 – SEPTEMBER 2022

(Percentages)

![Chart 2](image)

Source: Eurostat.

Chart 2 compares the headline HICP for the Maltese economy (in red) and for the Euro area (in blue) between January 2002 and September 2022. Three observations stand out. First, inflation in Malta follows closely that of the euro area. Second, inflation in Malta shows a slightly more volatile behaviour, which is more pronounced during the years prior to accession to the monetary union and during the subsequent turbulent years characterised by the Great Recession. Third, the two series of inflation present a relatively similar path during the months following the COVID-19 outbreak. More precisely, after an initial cooling down in prices, the two HICP indices abruptly increased and grew in a parallel way. Inflation in Malta, however, increased at a slower pace compared to the euro area.

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4 As of 2021, the electricity supply in Malta comprised net generation from renewable sources (9.9%), from imports via the Malta-Sicily interconnector (19.1%) and from power plants (71.0%). Source: National Statistics Office - Malta (2022).
Chart 3
FOOD, NON-ENERGY INDUSTRIAL GOODS, AND SERVICES HICPS IN THE EURO AREA AND IN MALTA - JANUARY 2002 - SEPTEMBER 2022
(Percentages)

Chart 3 depicts the inflation series relative to the four main sub-components of overall inflation: food, non-energy industrial goods, energy and services. The four Maltese series appear to fluctuate in a similar way as those of the euro area and this is especially evident in the case of food and non-energy industrial goods throughout the sample. After the pandemic, the growth rates in food and non-energy industrial goods are not only highly correlated but also seem to track one another. On the contrary, services inflation shows a more volatile behaviour in Malta than in the euro area. Energy inflation in Malta followed that in the euro area, albeit being more volatile, only until 2013. Energy inflation in the euro area has surged throughout 2021 and 2022 with peaks above 40%. Despite this, energy prices in Malta have been kept unchanged since July 2021 as a result of government subsidies.

Chart 4 decomposes the overall HICP (solid black line) into the contributions of its four main sub-components for both the euro area and Malta: food (blue), non-energy industrial goods (orange), energy (yellow) and services (purple). The figure clearly evidences how during the pre-pandemic period all the HICP contributions in Malta appear to be quite in line with those in the monetary union as a whole. However, the singularity of Malta that comes out of Chart 4 is the significantly low contribution of energy inflation during the 2017-2020 period and its null contribution from July 2021. The absence of energy inflation helps explain why, as of September 2022, the Maltese headline inflation reached 7.4% while in the euro area the same index reached 9.9%.

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5 The contributions are given by the category-specific HICP series multiplied by the country and year-specific HICP weights. For Malta and for the year 2022 they are 0.2176, 0.2826, 0.0665 and 0.4333 respectively for food, non-energy industrial goods, energy and services inflation. For the same year, for the Euro area are, respectively, 0.2089, 0.2652, 0.1093 and 0.4167. Source: Eurostat.
Euro area countries are characterised by a non-negligible degree of economic heterogeneity in terms of their openness, energy generation and the subsidization of energy prices. Charts 5 and 6 compare the HICP inflation in Malta with the other 18 countries sharing the common currency in September 2022. Chart 5 shows that inflation in Malta was the second lowest in the euro area right after France, which stood at 6.2% and far from the peak value of 24.1% recorded in Estonia. The inflation rate in the other three of the four big countries, Spain, Italy and Germany, stood at 9.0%, 9.4% and 10.9%, respectively.
France is currently experiencing a relatively low energy inflation as it produces electricity domestically mostly from their nuclear power plants without resorting to a massive importation of fossil fuels to keep its productive capacity operative. This, in turn, appears to have a positive effect on the other three categories as witnessed by how the French economy is faring vis-à-vis the other euro area countries: third lowest food inflation and lowest inflation in non-energy industrial goods and services as shown in Chart 6.

In the case of Malta, the inflation sub-indices of non-energy industrial goods and services stood at 6.6% and 7.4%, respectively. The growth rate in these two sub-indices is more pronounced than that of the euro area. On the contrary, Maltese food inflation, at 10%, stands below the euro area average of 11.8%.

Overall, as far as the headline inflation is concerned and considering the recent developments taking place worldwide, Malta is performing quite well in keeping a relatively low level of increase in prices when compared with the other euro area countries. This is particularly clear when considering the Netherlands and the three Baltic republics, which are experiencing sharp increases in energy inflation, with the Dutch energy inflation being as high as 113.8% in September 2022.

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6 As of 2021, France produces around 70% of its electricity through nuclear power while only 10% through fossil fuels. The remaining 20% through renewables sources (Ember (2022)).
2. What is the impact of oil price swings and shipping disruptions in the Maltese economy?

