

Measuring international orientation of enterprises

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Introduction

Economic globalisation and the participation of domestic enterprises in international trade are important drivers for economic growth and thus evidence about enterprises engaged in international trade is important for policy-shaping. Recent research has shown that enterprises engaged in international trading differ substantially from enterprises only being active on the domestic markets.¹ This research has only to a lesser extent been based on internationally harmonised firm-level datasets.

This article utilises the results of two projects within the European Statistical System; the ESSnet on Measuring Global Value Chains² conceptualizing internationalisation of enterprises and a project establishing tailor-made national databases with a harmonised contents to be used for Micro Data Linking (MDL) in nine European statistical offices. This method allows for analysis based on firm level data of the internationally trading enterprises and their possible heterogeneity related to type of trading or ownership.

The international orientation of enterprises in terms of exporting is of special focus for policy makers due to the potential job creation in the exporting enterprises due to demand from markets abroad. Therefore, this article further analyse exporting enterprises and their employment and economic performance compared to non-exporters. Furthermore the exporting enterprises are broken down by partly type of ownership (being domestic or foreign owned) and partly by type of international trade (being a two-way trader, both exporting and importing, or only being an exporter).

Methodological approach

As European business statistics to a large extent is based on common EU regulations, the central business or economic statistics such as structural business statistics, international trade in goods or services statistics or statistics on foreign affiliates (FATS) are harmonized and thus comparable across the 28 member states of the European Union. However, due to the stove pipe production process of official statistics, i.e. each statistics is produced in isolation from one another, these micro data all focus on a limited number of aspects of the firm. But to analyze the impact of globalization on European firms, we need to be able to use and analyze all these existing data sets simultaneously by constructing internationally harmonized statistical databases consisting of variables from different statistical sources to be used for micro data linking.

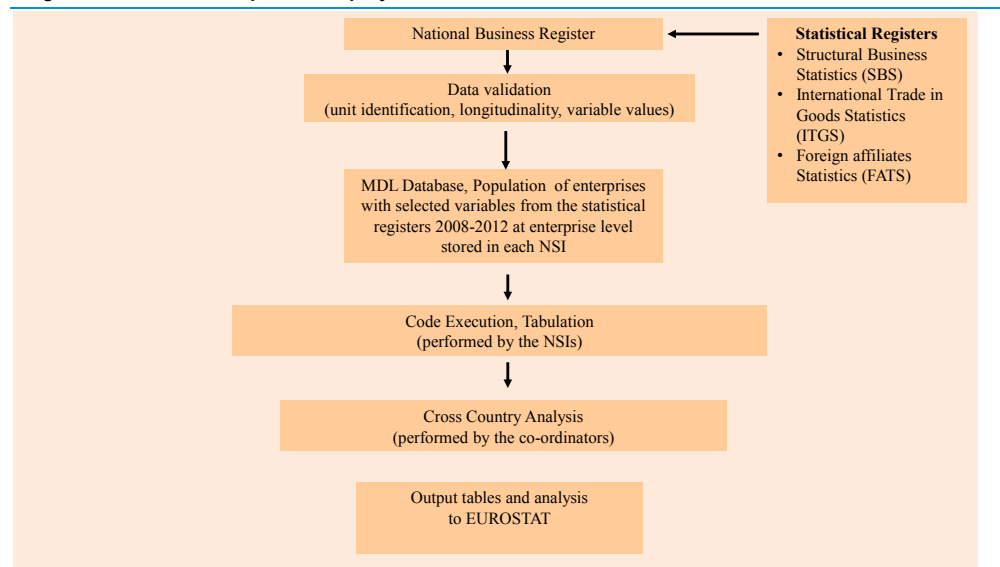
Therefore Eurostat and the European NSIs have carried out several MDL projects in order to 'modernize' the European enterprise and trade statistics.

¹ M. Melitz, "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity", *Econometrica* 71(6), 2003 and Helpman, E. et al., "Export versus FDI with Heterogeneous Firms", *The American Economic Review* 94(1), 2004

² http://ec.europa.eu/eurostat/cros/content/global-value-chains-0_en

The main driver behind this development is twofold. Firstly, the analysis of cause and effect requires linking different types of variables at enterprise level which implies breaking through the traditional stove pipes of statistical production. Secondly, there is the practical argument of lowering the respondent burden on enterprises. Furthermore, the MDL approach increases the return on investment for the existing detailed micro data sets, and finally it also makes that the statistics can be more adequately used to guide policy makers.

