



## **Norwegian Enterprises Involved in Global Manufacturing. Some Practical and Conceptual Problems**

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## Abstract

Being a small, open economy, Norway is the base of many enterprises involved in global production arrangements. In recent years studies have been initiated to look into conceptual and practical problems to capture correct and consistent data in cases where enterprises are engaged and operates in a global economy. Statistics Norway established a Large Case Unit (LCU) in 2018 to work with these topics in a systematic manner. In this paper we present a special case related to a unit engaged in developing and producing communication devices and discuss conceptual, as well as practical problems, related to • «National boundaries» and foreign activity recorded in company accounts related to branches • Industry classification • Selected challenges with recording of IPP regarding development and legal ownership of IPP and leasing and export of licenses • Other foreign income and expense transactions. We discuss and show how a corporate group's deliveries to end-customers can remain unchanged but with different intra-group company/legal structures across borders and changes in contracts with group companies, suppliers and subcontractors. The group can preserve its revenue and profits, but value added, export in goods and services, IPP ownership, and industry classifications within the domestic economies can differ. We also suggest how these challenges can be met.

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# 1 Introduction

Being a country with a relatively small population and with open boundaries for trade and relations with other countries, different aspects related to globalisation has large influence on the economy. In Statistics Norway, the Division for national accounts is in addition to being responsible for compilation and publication of the national accounts (NA), also responsible for compilation and publishing of the Balance of Payments (BoP). Conceptual and practical concerns related to globalisation has been acknowledged and discussed for decades, with an increased focus on global production in the recent years. A long-lasting work to improve quality on the National Accounts (NA) and Balance of Payments (BoP) data according to processing and merchanting, started with some analyses before the main revision of the NA and BoP in 2014 (see *Evensen, 2015*). This was followed by various initiatives to get more and better data related to processing and merchanting, at latest a project financed by grants from Eurostat carried out last year.

Statistics Norway established a Large Case Unit (LCU) in January 2018. The aim of the work in the LCU is to improve consistency and quality of data regarding large and complex enterprises in the NA and BoP source statistics, as well as in the NA and BoP. So far the work in the LCU in particular has focused on consistency between the compilation of national activity and reporting of international trade. The group is organised as a part of the Division for National Accounts, but other divisions in Statistics Norway also participate in the group. The resources are 6 persons, however only 2,8 fulltime equivalents.

Among the LCU tasks is to get into dialog with selected companies, whereas the selection of companies is based on identification of consistency issues. One important source for inconsistency in the statistical sources we observe, is related to global production in general, and processing and merchanting in particular.

In this paper we discuss some conceptual and practical issues based on one single company. Our example company may, or may not, be an actual company, or a kind of synthesis of more than one observed company. What is important, is that our example company is a realistic case, where the observations and issues are based on LCU-analyses and dialog with selected companies. Further in the paper we will refer to the example company as “our company”.

Our company is a resident multinational enterprise (MNE), with head office (HO) in Norway and affiliates abroad. The corporate group develops, produce and supplies devices to customers worldwide. Earlier the goods may have been manufactured in Norway, or the company may from the start have organised the production process with manufacturing abroad. In any case, today all the transformation of goods takes place in other countries than Norway. The exact product is not of importance, however what *is* important is that to develop and continue to develop the product considerable resources due to research and development has been necessary.

Before we proceed with the analysis of our company, chapter 2 of this paper provides some background on the work in the LCU and the data sources used in the NA compilation in Statistics Norway.

## 2 Some information about the work in the LCU and the main data sources

The LCU's work with enterprises follows this procedure:

1. The LCU has developed a semi-automatic system to compare micro-level enterprise data from various sources (annual process)
2. Based on this, enterprises are selected for further investigation
3. Desk-top exercise of selected enterprises, including data checks and analyses
4. If necessary, the firms are contacted
  - By email or telephone if the problems seem to be easy to solve
  - In some cases, with more extensive contact with a meeting and further dialogue

The key question we want to discuss is very often the production arrangements.

The sources the LCU compare are the main sources used in the compilation process for the NA and BoP, due to compilation of industry figures and export and import:

Norway has a long and strong tradition to put some efforts in compiling the NA supply and use tables (SUT). GDP is determined by the figures in the NA SUT. The export and import figures in the BoP and the NA SUT are fully consistent.

