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Update of the System of National Accounts 2008 and Balance of Payments Manual 6th Edition – Globalisation**Identifying economic ownership of Intellectual Property Products: The German experience using the Guide to Measuring Global Production Decision Tree**Prepared by the German Federal Statistics Office¹*Summary*

The identification of economic ownership is challenging, especially for Intellectual Property Products (IPPs), which because of their intangible nature, can be easily transferred across borders. Determination of economic ownership gets even more challenging when dealing with multinational enterprises (MNEs) organising their economic activity irrespective of borders or territories. The Guide to Measuring Global Production (GMGP) presents a decision tree to identify economic ownership of IPPs inside MNE groups, based on related transactions from source statistics. This paper presents the experience of Federal Statistical Office of Germany in using the presented decision tree for the allocation of IPPs ownership.

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I. Introduction

1. In the 2010 European System of Accounts (ESA 2010) intellectual property products (IPPs) were defined as “the result of research and development, investigation or innovation leading to knowledge, use of which is restricted by law or other means of protection” (Eurostat, 2013, paragraph 3.132). In national accounts (NA), balance of payments as well as business statistics significant domestic as well as cross-border flows can be attached to them. However, the recording of related transactions may change significantly depending on which units are identified as the economic owner of an intellectual property products (IPP).

2. In its Guide on Measuring Global Production (GMGP), the United Nations Economic Commission for Europe (UNECE) describes the characteristics and the challenges of “ownership of intellectual property products inside global production”. Furthermore, recommendations are given based on a number of examples and case studies (UNECE, 2015). The GMGP acknowledges that determining economic ownership gets even more challenging when dealing with multinational enterprise (MNE) groups, which organise their economic activity irrespective of borders or territories. As defined in ESA 2010, “the economic owner of an asset is not necessarily the legal owner. The economic owner is the institutional unit entitled to claim the benefits associated with the use of the asset by virtue of accepting the associated risks” (Eurostat, 2013, paragraph 7.17). However, as IPPs are not physically constrained and their ownership can be easily transferred across borders, the identification of the economic ownership presents a challenging issue. Generally, the GMGP defines three units potentially as the economic owner of an IPP:

“a) As the ultimate beneficiary, the parent company often finances directly or indirectly (via an affiliate) the acquisition or production of the IPP (i.e. the original);

b) An affiliate that uses the IPP in its production of other goods and services (excluding generating IPP copies, licenses to reproduce, or licenses to use the IPP);

c) Another intermediary affiliate, which could be the original producer (such as a dedicated R&D or software development unit) of IPPs, or a so-called Special Purpose Entity (SPE) acting as the legal owner of IPPs and obtaining the revenues of IPP copies or licences to use or reproduce” (UNECE, 2015, 4.3).

3. The GMGP further offers a decision tree to identify economic ownership of IPPs inside MNE groups, based on related transactions from source statistics. In the global consultation for guidance note G.5 the Joint Globalization Task Team (GZTT) invited institutions to share results if they have been testing the GMGP decision tree. The present paper therefore describes the experience DESTATIS has made applying the GMGP Decision Tree in the course of the work on the transversal gross net income (GNI) reservation on globalisation, which has been placed by the European Commission for all European member states (MS) in April 2020. As a result of Eurostat’s assessment in the GNI own resource verification cycle 2016-2019, the European Commission requested member states (MS) to scrutinise the correct recording of core globalisation related phenomena in NA. The application of the economic ownership principle for the intellectual property assets was one of these and MS were specifically asked to make use of the GMGP (Eurostat, 2020).

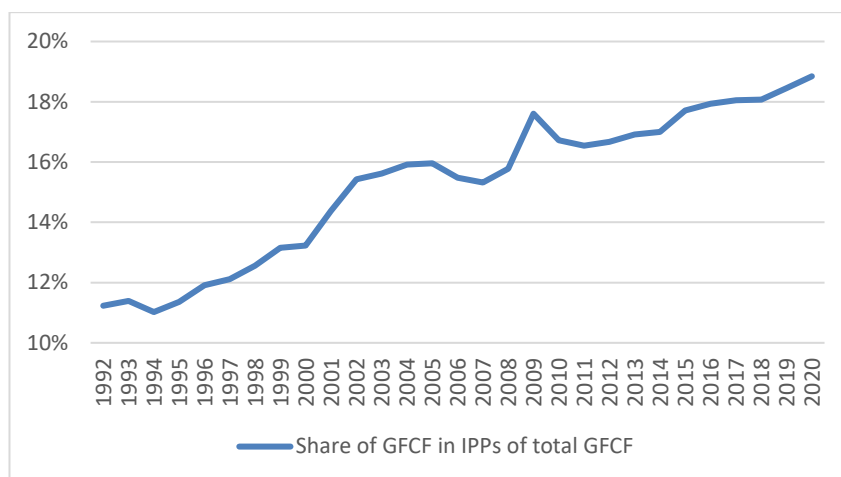
II. Intellectual Property Products in German National Accounts