Figure 1 Organisation of the European MDL project



Micro data linking (MDL) has been proven to be a successful analytical strategy in the development of statistical information on the international dimension and impact of economic globalization. MDL serves as an appropriate method to analyse the current most addressed research questions on cross border activities (‘what kind of enterprises are trading’ instead of ‘what do countries trade’), firm heterogeneity (‘how are different types of enterprises contributing to GDP’) and the organization of cross-border production processes (‘what parts of the business organization move up or down the value chain’).

The concept of international orientation of enterprises

The growing demand for information on determinants and effects of globalization requires the development of a standardized and harmonized concept of the international orientation of an enterprise or enterprise group. This international orientation is based on the dimensions type of trader, ownership and type of investor³. This concept enables statisticians to analyze the national and international component of business dynamics in terms of economic growth, employment and innovation, with respect to the different types of statistical units. As such this concept is now also part of the

³ Luppens, M. and Van Brummelen, Business Registers and the Concept of International Orientation, Paris: OECD. 2008

international work on global value chains, and is also referred to as ‘globalized enterprise’⁴.

The general definition of the concept of international orientation in many cases is restricted to the dimensions of type of trader, geography and ownership⁵. International orientation of an enterprise is then defined as the intensity of international connectedness of an enterprise in terms of the presence of trade (imports, exports both goods and services) and the degree of influence and control across borders.

In practical terms this implies that the Business Register (or its derived analytical datasets) should contain a basic set of dummy variables indicating whether or not the enterprise is active in respectively imports, exports of goods, and information on enterprise structure. Combined with information on the origin and destination of trade at EU level, the basic breakdown for ‘international orientation’ is outlined in figure 2.

Figure 2 Breakdown of international orientation

Type of trade activity	Two-way trader			Exporter			Importer			Non-trader
	Intra- and extra-EU	Extra-EU only	Intra-EU only	Intra- and extra-EU	Extra-EU only	Intra-EU only	Intra- and extra-EU	Extra-EU only	Intra-EU only	
<i>Geo. spread of trade</i>										-
Ownership										
Domestically controlled without foreign affiliates										
Domestically controlled with foreign affiliates										
Foreign controlled (with/without for. affiliates)										

Using this classification of enterprises will enable users to make a distinction between nationally oriented and internationally oriented enterprises, allowing for identification of relevant subpopulations which form the basis for comparisons and analysis of globalization effects.

Profiling exporting enterprises

This section illustrates some of the analytical possibilities by using the concept of international orientation and by MDL and provides insights into the characteristics and performance of exporting enterprises⁶ compared to non-exporting enterprises, especially by analysing the performance of exporters compared to non-exporters in terms of employment and value

⁴ Nielsen, P.B. & Luppens, M. (2012). Globalised enterprises: a European approach, *Presentation to the OECD Workshop on TEC and GVCs 25-26 October*. Paris: OECD 2012 and ESSnet Measuring Global Value Chains. *Report on Experimental Micro Data Linking Indicators (D1.4)*. Luxembourg: Eurostat 2013

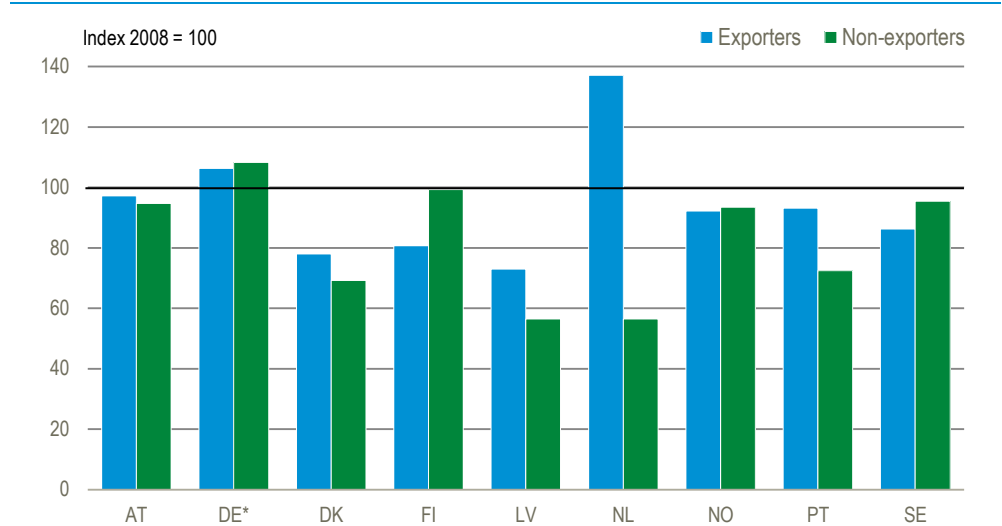
⁵ Linkages related to cross border financial flows are out of scope at this moment, as not all information is available at the level of the individual enterprises.