One of the main sources for the annual NA-data regarding industries in the SUT is the Structural Business Statistics (SBS). The SBS in Norway is based on

- Standard Industry Form (SIF): Reported income statements for the legal units to the Tax Administration
- and an addition sample survey conducted by Statistics Norway: Turnover, Costs and Investments in the Business Enterprise Sector

The SIF gives the accounts for the legal units, however based on information in the sample survey the legal units are split into figures for local kind of activity units (LKAU). The NA SUT is based on figures for LKAU.

The main source statistics regarding figures for export and import in the annual and quarterly NA and BOP are the

- International trade in goods statistics (ITGS) and the
- International trade in services statistics (ITSS).

Whereas the information used directly in the NA and BoP process is aggregated data by products, it is usually possible to identify the legal units in the reported micro data.

In addition to the SIF reported to the tax authorities, resident legal units also are obliged to set up annual financial statements, based on their accounts. Generally, the SIF gives the same totals and more detailed information than included in the annual financial statements, so the annual financial statements are not used systematically as a source for the NA. However, the annual statements and the annual reports may give some additional information about the legal units, and are therefore used by the LCU for analyses. Particularly useful for our work with consistency is notes to the company's annual financial statements that often gives information about distribution of sales revenue. From this we may usually identify sales outside Norway.<sup>1</sup>

It follows from this that the key identifier in the micro statistics usually is the legal unit, even though this is not the statistical unit in the source statistics and the NA. The LCU comparisons are therefore

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<sup>1</sup> Norwegian Accounting Act § 7-6: Income should be distributed by geographical market.

primarily conducted for the legal units, however some profiling and analyses are done for the group and for statistical units ENT and LKAU.

### 3 National boundaries and the domestic enterprise

The resident legal unit is a parent company with subsidiaries (legal units) in many countries, see Figure 3.1 The domestic enterprise (ENT) may consist of more than one legal unit, where only one legal unit is considered an institutional unit. domestic legal unit. Further more, the domestic ENT may be split into more than one local kind of activity unit (LKAU), with different activities which may take place in different regions in Norway. To simplify, we assume that the domestic ENT in our company consist of only one legal unit and that of one LKAU only.

According to common practise and legal obligations, separate financial statements are prepared for all the associated legal units in the group, so operating incomes and costs and balance sheet items related to the legal units abroad are not included in the accounts for the resident legal unit. The resident legal unit receives, as a parent company, returns of these direct investments in the form of primary income.

The resident legal unit do also prepare annual financial statements which cover the company group, with consolidated transactions between all the associated legal units. These consolidated financial statements for the company group are however not useful for the creation of national figures for statistical purposes, since it is not possible to separate transactions for the national statistical units from units abroad.<sup>2</sup>

In addition to legal units abroad, the legal unit in Norway also operates some branches abroad. In contrast to the legal units, transactions and balances related to the branches is included in the accounts (SIF and financial statements) of the resident legal unit. According to the principles in the SNA branches should be treated as a notional unit, and its transactions (and balances) should be separated and not included in the Norwegian economy. In our experiences, a legal unit is usually established when the activity in another country is expected to be permanent. What the company refer to as a branch may be an office established for a shorter period (less than a year, or expected to be so from the beginning), sending employees in Norway abroad for a period instead of hiring local employees, and/or the activity may be of insignificant importance (a sales agent or another small office with insignificant permanent staff). However, there are some examples where branches are used instead of legal units even though they are of some significance and their presence in the country is more permanent. This might be for historical reasons, it might be if a regime in a country is considered as unstable or if there are other specific considerations due to the bilateral contacts between the countries.

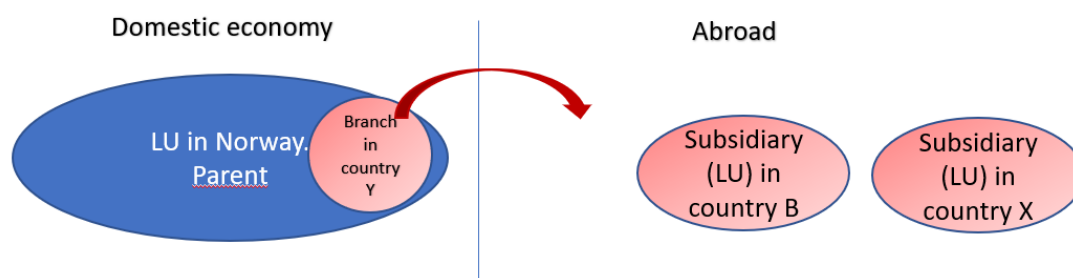
Our company was in practice not able (or willing) to establish and deliver a complete set of accounts to Statistics Norway for its branches abroad<sup>3</sup>. But due to tax agreements (to avoid double taxation), the company delivers some information to the Norwegian tax authorities. This information might be used to impute figures for the notional unit(s) abroad. The imputed figures for the notional unit(s) abroad must then be subtracted from the figures in the SIF/financial statement for the resident legal unit to construct figures for the domestic enterprise (ENT). The LCU analysed the figures delivered to the tax authorities, and so far we found the figures due to its branches abroad quite insignificant in relation to the total figures for the domestic legal unit. However, in case of reorganisation of the company structure, the structure of branches should be subject to new analyses and assessments.