A. Intellectual Property Products in the German gross fixed capital formation

4. With the introduction of the 2008 SNA and the ESA 2010, expenditure for research and development (R&D) is no longer treated as current expenditure, but rather as a capital formation (Eurostat, 2013, paragraph 3.82). The collection and reporting of data on R&D are generally inspired by the so-called Frascati manual of the OECD (OECD, 2015). Eurostat has published a guideline for the respective calculations (Eurostat, 2014).

5. In recent years, the share of German gross fixed capital formation (GFCF) in IPPs of total GFCF in Germany has increased steadily (see Figure 1). In 2020, the share of GFCF in R&D of total GFCF in IPPs accounted for 76 %.

Figure 1
Share of GFCF in IPPs of total GFCF in Germany for the years 2000-2020², percentage value



B. Calculating German gross fixed capital formation in Research and Development³

6. The starting point for the calculation is the internationally agreed broad definition of GFCF in R&D, according to which all internally or externally produced R&D services count as GFCF in IPPs. The only exception are R&D purchases of Statistical Classification of Economic (NACE) industry 72 ‘R&D’: These purchases are reported as intermediate consumption, as it is assumed that NACE 72 allows externally procured R&D to flow into its internal R&D services and that these are then recorded as capital formation by the customer. Due to data availability, no distinction is made between successful and unsuccessful R&D. The central task of the calculation of GFCF in R&D for S.11 is to make the transition from domestic R&D outputs and thus domestic income generation to the (final) use of R&D services by taking into account domestic and foreign trade in R&D. In principle, the amount of GFCF in R&D – i.e. the sum of purchased and own-account GFCF in R&D – of an industry or a sector differs from its R&D output by the trade balance.

7. The calculation of GFCF itself is performed annually (DESTATIS, 2022). There are two major data sources for R&D expenses of enterprises in the German statistical system: the biennial surveys by the “Stifterverband für die Deutsche Wissenschaft” that show internal and external R&D expenses and the balance of payments statistics by the German Central Bank (Deutsche Bundesbank). The latter completely covers cross-border transactions with R&D (above a threshold of EUR 12,500) every year, not differentiating by sector.

² Calculations for 2018-2020 are based on preliminary results.

³ As the majority of MNE groups and their affiliates are assigned to the non-financial corporation sector (S.11), clarifications regarding the calculation of GFCF in R&D in this paper are limited to that sector.

III. Identifying economic ownership using the Guide to Measuring Global Production decision tree

A. German approach

8. Following the approach Forte (2021) described for the Italian pilot exercise in 2018, DESTATIS developed a similar approach, connecting questions posed in the GMGP decision tree to existing data sources. While in the course of the work on the transversal GNI reservation on globalisation a number of selected MNE groups had to be scrutinised, DESTATIS used that sample for the testing of the GMGP decision tree for the following reasons.

9. First, as described above data sources for IPPs in Germany are provided to DESTATIS by different institutions (Stifterverband der Wissenschaft; German Central Bank), typically compiled based on the needs of German NA. Hence, data is mostly not available on the level of individual institutional units or for specific transactions. However, for the work on the transversal reservation on globalisation the legal basis as well as a coordinated procedure for the data exchange between involved institutions was established, which resulted in a particularly solid database for selected MNE groups.

10. Second, as a main obligation in the work on the GNI reservation was to share relevant data with other European statistical offices or central banks, it was possible for some cases to receive further insights about the economic activities of some MNE groups in other MS.

11. Third, based on the experience and the conclusion of Forte (2021) that the decision tree seems rather suitable “as a guiding tool for supporting analysis carried out through a case study on a single MNE” DESTATIS applied the GMGP decision tree to selected cases.