⁶ Exporters are defined as enterprises that have an export greater than 5.000 EUR and at least 5 pct. export intensity (export share of turnover)

added creation. Furthermore the chapter analyses exporting enterprises by type of ownership (foreign/domestically owned) and type of trade (two-way/exporters only).⁷

The analysis is based on reference years 2008 and 2012 in order to analyse the development since the economic crisis started. The focus will be on manufacturing (NACE Rev. 2 sector C) as only international trade in goods statistics is included.

Figure 3. Development in employment (FTE) in exporters vs. non-exporters 2008 to 2012, manufacturing



* German figures refers to 2009 instead of 2008

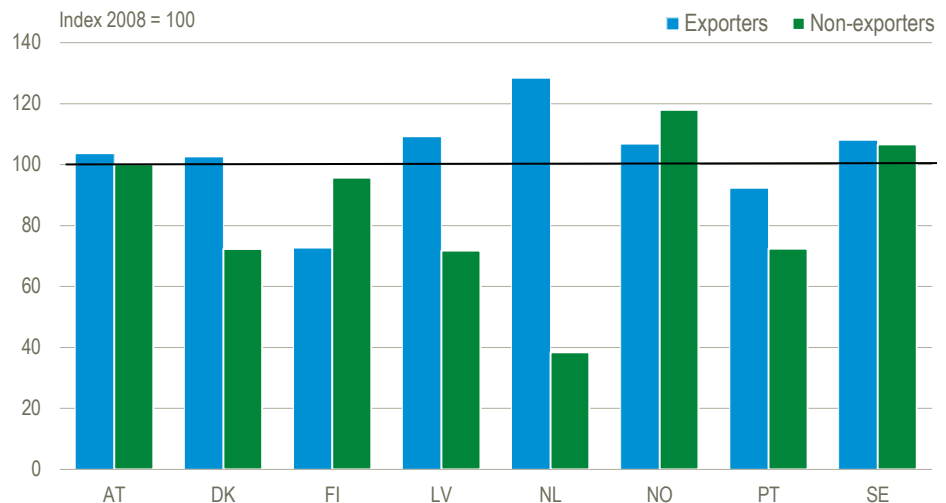
For all countries except Germany, the employment in both exporting and non-exporting enterprises has been decreasing from 2008 to 2012. The figure indicates that for the majority of the included countries, non-exporting enterprises have lost more employment compared to the exporting enterprises. In Finland, Sweden and Norway, however, the exporting enterprises have lost more employment than the non-exporting enterprises.

Although the exporting enterprises in none of the countries except Germany have regained the pre-crisis employment level, they have regained and even overtaken the pre-crisis level for value added creation in nearly all countries, see figure 4. The results show that the exporting enterprises have increased their productivity more than the non-exporting enterprises in most countries.

Figure 4.

⁷ The results from the MDL project is published by Eurostat: Statistics Explained http://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_comparing_enterprises_which_trade_internationally_with_those_who_do_not and http://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_on_small_and_medium-sized_enterprises