The insularity of the Maltese economy, together with its high degree of openness and heavy reliance on shipping services and on petroleum products, raises the need to quantify the effect that oil price swings and disruptions in the shipping industry exert.\footnote{This study does not represent the first attempt done at the Central Bank of Malta to assess the effect of oil price swings into the Maltese economy. Using STREAM, the Central Bank of Malta’s core macro-econometric model of the Maltese economy (Grech and Rapa (2016)), Borg et al. (2019) demonstrate how oil shocks produce recessionary effects and exert inflationary pressures into the domestic economy. However, the results presented in this policy note should not be considered as fully comparable since Borg et al. (2019) focuses on permanent shocks, whereas this study looks at the effects of transitory shocks.}

The approach taken in this policy note is in the same spirit as Gatt and Ruisi (2022). The empirical analysis is based on a structural vector autoregressive model featuring two blocks: a Maltese block and a world block representing the dynamics taking place at the global level. The world block features the growth rates of industrial production and overall Consumer Price Index (CPI) of the 38 OECD countries that serves as a proxy to global economic activity and prices. It also features the growth rates of the real price of Brent oil and the BDI, the latter proxying the global cost of shipping. Finally, the block includes the ratio between real oil price and BDI to help in the identification strategy aiming at separating the two disturbances. The Maltese block is highly stylised and contains the business conditions index (BCI) developed in Ellul (2016) as a measure of output, as well as the four main HICP components - food, non-energy industrial goods, energy and services.

It is important to emphasise how, given the size of the Maltese economy, the domestic block is influenced by the world block but not vice versa. As such, the global prices of oil and shipping are determined in the world economy with Malta being simply a price-taker.

The data are collected at monthly frequency and cover the period between January 2000 and March 2022. Except for the Maltese BCI and the oil-BDI ratio, all variables are expressed in year-on-year growth rates.\footnote{Appendix 1 shows the data used for the estimation.} The identification strategy, which helps disentangling the two shocks, is inspired by the oil shocks literature (e.g., Baumeister and Peersman, 2013a, 2013b) and is based on sign restrictions.\footnote{More details on the identification strategy are presented in Appendix 2.}

The responses to the two identified disturbances are shown in Chart 7. The top row shows the responses of the Maltese variables, while the bottom one illustrates those relative to the world block. The grey and the red shaded areas, respectively, represent the dynamic responses to an oil and to a shipping disruption shock. The responses are normalised to increase oil or BDI by 10\% in order to better link them with the effect that the current swings on the global market are bringing about.\footnote{The responses to a one standard deviation shock are available in Appendix 3.}
The responses show that a 10% shipping shock has a smaller effect on economic activity and prices than a 10% oil shock. In both cases, the shocks are contractionary for both the Maltese and the global economies and produce upward price pressures. The peak response of world prices takes place after about ten months and reaches values of around 0.5% and 0.1%, respectively, for the oil and shipping disturbances. Regarding the global economy, it is interesting to note that an oil shock raises the BDI while a shipping cost does not put any significant upward pressure on the global price of oil. Finally, it is relevant to focus also on the impact response of the shipping cost in response to a 10% global oil shock. Specifically, the BDI index jumps up by more than the price of oil does. What could help explain such a behaviour is the fact that the identified global oil shock is likely to also include a global demand component (and not just an increase in demand solely on the oil market). As the shipping industry tends to operate at nearly full capacity to preserve its profitability, an abrupt rise in global demand would impact the BDI in two ways: the direct effect coming from the higher demand of shipping services and the indirect effect of increased oil prices.

Turning to the Maltese economy, both disturbances appear contractionary and decrease the business conditions index by -0.07% and -0.25% on impact.

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11 The identified oil shock in this work is meant to be a "broad oil shock" comprising both demand and supply disruptions on the international energy/oil market. The shocks can thus also have a "supply-side nature" and the identification strategy used here is not excluding this possibility.

12 Carriers resort to a variety of ways of reducing their costs and increase their margins during periods of subdued demand. One of these is to cancel sailings and roll over containers should a vessel be under-utilised. Capacity is then re-inserted at a later stage if there is the need to satisfy a higher demand for shipping services (Robert, 2020a, 2020b).
The effect of the two identified disturbances on Maltese energy prices deserves a detailed explanation. It is important to emphasise that the model captures the median response of such a series over the entire sample and not just that relating to a specific point in time. For instance, following an oil disturbance, the full effect on Maltese energy prices is experienced after about ten months with a peak response of slightly more than 2%. This is based on the median response over the estimation period, which runs from 2000 until 2022. It is also relevant to acknowledge that the large credible region around the impact response of HICP energy reflects the different energy policies in place during the past two decades. Interestingly, in the case of disruptions in the shipping industry, energy prices do not significantly respond at any horizon.

