

Chapter 3

Recording transfers of IPPs inside global production chains

Problems of recording

- Intellectual property products (IPPs) – results of R&D, mineral exploration and evaluation, computer software and databases, entertainment, literary and artistic originals.
- Data collection difficult - due to intangible nature of IPPs and organization of enterprises involved in global production.
- Netherland's experience with data collection on R&D in a number of large MNEs: intra-company IPP service flows are underreported, and existing data collection frameworks don't solve these problems.
- Chile's supporting paper illustrates the general difficulty of obtaining data on mineral exploration.

Transfers of IPPs in MNEs

- Multinational enterprises increasingly divert production of IPPs to countries in order to maximize revenues and reduce global tax burden as the worldwide IIP legislation has developed, and the production of IPPs becoming more modular.
- Considerations: tax discounts, availability of capable and innovative labour, cheap wages, good infrastructure for carrying out development of IPPs.
- On the other hand, advantages in centralizing IPP production: common infrastructure, synergies between researchers/ developers and proximity to major research institutions.

Transfers of IPPs in MNEs (cont'd)

- The use of the IPPs in production units is placed in many other countries. This means that the MNEs have to enable access to the IPPs across countries, and will seek to do so at minimum costs.
- MNEs may choose to place the legal ownership of an IPP in one country rather than another due to variations in tax regulations or IP regulations (this tendency may decrease if new OECD guidelines are adopted).
- So even if an IPP is produced by the enterprise in country A, the ownership may be registered in country B, while the IPP is used in country C.

Transfers of IPPs in other global production

- In other global production the principal enterprise will often order production by a supplier and let the supplier use IPP's developed within the principal enterprise.
- In this case the IPP remains the property of the principal, and since no ownership has been transferred, in accordance with SNA there should not be a recording of the transaction involving the IPP itself.
- But for purposes of input-output analysis, it could be very useful to know the value of the service provided and used in production by the supplier.

Former discussions of the problems

- *OECD "Handbook on Deriving Capital Measures of Intellectual Property Products"* discussed the measurement problems, but did not present a solution and recommended further research to “*identify ways of obtaining the values of transactions between affiliated units and their nature.*”
- *UNECE Guide “Impact of Globalization on National Accounts”* reviewed the conceptual and measurement problems and in particular, the question of economic ownership of the IPP as opposed to the legal ownership.

Former discussions of the problems (cont'd)

The UNECE Guide explained that the SNA does not give explicit guidance on determining economic ownership within multinational enterprises, and said in paragraph 7.9 that: *"Developing this guidance will require further research at the international level to clarify the existing standards."* and warned of a lack of comparability between national accounts in different countries until such guidance was developed: *"Some countries for example may treat unidentifiable income implicitly generated by IPPs registered in their country as property income, whilst others may take the view that it arises from production of services."*

Determining economic ownership of IPPs

- Following the guidance and indications outlined in Chapter 2 on determination of economic ownership in general, and in the special case of transactions between affiliates, this chapter recommends certain conventions for registering some of the flows of IPPs within MNEs.
- In order to develop such conventions and find out, which variables are available for determining ownership, the current state of statistics on flows and stocks of IPPs is reviewed, and examples from countries are presented.

Current statistics on production

- Measurement of production is most developed. F. ex. data on R&D production collected in about 90 countries for OECD and UNESCO. Means that possible to place the production of IPPs in one establishment and one country.
- Specific surveys on multinational enterprises in OECD countries also include the measurement of production of R&D.
- EU countries are obliged to compile statistics on foreign affiliates according to a regulation and are developing a Euro Group Register (ERG) covering European MNEs.

Current statistics on flows

- Measurement of international flows in connection with IPPs is under development: MSITS 2010 recommendations include both separation of data on services of IPPs, and data related to multinational - inwards and outwards foreign affiliates.
- Data on flow of services are collected in a number of countries, and countries report details on exports and imports of R&D, software and other IPP's according to the Extended Balance of Payments of Services (EBOPS) classification presented in MSITS.

Current statistics on flows (cont'd)

- Data on flows of funding of R&D also collected in OECD and UNESCO R&D surveys by many countries. The classification of the flows of funding differs from SNA, so the data are not quite suitable for NA and BoP, but problems discussed, and some countries have started to collect data that may be used in NA.
- Countries performing surveys on expenditure on R&D expenditure, enterprise surveys on international trade in services and specific enterprise surveys on activities of multinationals are able to combine data from these three types of surveys (one example in the chapter).