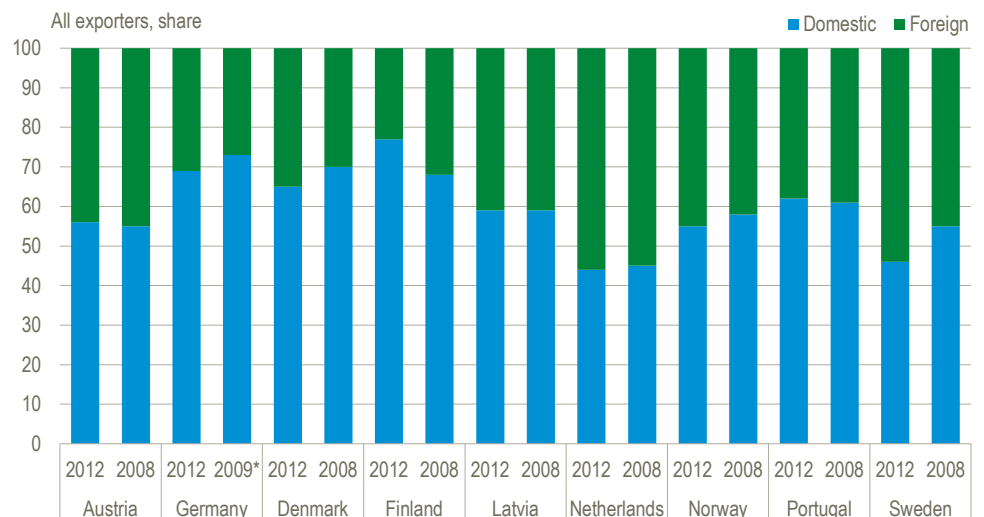
Development in value added in exporters vs. non-exporters 2008 to 2012, manufacturing



* German figures refers to 2009 instead of 2008

In most of the countries a relative large share of exports are generated by foreign owned enterprises but different development patterns can be found for importance of foreign owned enterprises, see figure 5. In the Northern European countries (Germany, Denmark, the Netherlands, Norway and Sweden) the domestically owned enterprises have lost export share since the financial crisis, while in Finland the domestically owned enterprises increased their share of exports substantially. Smaller increases can also be found in the remaining countries.

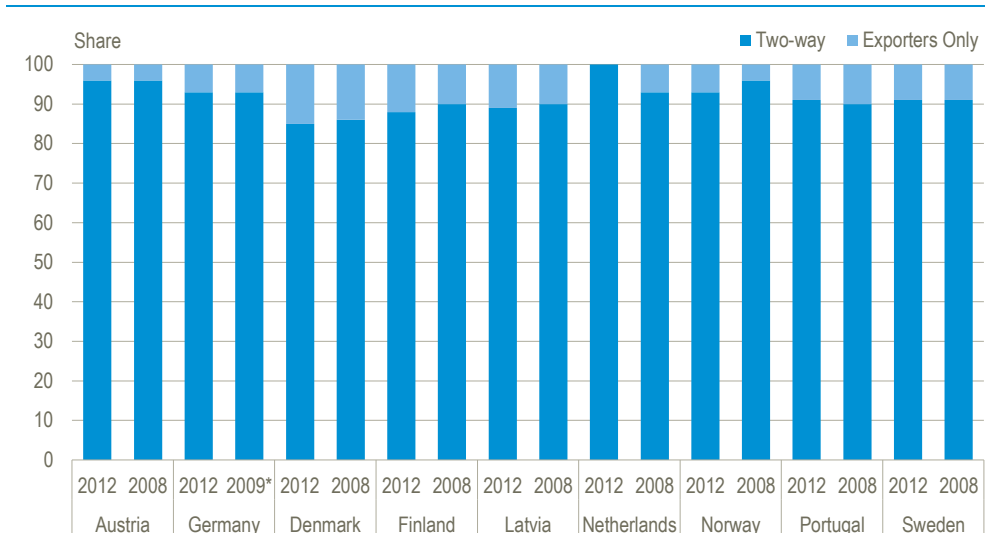
Figure 5. Export shares, domestic vs. foreign. 2008 and 2012, manufacturing



* German figures on domestic enterprises refers to 2009 instead of 2008

Interestingly, the large majority of exporting enterprises are also importers as the so-called two-way traders in all countries stands for 90 per cent or more of total exports, see figure 6. This share has been stable during the crisis indicating that international trade in terms of both exports and imports to a large extent is carried out by a smaller group of enterprises being internationally oriented and largely involved in global value chains.