12. Data sources that were used in the scrutiny included: surveys by the “Stifterverband für die Deutsche Wissenschaft” (SV), balance of payments data recorded by the German Central Bank, data from structural business statistics (SBS) and public sources such as annual reports, financial statements, homepages and the European patent register as well as the German patent register. Following Forte (2021) these data sources were used to answer the questions posed in the different tree nodes in the GMGP decision tree (see table 1).

Table 1

Question in each single node and relevant data sources

<i>Node</i>	<i>Control/ownership of the unit</i>	<i>Is the unit part of an MNE?</i>	<i>Data sources</i>
1	Production of the IPP	Is the unit an IPPs producer?	SV, SBS, public sources
2	Type of producer	What is the main kind of activity of the unit?	Business Register (NACE REV. 2 - ISIC REV. 4)
3	Use of IPPs	Is the unit expected to use the IPPs in the production process?	Public sources
4.1	Income from royalties	Does the unit receive income from royalties or licenses to use IPPs?	Balance of payments
4.2	Expenses for royalties	Does the unit pay royalties or for licenses to use IPPs?	Balance of payments
5	Compensation for R&D	Does the unit receive compensation for IPPs development?	Balance of payments
6.1	Income from selling IPPs	Does the unit receive income from selling IPPs?	Balance of payments
6.2	Expenses for buying IPPs	Has the unit expenses for buying IPPs?	Balance of payments

B. Results

13. DESTATIS tested the GMGP decision tree for a number of selected MNEs. Below, the corresponding results and open issues are presented, taking different characteristics of the analysed units into account.

1. Large and complex cases

14. In the case of large and complex cases, e.g. parent companies, the exercise showed that the application of the GMGP decision tree is not feasible. More specifically, when looking at large units of MNE groups, their business activities are sufficiently complex making it difficult and sometimes impossible to link them to specific IPPs. That issue becomes even greater, when units do operate in different NACE divisions or even different NACE sections. Finally, data on IPP flows are not available on the level of individual transactions in the German statistical system. Hence, reported data do not refer to a single, unambiguously activity, which makes it difficult or even impossible to apply the GMGP decision tree.

2. Small units

15. By contrary, when business activities of a certain unit could be specified and limited to the use of certain IPPs it was possible to draw conclusions regarding economic ownership based on general assumptions. Such legal units with a distinct business activity are for example R&D units or units that manage all royalties and licenses of an MNE group. In the course of the exercise, it was therefore possible to apply the GMGP decision tree and to draw conclusions from it. Most notably, it was of great use for the progress of the analysis of certain MNE groups in the scrutiny of the GNI reservation of globalization.

3. Data availability

16. Besides limitations of the GMGP decision tree regarding large and complex cases, some general issues were identified in the course of the exercise. More specifically, the data basis in the German statistical system in this field is too limited to derive solid results. First, because the reported data is not disaggregated enough to relate certain transactions and IPPs to each other and second, because units do not have specific reporting obligations regarding their ownership values of intangible assets following from European regulations.

17. Another sound source of information is the financial reporting of MNEs. However, the consolidated financial statements of an MNE group do often not allow conclusions on a deeper level, e.g. conclusions on the IPP-related expenditure of a certain unit of an MNE group. The annual accounts of individual legal units could provide information that is more useful. Unfortunately, detailed annual accounts of individual legal units are sometimes rarely available because they are exempted from the disclosure requirements. In some cases, a direct contact with the MNE group can provide the information that is needed to fully apply the decision tree.

4. Remaining open issues when applying the Guide to Measuring Global Production Decision tree

18. Besides the issues that could be identified for the German statistical system, there are still some general open questions regarding the application of the GMGP decision tree.

19. A first obstacle concerns the utilization of derived results. More specifically, what is the consequence of applying the decision tree? When a National Statistical Institute (NSI) concludes that a certain unit is not the economic owner of an IPP, it remains unclear how the NSI in that case determines the “real” economic owner, if that is a foreign unit. Even if there are clear hints that a certain foreign unit is the “real” economic owner, international procedures need to be established to get in contact with other NSIs to correct the statistical data in an adequate way. There needs to be adequate coordination involving all relevant institutions to ensure a consistent statistical recording across all countries.