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<sup>2</sup> However it might give some useful information for analyses of the group.

<sup>3</sup> Some other companies do.

**Figure 3.1 Group structure, simplified**



## 4 Organisation model and domestic activity

### 4.1 The principle question

The domestic ENT performs research and development (R&D), wholesale activities and are managing the activities that takes place abroad, as well as in Norway. In this case, managing includes in addition to HO-services control of the manufacturing processes abroad.

When describing the domestic activity, our contacts in our company do not see our ENT as a manufacturing company, but more like a service provider engaged in R&D. However, there are also examples of companies with quite similar organisation models and activity that clearly see themselves as a part of the manufacturing industry. In our case, we confronted our contact persons with information in the annual financial statements (and/or SIF) and annual reports which states that the reported sales revenue consist of sales of manufactured goods. , They agreed to reconsider being categorised as a service provider.

International recommendations for NA and BOP (SNA and BPM) describe the treatment of global production of goods in terms of two main models: Goods sent abroad for processing and merchanting. 2008 SNA and BPM6 changed the recommendations on how to record processing and merchanting from physical movement of goods to economic ownership. UNECE (2015) describes factoryless goods producers, as an organisation model different from both merchanting and transformation of goods owned by domestic principals.

The domestic ENT is a principal that engages in contracts with manufactures abroad for processing the products. The company engages in many contracts and the details in the contracts with the various contract manufacturers may not be the same. Some of contract manufactures may change over time. Clearly our company is factoryless since the sale incomes are related to sale of manufactured goods and the company produces and is the owner of the IPP. IPP seems like a critical input to the value added of the company's products. But is our ENT factoryless with arrangements mainly falling in the concept of processing, or is it a factoryless goods producer in the narrow definition of the concept? (UNECE, 2015, §2.81-2.83.) This question has been discussed and analysed within the LCU, with other divisions in Statistics Norway and with the company.



The key question is whether the principle in Norway maintains economic ownership to the main input materials used in the processing process, or at least some of the material input prior to processing (UNECE 2015, §2.82). This question should in principle be easy to answer, however turns in some cases to be more difficult to answer in practice.

In this case the costs related to the main input material in the production process is quite low, in relation to the total costs to develop and produce the product. Insignificant costs components are rarely specified in the companies' accounts. Even if these costs *were* a more significant part of total costs, they may not be identified in the information available for the LCU. The statistical concepts may also be difficult to understand for employees in the ENT. Contact persons in our company may therefore not easily answer our questions correctly. After some dialog with contact persons in our company the conclusion was that the company *do pay* for the main material input used in the production process (or at least some of it). The breakthrough in the discussion with our company was that the balances in our company's financial statements specified the value of input material and work in progress as well as the stock of finished goods.

As a subsequent conclusion, *our company (the domestic ENT) is considered a resident principal with outward processing arrangements and according to the current standards classified in the manufacturing industry.*

For some *other* companies, with quite similar production arrangements and similar activities in Norway, the conclusion has been that the domestic principals do *not* provide the main material input (or any material input) prior to the production process. These companies have been considered factoryless goods producers with industry classification in the wholesale trade industry.

## 4.2 How the choice of organisation model effect NA figures

How does the choice of organisation model affect the national accounts figures?

Table 4.1 shows national accounts figures that may be delineated based on the companies' accounts

- in the case of the domestic ENT being a principal with outward processing arrangements (case 1) and
- in the case of being a factoryless goods producer (FGP).

The figures are not actual figures, so the currency is not important.