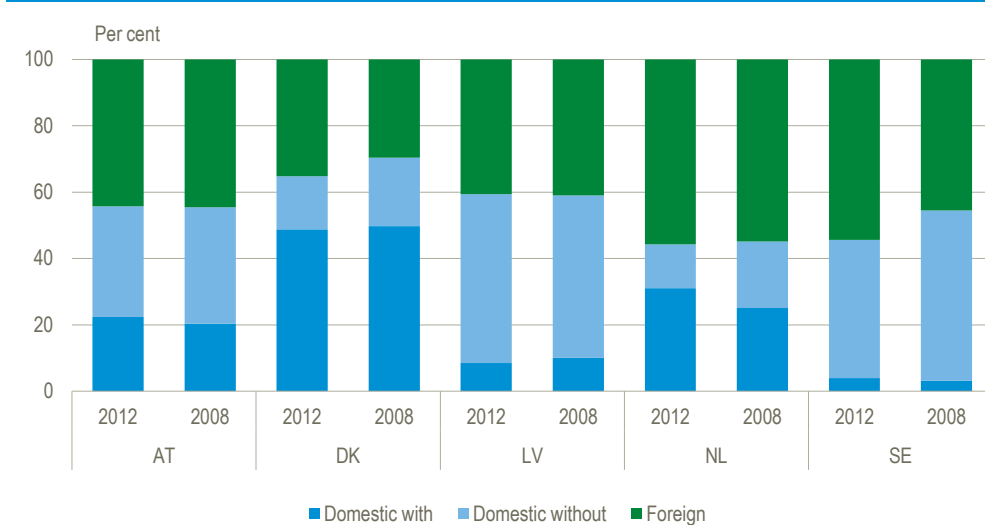
Figure 6. Two-way traders vs. Exporters only, (export shares) 2008 and 2012, manufacturing



* German figures on domestic enterprises refers to 2009 instead of 2008

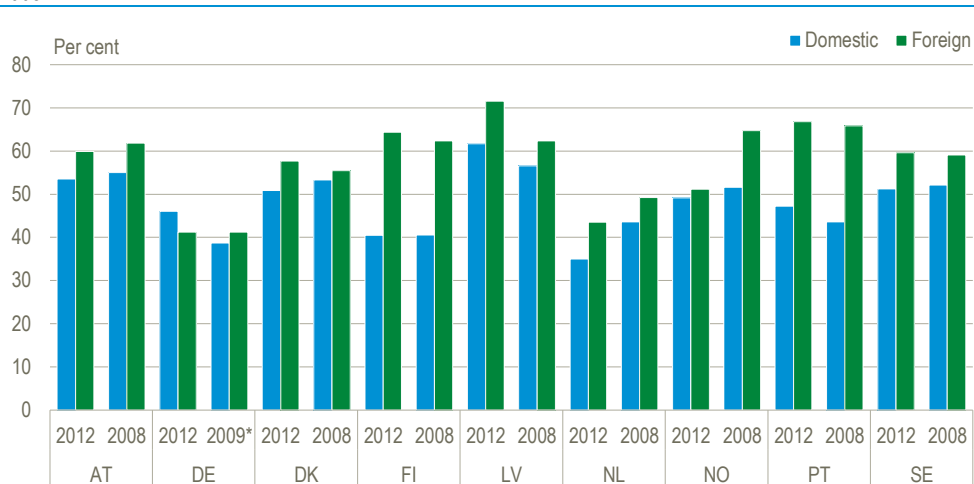
For some of the participating countries it was possible to dig one step further and compare the foreign owned enterprises to domestic owned ones with and without affiliates abroad. The results show that – except for Latvia – the main share of exports in 2012 is generated from multinational enterprises (MNEs) (being domestically or foreign owned); from 84 per cent in Denmark to 58 per cent in Sweden, cf. figure 7.

Figure 7. Export shares by control (Foreign/Domestic ownership), Manufacturing 2012 and 2008



As revealed in the trader analysis, when it comes to the domestic owned enterprises, Denmark shows a quite different pattern from the other participating countries. Almost 50 pct. of the total exports are generated by domestic enterprises with foreign affiliates due to some Danish strongholds in specific industries such as pharmaceuticals. Furthermore, from 2008 to 2012 Danish domestic owned enterprises without foreign affiliates fell with 23 pct. In the same period domestic owned enterprises with foreign affiliates only fell 2 pct.