In the case of the oil shock the median response for all the other price series appears to be positively affected. Food and services sub-indices gradually increase and reach peak responses of, respectively, 0.5% and 0.45% after about 12 to 16 months. The increase in prices experienced by non-energy industrial goods is more abrupt and takes full effect of 0.5% on impact. The different responsiveness of the sub-indices, non-energy industrial goods on the one hand, and foods and services on the other, might be explained by the observation that a non-negligible portion of food items and services that are locally produced requires the utilisation of energy provided domestically. As such, the slower increase in food and services inflation might be due to the time necessary for the transmission of shocks in the global energy markets to domestic energy prices. Non-energy industrial goods are mostly imported and, therefore, they might be more responsive to developments in the world economy. Finally, the responses of food, non-energy industrial goods and services present a similar shape, when compared with the case of oil, in response to a shipping disruption shock. However, the magnitude of the responses is remarkably smaller. This would highlight the higher responsiveness of the Maltese economy to developments on the global energy markets than those in the shipping industry.

Chart 8 illustrates a scenario that helps to identify the effect of the current policies put in place by the Maltese government regarding energy prices. The scenario assesses what would happen if energy prices were kept unchanged in response to a global oil shock. By doing so, this exercise proxies the fact that energy prices in Malta are fully administered and, as such, the HICP energy sub-index did not respond to the oil shock. This scenario is investigated by imposing that the HICP energy response is bound to be equal to zero throughout the whole response horizon. Chart 8 compares the baseline responses (grey shaded areas) with the counterfactual ones (red dotted lines).

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13 The counterfactual responses are computed by means of the technique outlined in Kilian and Lewis (2011). The credible bands are not reported due to their erratic behaviour. Therefore, the economic intuition is drawn only from the median responses.
The figure clarifies how sheltering the Maltese energy prices from price fluctuations on the global oil market has beneficial effects for both domestic economic activity and prices. More precisely, by looking at the median responses, the business conditions index experiences a less persistent negative pressure as it goes back to almost zero after 15 months. Turning to the inflation sub-indices, food and services HICPs experience, respectively, half and less than half the upward pressure when compared to the baseline case. More precisely, food and services would respectively rise by 0.25% and 0.2% after, respectively, 18 and 12 months as opposed to 0.5% and 0.45% in the case of no government intervention. No remarkable difference is found in relation to non-energy industrial goods prices. A possible explanation could be related to the fact that, as already mentioned, most of the non-energy industrial goods are imported so domestic energy prices would not play any role, at least, upon impact.
3. What is the effect of oil price swings and shipping disruptions on domestic inflation in the current economic environment?

The previous section quantified the effect of the two disturbances to a hypothetical 10% increase in either oil price or BDI. However, the first half of 2022 was characterised by far larger swings in both indicators, thus magnifying their impact on the Maltese economy. Furthermore, it is relevant to consider how the headline HICP in addition to the main sub-indices, is impacted. The responses to the identified disturbances are thus used to run simulations regarding the possible upward pressures that they can exert on the overall Maltese HICP inflation by distinguishing between the contribution of the four sub-indices mentioned so far. This is achieved by multiplying the responses of the four HICP sub-indices in Charts 7 and 8 by their respective weights in the overall HICP.14

Chart 9 shows the response of headline inflation following an oil shock that raises oil prices by 12.16% in the scenario of government intervention to shelter the Maltese economy from increases in energy prices (left) and in the baseline case (right). The choice of this normalisation is based on the observation that 12.16% is the average monthly oil price increase during the last three months available in the sample, i.e., January to March 2022. By doing so, it is easier to compare the estimated responses with the experience obtained during the very recent past.

Chart 9
RESPONSE OF HEADLINE HICP AND ITS SUB-INDICES TO AN OIL SHOCK NORMALISED TO INCREASE THE REAL OIL PRICE BY 12.16% UNDER THE ASSUMPTION OF UNCHANGED ENERGY PRICES (LEFT) AND UNDER THE BASELINE SCENARIO (RIGHT)
(Percentages)

Source: Author’s calculations.

Chart 9 illustrates how sheltering energy prices from the fluctuations in the global oil market helped to lower the upward pressure on HICP inflation. More precisely, the peak response reaches about 0.2%
instead of more than 0.5%. In addition, by looking at the various components, this lower pressure is not only driven by the absence of energy price increases but also by lower growth in the other inflation sub-indices. This is especially evident for food and services with peaks of about 0.08% and 0.09%, respectively, instead of 0.12% and 0.20% as in the baseline case.