Table 2. Source of funds of gross domestic expenditure on R&D of business sector

2007

Million national currency

	Total	Business enterprise	Sub-total government	Higher education	Private non-profit	Total	Funds from abroad		
							Thereof:		
							Foreign Business Enterprises	Foreign Business Enterprises within same group	Other business enterprise companies
Australia	15,047	14,433	423	5	1	186	..	..	..
Austria	4,846	3,214	498	2	2	1,131	1,087	718	369
Belgium	4,420	3,691	250	1	2	475	414	361	52
Canada	16,644	13,893	340	0	0	2,411	..	..	..
Chile	97,512	95,510	1,985	0	2	14	..	..	..
Czech Republic	33,620	27,669	4,502	45	0	1,404	1,233	1,167	67
Denmark	30,562	26,388	745	..	98	3,331	2,893	2,428	465
Estonia	82	68	8	0	0	6	6	..	..
Finland	4,513	4,103	156	..	5	249	233	214	19
France	24,753	19,933	2,420	2	15	2,384	1,933	1,311	622
Germany	43,034	39,427	1,936	0	74	1,597	..	..	..
Greece	384	224	18	10	1	130	79	..	..
Hungary	123,669	92,583	11,901	..	218	18,968	..	..	..
Iceland	19,169	15,956	1,037	0	0	2,176	..	..	..
Ireland	1,603	1,184	88	0	0	331	..	..	..
Israel	26,791	17,808	1,149	0	0	7,834	..	..	..
Italy	9,455	7,429	624	2	15	1,385	1,203	1,017	186
Japan	13,830,433	13,618,677	149,389	1,176	11,152	50,041	..	..	..
Korea	23,864,893	22,296,356	1,485,569	17,590	10,888	54,490	53,986	34,007	19,979
Luxembourg	495	447	20	..	..	28	..	..	..
Mexico	19,853	18,351	1,195	0	2	305	..	..	..
Netherlands	5,495	4,563	125	2	10	795	..	..	..
New Zealand	923	736	80	2	52	54	..	..	..
Norway	19,319	15,499	1,474	..	5	2,341	2,108	1,629	479
Poland	2,026	1,684	237	2	0	104	..	..	..
Portugal	1,011	905	35	0	0	71	64	63	1
Slovak Republic	112	82	11	0	0	18	17	16	1
Slovenia	299	267	24	0	0	9	4	2	3
Spain	7,454	5,596	1,218	2	11	627	472	447	25
Sweden	77,176	64,812	3,608	85	116	8,554	7,589	6,289	1,300
Switzerland	..	..	..	..	..	..	..	..	..
Turkey	2,513	2,240	243	1	6	23	..	..	..
United Kingdom	15,631	10,922	1,064	..	15	3,630	..	..	..
United States	269,267	242,682	26,585	..	..	..	..	..	..
Non-OECD Member Economies	..	..	..	..	..	..	..	..	..
Argentina	1,252	1,184	59	..	..	10	..	..	..
China	268,194	246,559	12,871	..	..	4,148	..	..	..
Romania	907	462	386	8	1	50	42	38	4
Russian Federation	238,386	87,352	131,768	617	164	18,485	..	..	..
Singapore	4,235	3,752	228	2	..	253	232	..	..
South Africa	10,738	7,134	2,327	2	96	1,180	..	..	..
Chinese Taipei	229,126	224,523	4,463	7	91	41	..	..	..

Data extracted on 06 Feb 2013 10:25 UTC (GMT) from OECD.Stat

Presentation of conventions for determining economic ownership

- Taking into account the current availability of information in most countries, certain conventions for registering ownership in the national accounts are proposed and presented in a decision model.
- The decision model may serve as a tool supporting the recording of transactions of IPP's in the national accounts and the balance of payments.

The decision model – information used

- Data from enterprise surveys
 - The starting point: that IPP is observed in the unit.
 - + Commonly available information:
 - Control/ownership of the unit – part of MNE or not?
 - Did the unit produce the IPP or not?
 - Activity of the unit (ISIC) – a type of activity that may use the IPP in production or not?

The decision model – information used (cont'd)

Additional variables connected to IPPs that are mostly available:

- Flows related to the IPP, such as income from royalties and licenses to use.
- Registration of patents/copyrights for the IPP. But registration of patents/copy rights is not always used for IPPs with a short service life and registration of patents is not always updated in registers, so this variable may currently not be as helpful as expected.

