

# SIRIUS

Skills and Integration of Migrants,  
Refugees and Asylum Applicants  
in European Labour Markets

## **Introduction to the Guidelines for the Econometric analysis and scenarios<sup>1</sup>**

The present software is based on econometric analysis, using real-time data, regarding the sectoral output and sectoral labour of each SIRIUS economy. The aim of this software is to provide the user with the opportunity to conduct her own independent scenario analysis in order to unveil how a percentage change (%) in a sector of an economy would impact the labour capacity of the rest of the economies sectors'. In other words, the present software is capable to unveil the “labour absorbing” sectors of each economy. In this context, at a first step, one has to select the economy of interest whereas, at the second step, one has to enter the percentage change (%) in the sectoral production of these economies. Therefore, if for example, in a policy context, we have valid reasons to believe that the manufacturing output of UK will increase by, approximately, 5% due to more beneficial tariff agreement with some third country, then we have to enter this 5% increase in the manufacturing sector of UK in Step 2. After the model execution and the pdf file generation, we should focus on identifying the statistically significant deviations of the OIRFs from the equilibrium position, i.e. zero line, as instructed in the example. The statistically significant deviations indicate the “labour absorbing” sectors of the economy, due to the percentage change given in the previous step. Therefore, if - for example - the 5% increase in the manufacturing sector of the UK yields OIRFs, which are statistically significant only for the UK tertiary sector, this, in a policy context, implies that the UK tertiary sector is considered to be “labour absorbing”. This, in turn, implies that the increased production in manufacturing will create a spillover effect in the UK tertiary sector, creating more job opportunities in this sector due to the increased demand for more specialized workers in the manufacturing sector.

---

<sup>1</sup> Any further requests on how to interpret the result of the software should be directed to: Dr. Spyridon Stelios at: [stelioss@central.ntua.gr](mailto:stelioss@central.ntua.gr).

## **Econometric Analysis' Guidelines**

In order to perform *scenario analyses* for the “labour absorbing” economies in the SIRIUS project, please follow the steps described below.

**First Step:** Select the economy of interest by clicking on the top of the page among the economies of: Czech Republic (CZ), Denmark (DK), Finland (FI), Greece (GR), Italy (IT), Switzerland (CH) and United Kingdom (UK).

**Second Step:** Fill in the percentage change (%) of the relevant magnitudes for the sectors of the economy that you have selected in the first step. Please note that in case you have selected, in the first step, one of the economies of Czech Republic (CZ), Finland, (FI) or Switzerland (CH), then it is also required to fill in the percentage changes for the various sectors of the United Kingdom (UK) as well, since the United Kingdom (UK) has been found to directly affect these economies.

**Third Step:** Select the “MODEL EXECUTION” button at the end of the page and wait for the generation of the relevant PDF file. Once the file is generated, a link will appear on the screen that will allow you to download the generated file.