In this example we see that the different organisational models do not affect the domestic ENTs contribution to the domestic value added (and GDP) and gross operating surplus. Neither is the group's total sales to customers worldwide affected, nor the group's gross operating surplus. In this example the costs due to acquisition of finished goods for resale in case of the FGP, equals exactly the sum of costs related to material input prior to processing and processing fees paid to the manufactures. This might not be fully realistic, but not unreasonable. It might be reasonable to assume that the compensation to fixed capital is not affected by this choice of organisational model, so the domestic operating surplus should not be affected either.

Even though GDP and subsequent NA aggregates *is not* affected by the choice between these two organisational models, the impact on the level and composition (product specifications) of output and intermediate consumption is formidable. Further on, the choice of model affects value added for the aggregated industries, that is the manufacturing industry versus the wholesale trade industry, as well as other industry aggregates.

<b>Table 4.1. Principal with outward processing (case 1) vs domestic principal as factoryless goods producer (FGP – case 2). Effect on NA figures. Currency: X. Year: Z.</b>				
	Domestic ENT. Case 1	Group Case 1	Domestic ENT. Case 2	Group Case 2
<i>Output:</i>				
Goods				
Revenue	400 000	500 000	400 000	500 000
- Cost: Acquisition of finished goods for resale	0	0	140 000	170 000
<b>Output of goods (NA concept)</b>	<b>400 000</b>	<b>500 000</b>	<b>260 000</b>	<b>330 000</b>
Services (R&D)	20 000	0	20 000	0
<b>Total output</b>	<b>420 000</b>	<b>500 000</b>	<b>280 000</b>	<b>330 000</b>
<i>Intermediate consumption:</i>				
Materials	70 000	85 000	30 000	35 000
of this: Costs due to material input for the manufacturing process	40 000	50 000	0	0
of this: Other	30 000	35 000	30 000	35 000
Services	120 000	120 000	20 000	0
of this: Processing fee	100 000	120 000	0	0
of this: R&D	5 000	0	5 000	0
of this: other services	15 000	0	15 000	0
<b>Intermediate consumption</b>	<b>190 000</b>	<b>205 000</b>	<b>50 000</b>	<b>35 000</b>
<b>Value Added</b>	<b>230 000</b>	<b>295 000</b>	<b>230 000</b>	<b>295 000</b>
Compensation of employees	90 000	100 000	90 000	100 000
<b>Gross operating surplus</b>	<b>140 000</b>	<b>195 000</b>	<b>140 000</b>	<b>195 000</b>

Table 4.2 shows export and import figures due to the domestic ENT in the same two cases. The table shows that even though the choice of organisational model do not affect total net export, figures for export and import seen separately are significantly different in the two cases, and so is the composition of export and import on products.

It is important to add that all the details needed to give a complete and consistent treatment of the arrangements in the NA and BoP (as in table 1 and 2) are not necessarily available in the companies' accounts (SIF or financial statements). An incomplete data set may lead to inconsistencies in the data sources and imbalances in the NA SUT (in either case).

In contact with our company we try to solve these problems, by encouraging the company to provide us with the necessary detailed data for a specific year (or more likely, 2-3 years). However, we are not able to follow up such detailed contacts on a current basis for many companies. How do we solve it in practice in a broader sense?

**Table 4.2. Principal with outward processing (case 1) vs domestic principal as factoryless goods producer (case 2). Effect on export and import figures. Currency: X. Year: Z.**

	Domestic ENT. Case 1	Domestic ENT. Case 2 (Principal as FGP)
<b>Export</b>		
Goods, revenue	400 000	400 000
Goods, acquisition of goods for resale		-140 000
Services (R&D)	20 000	20 000
<b>Total export</b>	<b>420 000</b>	<b>280 000</b>
<b>Import</b>		
Material input for the manufacturing process	40 000	-
Services		
of this: Processing fee	100 000	-
of this: R&D	5 000	5 000
of this: other services	-	-
Total import	145 000	5 000
<b>Net export</b>	<b>275 000</b>	<b>275 000</b>

### 4.3 The solution in practice in a broader perspective

We are interested also in the future to easily to be able to separate our company (and other companies with processing arrangements abroad) from enterprises with manufacturing in Norway. Likewise, we want to separate factoryless goods producers from domestic ENTs mainly involved in merchanting and from ordinary wholesale enterprises. In general we want enterprises with global production arrangements to be identified through the whole statistical system. As a consequence legal units/ENTs with identified global production arrangements have been marked with specific codes in Statistics Norway's Business register.