Figure 8. Export intensity (export/turnover) by control (Domestic/Foreign ownership), manufacturing 2012 and 2008



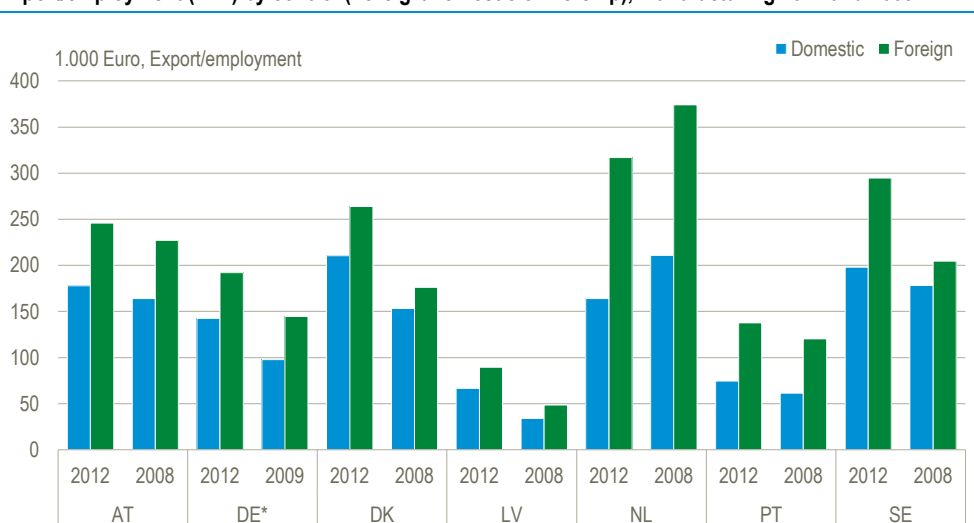
* German figures refers to 2009 instead of 2008

Export intensity is an important indicator of the degree of enterprise involvement in foreign trade. In general, with an export intensity close to 50 pct. or more for most countries, figure 8 clearly illustrates how vital exports are to the manufacturing enterprises across countries.

Furthermore, the figure illustrates that the export intensity in manufacturing, not surprisingly, is higher when it comes to foreign owned enterprises than domestic owned. This is especially the case for Finland and Portugal who show a significant difference between domestic and foreign owned enterprises.

Finally, in most of the participating countries, both domestic and foreign owned enterprises show a small increase or a stable development in the export intensity from 2008 to 2012, only Latvia, and Germany shows a slightly higher increase from 2008 to 2012.

Figure 9. Export/employment (FTE) by control (Foreign/Domestic ownership), manufacturing 2012 and 2008



* German figures refers to 2009 instead of 2008

Figure 9 illustrates that foreign owned enterprises generate more exports per employee than domestic owned enterprises. Also regarding this indicator, an

increase from 2008 to 2012 can be observed. However while the level between domestic and foreign owned enterprises for most countries has not changed much from 2008 to 2012, Denmark and Sweden present a larger increase in generated exports pr. employee in foreign owned enterprises than domestic owned from 2008 to 2012.

Conclusion

The Micro Data Linking approach has proven very promising, especially establishing new knowledge about the internationalisation of enterprises, firm heterogeneity and the impact of heterogeneity on the performance of enterprises. But a number of methodological issues need to be explored further before European statistics based on MDL can be an integrated part of the statistical production.

Especially the issue of linking different samples with different weights and how to calibrate the weights need to be analysed in depth to come up with harmonised guidelines for future production of statistics based on MDL. Furthermore, one of the strengths of this approach is also to include the longitudinal identity of enterprises in the data sets established when analysing impacts on performance. Identity over time is a complex issue as M&A, spin offs or other demographic events need to be taken into account when analysing the performance of enterprises over a longer time period. This is an area within business statistics which is not fully elaborated yet.

Another issue influencing the analyses is the issue of enterprise group relations. Often a special purpose entity for export purposes is established and the current European business statistics do not operate with the group as a statistical unit.

Finally the issue of sample design need to be addressed focusing on the MDL approach. National statistical offices – in order to minimise the respondent burden on the individual enterprise – practise a negative co-ordination between the different statistical domains but in order to maximise the benefits from the data collection by furthering MDL, positive co-ordination of sample populations should be introduced. This implies that the same enterprises should be included in several surveys – at least for a certain period - in order to improve the matching rate – and thus the number of actually observed values at enterprise level – across the statistical registers.