20. In recent years, the European Statistical System has launched a number of different initiatives to intensify the data exchange and cooperation between NSIs regarding globalization activities of MNE groups (DGINS, 2019). Examples include the

EuroGroupRegister, European Profiling, the Early Warning System (EWS) and the European Network of MNE groups Coordinators (MNEnet). Nevertheless, established procedures and legal frameworks to share microdata remain not adequately elaborated.

21. Another instrument that has proved to be an effective response to potential problems that large and complex MNE groups can pose to official statistical systems are so-called Large Cases Units (LCU) (Hussain and others, 2019). In particular, the LCUs in Ireland and the Netherlands, which have been in operation for years, are considered as examples of successful LCU work (Vennix, 2012). Many NSIs are therefore setting up their own specialised units across Europe. DESTATIS has also established an LCU for the quality assurance of official economic statistics in 2020 and is supporting an expansion of the international cooperation between LCUs (Ahlborn and others, 2021). However, such units do not solve the issue of existing data gaps concerning specific information on IPPs.

IV. Conclusion

22. The German experience in applying the GMGP decision tree has led to differing results. Acknowledging the data basis in the German statistical system, the GMGP decision tree has proven to be useful when determining economic ownership of IPPs for small units with certain business activities. We will continue to make use of the decision tree in our analyses of MNE groups, e.g. in the work of the German LCU, and consider it for a limited range of units as a useful instrument.

23. When it comes to large and complex units, the overall data basis in the German Statistical System as well as in the European Statistical System is too limited to apply the GMGP decision tree. Although a direct contact with the MNE group can provide the necessary information to fully determine economic ownership, it is not possible to ask all MNE groups in the economy for that information.

24. Overall, in practise we do therefore currently not support the general application of the GMGP decision tree. We further believe that European regulation regarding the collection of IPP data is needed to improve the current situation, not only in Germany. This includes the data collection of IPP assets as well as information regarding the ownership. If a sufficiently large and standardised data basis in the Statistical Systems is ensured the GMGP decision tree can be a useful tool.

25. Finally, we believe that even a successful application of the GMGP decision tree does not solve remaining obstacles regarding the utilisation of corresponding results. This includes legal limitations for the international exchange of microdata as well as missing frameworks for the international clarification of questions concerning MNE groups. We believe that it would be of great use to strengthen the cooperation between LCUs or similar organisational units and to create the therefore needed adequate legal und organizational frameworks.

References**[English only]**

- Ahlborn, M., Draken, F. & Manthe, V. 2021. Quality assurance in official statistics: Large Cases Unit. In: WISTA Wirtschaft und Statistik. Issue 2/2021, p. 31 et seq.
- DGINS (Conference of Directors General of the National Statistical Institutes). 2019. Bratislava Conclusions. Available at www.dgins2019.sk
- Eurostat. 2013. European System of Accounts (ESA) 2010.
- Eurostat. 2014. Manual on Measuring Research and Development in ESA 2010.
- Eurostat. 2020. GNI reservation on globalisation – work to be undertaken, prepared for the third Meeting of the GNI Expert Group in Spring 2020, Eurostat/C3/GNIG/064
- Forte, A. 2021. Ownership of IPPs: The Italian Experience in identifying economic ownership for Multinational Enterprises. Prepared for the Ad-hoc Meeting on Globalisation of the GNI Expert Group on the 24 of June 2021.
- Hussain, M., Peltola, R. & Mahajan, S. 2019. Measuring activities of multinational enterprise groups via large cases units. In: EURONA Eurostat Review on National Accounts and Macroeconomic Indicators, Issue 1/2019, p. 43 et seq.
- Joint Globalization Task Team (GZTT). 2022. G.5 Economic Ownership of Intellectual Property Products: Recording of Intra-MNE Transactions. Open for global consultation.
- OECD. 2015. Frascati Manual 2015: Guidelines for collecting and reporting data on research and experimental development – The measurement of scientific, technological and innovation activities.
- Destatis. 2022. National Accounts - ESA 2010 methods and sources for the German GNI and its components.
- United Nations Economic Commission for Europe (UNECE). 2015. Guide to Measuring Global Production.
- Vennix, K. 2012. The Treatment of Large Enterprise Groups within Statistics Netherlands. In: Proceedings of the Fourth International Conference on Establishment Surveys, p. 871 et seq.
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