The aim is an overview of units involved in various global production arrangements. Having this information, it is possible to analyse the structure and development for units involved in global production with other units in the economy. It would also be possible to tailor-make questions or sources for these units, to get better and more precise information and avoid increasing the response burden for the rest of the population. At present there are 5 different codes for global production arrangements in Statistics Norway's BR; that is

1. Inward processing: Contractors that process goods in Norway on behalf on non-resident principals
2. Outward processing: Resident principals that source out the production process to contractors abroad, and where the principals own the main material input, as well as finished goods
3. Resident principals that source out parts of or the whole production process to contractors abroad, and where the principals partly own the main material input, as well as finished goods, and partly is involved in merchanting.
4. Factoryless goods producers (FGPs)
5. Units involved in merchanting

Whereas the first three categories fall under the manufacturing industry, the last two categories currently fall under the wholesale trade industry. The third category is a "mixed" category, realising

that it is better to mark a unit if the exact category is uncertain, than not to mark it. Marking makes it easier to follow the unit more closely in the statistical system.

All units marked with type codes for global production arrangements are included in the sample for the survey on International Trade in Services Statistics from the year 2020 onward, to make sure we capture transactions related to these arrangements. Questions regarding international trade not captured in the ITGS were included in the survey form 2019. See tne, thm, ywb (23. desember 2020). Knowing their type code, their reporting on codes may be checked, and respondents contacted if they do not respond according to their arrangements.

Being able to identify all FGPs and their connected figures in the whole statistical system, makes it easy to change industry classification for these units at a later stage if that should be the outcome of further international discussions. Meanwhile it makes it possible to compile different analyses or tables with and without these statistical units. As a part of a Eurostat grant report, more legal (and statistical) units were identified and marked as FGPs

## 5 Selected challenges with recording of IPP regarding development and legal ownership of IPP and leasing and export of licenses

The decision of economic ownership of IPP in our company is not the trickiest one. Being a MNE with staff heavily involved in R&D, being a parent company, and the main provider of IPP in the group, our domestic ENT clearly seems to be the economic owner of the IPP. However, there still may be some measurements issues related to IPP related flows within the company group.

Some affiliated legal units abroad do also produce R&D services, sold to the parent in Norway. Other legal units (or branches) abroad may be involved in managing selected parts of the manufacturing process, distribution to end customers in specific regions in the world, etc. If subsidiaries manage manufacturing processes abroad, the domestic ENT probably receives intra group revenue for R&D services or for licenses. This means that the domestic ENT may both export and import R&D services (as in table 4.2). Practical problems that may occur are for example that the transactions are not visible in the accounts or not recorded by the arm lengths principle. So far, obvious reporting errors or uncertainties in figures reported to the ITSS survey and the R&D survey are followed up by confronting the reporting units with new questions. However, these problems might be followed up more systematically in the future.

Instead of earning gross profits from sale of goods to cover R&D costs, other operating costs and a large profit, the company *could* sell its core IPP to a foreign group company and continue by only providing R&D services for the group at cost (possibly with a reasonable margin). This is most likely to happen if the ownership of the parent company is taken over by a non-resident owner. As we can see in table 5.1, the shift may result in a lower profit margin where the service fee covers salary costs and other costs, while the main activity of the domestic company is still product development. Since the domestic ENT is no longer involved in managing the production processes abroad, most likely employment and compensation of employees will be a bit lower.

If no service agreement exists, the domestic company may engage in R&D for its own account and the group will cover net losses with capital transfers or debt. This alternative will not only affect the domestic value added and therefore GDP, but may also affect GNI and disposable income.

Another option is to lease out IPP for a fixed amount or receive royalties at a percentage rate of the revenue from using the IPP in production and sales. This can also result in lower gross margins in the domestic company, while the core activity continues to be product development.

The practical, and maybe also the conceptual, problems to capture the correct transactions related to IPP according to the NA and BoP principles may be considerable more challenging in these alternative cases than in previous cases (case 1 and 2). So far we have no specific ideas beyond what is already described in this paper (follow up the reporting units on a micro level) or in available international literature, like the UNECE (2015), chapter 4.