**Fourth Step:** Select the link that appears in the screen and download/open the PDF file generated.

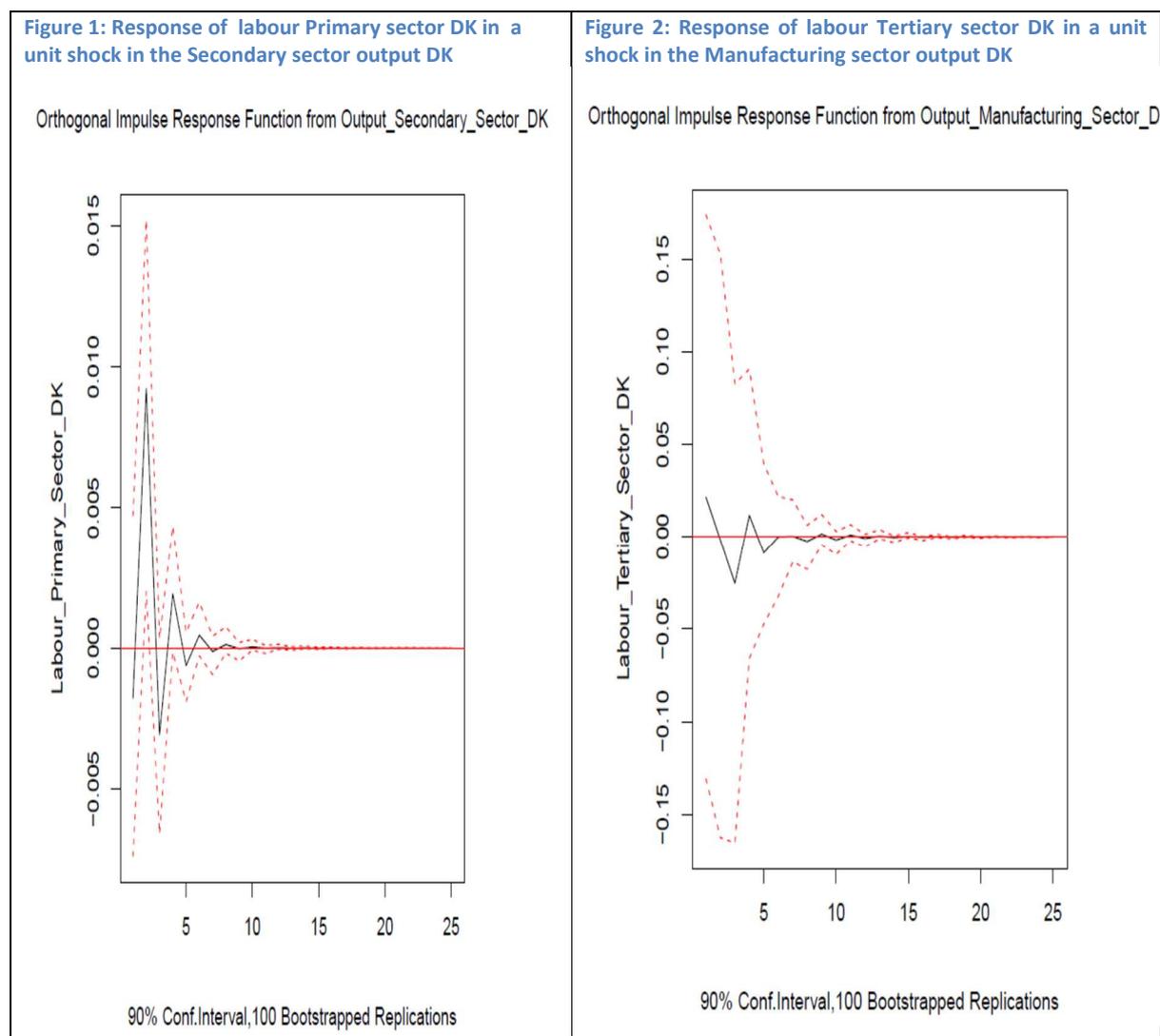
## **How to read the generated results**

The generated PDF files present the orthogonalized impulse response functions (OIRF) for impulses in the Output *\_name\_Sector\_identifier*, where *name* is the name of the sector, i.e. Primary, Manufacturing, Secondary and Tertiary, and *identifier* is the name of the selected economy in the first step, i.e. CH, CZ, FI, UK. The responses presented in the PDF file generated are the responses of Labour *\_name\_Sector\_Identifier*. The horizon of the responses is set to 24 months, i.e. two years. A given sector is characterised as being “labour absorbing” if its OIRF dashed-line crosses the x-axis (i.e. the zero line).

## **Example**

Consider the baseline scenario, i.e. zero percentage (0%) change, for all the sectors of the Danish economy. If we implement, using the software, the model execution, then a PDF file

will be generated. Based on the generated file, the following figures present the OIRFs. Based on Figure 1, we can infer that a unit shock (equal to one standard deviation) in the output of the secondary sector of the Danish economy, has a positive and statistically significant impact on the labour of the Danish primary sector. This can be identified by the fact that the lower red dashed line in Figure 1, presents a point where it crosses the zero line. This means that the zero line does not belong to the confidence band of the OIRF. Therefore, based on our modelling framework, this statistically significant deviation signifies that the Primary sector of Denmark could be considered as being a “labour absorbing” sector.



On the other hand, based on the OIRF presented in Figure 2, we do not witness any statistically significant deviation from zero (0), regarding the labour of the Tertiary sector of the Danish economy, due to unit shocks in the output of the Manufacturing sector of Denmark.

This is due to the fact that the red dashed lines (both upper and lower), do not cross the x-axis. In this case, based on our modelling framework, the tertiary sector of Denmark could not be considered as being “labour absorbing”, based on Figure 2 OIRFs.

To sum up, here, as an example, we presented and analysed two (2) OIRF figures for the Danish economy. However, any scenario analysis for the Danish economy will generate sixteen (16) figures, with the responses of each Danish sector’s labour in unit shocks (equal to one standard deviation) in the Danish sectors’ output. Therefore, for the correct interpretation of the results, a similar analysis for each figure should be conducted in order to identify the “labour absorbing” sectors of the economy, if any.