Chart 10 depicts the effect of a shock in the shipping industry normalised to raise the BDI by 27.44%. The full effect is reached after roughly 12 to 16 months. Initially, the impact is due to a prompt reaction of non-energy industrial goods and food prices, while the impact on services is felt with a lag. The two main contributors – food and services – both peak at about 0.07% while the small upward pressure due to energy is only marginal.

Chart 10
RESPONSE OF HEADLINE HICP AND ITS SUB-INDICES TO A SHIPPING DISRUPTION SHOCK NORMALISED TO INCREASE THE BDI BY 27.44%
(Percentages)

Source: Author’s calculations.

Chart 11 plots the upward pressure on the headline HICP inflation as a result of a combined shock to shipping and oil that raises the two series by 27.44% and 12.16%, respectively. The left panel of Chart 11 shows the results under the assumption that energy prices in Malta remain unchanged with the aim of providing an indication of the current behaviour of domestic inflation. The right panel, instead, gives the results in the baseline case.

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15 In a similar way to the case of oil, the chosen percentage increase reflects the average monthly growth rate experienced by the BDI over the last three months of available observations.
In the case of government’s commitment to curb energy prices, the combined response reaches a peak of about 0.4% that starts fading away after nearly 18 months. Interestingly, over the entire horizon, the oil and shipping shocks of those sizes would exert a comparable effect on headline inflation. The baseline case, instead, demonstrates how the inflationary pressures would be almost double should the government had not intervened to keep energy prices fixed. In this case, the effect of oil would dominate and would approximately contribute by almost three quarters of the entire effect.
References


Appendix 1 - Data

The Maltese BCI is documented in Ellul (2016). The four HICP inflation indices (food, non-energy industrial goods, energy and serviced) are sourced from Eurostat. As for the world economy, industrial production and consumer price index are sourced from the OECD website. The Baltic Dry Index was downloaded from Bloomberg while the growth rate of the real oil price was obtained as the difference between the growth rates of the nominal Brent oil price obtained from the Federal Reserve Economic Data (FRED) database and the US consumer price index growth rate.

Chart A1
DATA USED IN THE ESTIMATION – JANUARY 2000 – MARCH 2022
(Percentages)

Source: Central Bank of Malta, Eurostat, OECD, Bloomberg, FRED.
Appendix 2 – Identification strategy

Table A1 specifies how both shocks are identified in such a way to slow down global economic activity while pushing up global inflation. What distinguishes the two is the behaviour of the real oil price, the BDI and the ratio between the two. The oil shock makes the real oil price and the Oil-BDI ratio increase, while the shipping shock makes the BDI increase besides pushing down the Oil-BDI ratio. Finally, the Maltese block is completely unrestricted. By doing so, it is possible to let the data speak about the spillovers from the world to the domestic economy.

Table A1
IDENTIFICATION STRATEGY

<table>
<thead>
<tr>
<th>Block</th>
<th>Variable</th>
<th>Oil Shock</th>
<th>Shipping Shock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malta</td>
<td>Business Conditions Index</td>
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<td>?</td>
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<tr>
<td></td>
<td>HICP Food</td>
<td>?</td>
<td>?</td>
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<tr>
<td></td>
<td>HICP Non-Energy</td>
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<tr>
<td></td>
<td>HICP Services</td>
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<td>OECD IP</td>
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<tr>
<td></td>
<td>OECD CPI</td>
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<tr>
<td></td>
<td>BDI</td>
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<tr>
<td></td>
<td>Real Oil Price</td>
<td>+</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>Ratio between Oil price and BDI</td>
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<td>-</td>
</tr>
</tbody>
</table>

Source: Author’s elaboration.
Appendix 3 – Baseline Responses to a 1 standard deviation shock

This appendix helps better understand the effect of shipping disruptions by scaling the responses to a one standard deviation, which is representative of the typical magnitude detected in the data. Chart A2 displays how when adopting such a normalisation the two responses appear very similar to one another. For the world economy the only small difference is the lower upward inflationary pressure. Instead, in the Maltese case, when compared with an oil shock, a disturbance in the global shipping industry is characterised by a slightly less persistent recessionary effect as denoted by the median response of the business conditions index together with a slightly lower peak response of services prices.

Chart A2
RESPONSES TO A 1 STANDARD DEVIATION SHOCK – MEDIAN RESPONSES AND 68% CREDIBLE BANDS. OIL SHOCK (GREY) AND SHIPPING SHOCK (RED). THE RESPONSES ARE IN PERCENTAGE POINTS (EXCEPT FOR THE OIL-BDI RATIO).

(Percentages)

Source: Author’s calculations.