<b>Table 5.1. Domestic ENT as a FGP (case 2) versus supplier of R&amp;D (case 3). Currency: X. Year: Z.</b>					
	Domestic ENT (parent as FGP)	GROUP	Domestic ENT, as provider of R&D	Elimination new intra-group transaction	Group, NEW
Output:					
Goods	260 000	330 000			330 000
Services	20 000	0	200 000	-200 000	0
Intermediate consumption:					
Materials	30 000	35 000			35 000
Services	20 000	0	10 000		5 000
<b>Value Added</b>	<b>230 000</b>	<b>295 000</b>	<b>190 000</b>		<b>295 000</b>
Compensation of employees	90 000	100 000	85 000		100 000
Gross operating surplus	140 000	195 000	105 000		195 000

## 6 Other foreign income and expense transactions

A few remarks according to practical and conceptual problems regarding IPP related flows, specifically between associated legal units in the company group have been commented in chapter 5.

Despite IPP related flows, also flows related to cover costs to produce services related to head offices might be difficult to capture. We have seen in some examples that costs related to HO in practice may be financed as group contribution instead of a transaction of HO-related services. Property incomes (received and paid) seems usually less problematic to capture. However, due to available resources and the LCU's mandate, the LCU work in Norway so far has focused on consistency in operating incomes and costs. So we may not have detected some essential problems.

However, transfer pricing might be an issue for all kinds of intra group transactions. Intra-firm transactions should be priced like arm's length transaction between unrelated parties OECD (2010). However, company accounts for resident ENTs usually states that intra group transactions are based on an arm's length principle, and the structural business statistics are in turn based on the companies' accounts. Should we as statisticians trust that the intra-group transactions in the accounts, and from this the annual statistics, in reality be based on the arm's length principle, or suspect that the internal transactions are biased?

Usually, as national accountants, we have to rely on figures from the source statistics, which in turn usually are based on the companies' accounts (SIF or financial statements), at least for annual data. In a few cases, where inconsistency issues clearly may be explained with use of different (transfer) prices in the statistical sources compared, the prices and subsequent values may be corrected in (at least) one statistical source to gain consistency between the sources. The corrections should be made after and based on consultations with the reporting company.

## 7 Final remarks

Through the work with global production arrangements in the LCU and NA division in Statistics Norway we have learned that

- For resident units processing goods abroad, the description in the UNECE Guide to Measuring Global Production, with the typical example of the athletic shoe (A1), is not so representative for Norway
  - Norway has a relative small home market. Most of the produced specialised goods are therefore sold at the world market
  - Material input prior to the processing are most commonly also acquired abroad

Employment costs in Norway in relation to employment costs in most other countries are in general high, however for employment with high skills (education) the costs are relatively low. Design, development, engineering and other tasks which demands employees with high skills are therefore usually performed in Norway

For many products the contribution of IPP to the product value is high, while the contribution of material costs to the product value is relatively low

However, we can also find cases with raw materials with origin from Norway, like fish, sent to other countries for transformation, but in most cases the raw materials are sold to non-resident customers before transformation

Historically electricity prices have also been low in Norway relatively to other countries. Manufacturing of metals and other products that may demand high input of energy also takes place in Norway

In practice it is especially difficult to distinguish between transformation of material owned by resident principals (manufacturing industry) and factoryless goods producers (today classified in the wholesale trade industry)

In this paper we have discussed some conceptual and practical issues based on one single company. Our example company is a realistic case, where the observations and issues are based on LCU-analyses and dialog with selected companies. Our company is a resident multinational enterprise (MNE), with head office (HO) in Norway and affiliates abroad. The corporate group develops, produces and supplies devices to customers worldwide, where all the transformation of goods today takes place in other countries than Norway. IPP is a critical input in the production.

The question of whether the company should be treated as a factoryless goods producer or a principal engaged in processing arrangements abroad is a main issue. We also explain how the problem has been dealt with by the LCU, on the micro level as well on a more general systematic manner. Our choice of solution gives us the opportunity to identify and analyse these units in the whole statistical system, in order to obtain better quality in reported data. It also gives opportunities for various analyses. Moreover, the solution will make it easier to change classification of industry aggregate for factoryless goods producers if such a change will be internationally recommended as an outcome of international discussions on this topic.

Concerns related to IPP are also discussed. There is an acknowledgement that we should put more emphasis on studying transfers related to IPP and other transactions than the companies' operating revenue and costs more closely in the future to improve the quality of these figures and the overall

description of the domestic ENTs in the NA. However this aim will, as always, depend on available resources.

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