The decision model

- For units in an MNE, the model shows decisions for a subsidiary (a majority controlled affiliate). A decision model for a parent would mirror the decisions for a subsidiary.
- Units that are not part of MNE's are principals in global production.
- After economic ownership is decided upon, international flows of IPP's and flows of IPP services can be registered.

The decision model - two branches

Control/ ownership of unit	Production of the IPP	Type of producer	Income and expenditure related to the IPP	Decision about economic ownership of the IPP	Related decisions
			1.1.1.1 The unit received payment for cost of producing the IPP from MNE parent	Attribute economic ownership of the IPP to the MNE parent	Don't include the IPP as fixed capital formation of the unit. Register exports of the IPP to the MNE parent. Register imports of IPP services representing the value of the use of the IPP by the unit. If data available impute use in proportion to the unit's share in total relevant MNE production
		1.1.1. The unit is a producer of goods and services and may use the IPP in production			
			1.1.1.2. The unit did not receive payment for cost of producing the IPP from MNE parent, finances the IPP from sales of products	Attribute economic ownership of the IPP to the unit	The IPP is fixed capital formation of the unit.
	1.1 The unit produced the IPP				
1. The unit is part of a MNE					

Decision model - the case of a principal in global production

Control/ ownership of unit	Production of the IPP	Type of producer	Income and expenditure related to the IPP	Decision about economic ownership of the IPP	Related decisions
			2.1. The unit receives income from royalties or licences to use	Attribute economic ownership of the IPP to the unit	The IPP is fixed capital formation of the unit. If income from abroad register exports of IPP services
2. The unit is a global producer, but not part of a multinational enterprise (MNE)			2.2. The unit does not receive or pay income from royalties or licences to use the IPP.	Attribute economic ownership of the IPP to the unit	The IPP is fixed capital formation of the unit.
			2.3. The unit pays royalties or licences to use	The unit does not own the IPP	Don't include the IPP as fixed capital formation of the unit. If paid to abroad register imports of IPP services

The case of “brass plates”

- If an MNE subsidiary has not produced the IPP, and cannot use it in production, it is assumed that registration with the unit is for tax benefit or similar reasons.
- It is proposed to classify income and expenditure in a separate category – f. ex. "SPE income and expenditure related to IPPs"
- Separating such flows will allow the users to analyze statistics while excluding these flows.

Decision model - the case of a "brass plate"

Control/ownership of unit	Production of the IPP	Type of producer	Income and expenditure related to the IPP	Decision about economic ownership of the IPP	Related decisions
1. The unit is part of an MNE	1.2. The unit did not produce the IPP	1.2.2. The unit is not a producer of goods and services, who may use the IPP in production		Attribute economic ownership of the IPP to the unit, but classify it separately - the unit is a "brass plate" for the MNE parent	Classify the fixed capital formation, income and expenditure related to the IPP separately to allow analysis excluding "brass plate" units

When only minimal information available

- Even if only the minimal information on control/ownership and activity exists, the “brass plates” can be separated.
- It is not possible to make separate decisions for cases with payment from the MNE parent, but difference from former model are not very significant, since assumptions:
 - When subsidiary is a producer using IPP in production (1.1.1), the MNE will mostly not pay separately for the development of the IPP.
 - When the subsidiary does not use the IPP in production (1.1.2), payment by the parent will be most common.

Decision model with minimum information

Control/ownership of unit	Type of producer	Decision about economic ownership of the IPP	Related decisions
	1.1.1. The unit is a producer of goods and services and may use the IPP in production	Attribute economic ownership of the IPP to the unit	The IPP is fixed capital formation of the unit.
1. The unit is part of a multinational enterprise (MNE)	1.1.2. The unit is not a producer of goods and services, who may use the IPP in production, but a type of producer producing IPP's (software industry or R&D industry f.ex.)	Attribute economic ownership of the IPP to the MNE parent	Don't include the IPP as fixed capital formation of the unit. Register exports of the IPP to the MNE parent.
	1.1.3. The unit is not a producer of goods and services, who may use the IPP in production, and not a type of producer producing IPP's .	Attribute economic ownership of the IPP to the unit, but classify it separately - the unit is a "brass plate" for the MNE parent	Classify the fixed capital formation, income and expenditure related to the IPP separately to allow analysis excluding "brass plate" units
2. The unit is a global producer, but not part of an MNE		Attribute economic ownership of the IPP to the unit	The IPP is fixed capital formation of the unit.

Steps to improve data collection on IPPs

- Data collection on funding in OECD/UNESCO R&D surveys should distinguish between sales of IPPs, income from royalties and licences, funding in connection with joint production, and unrequited transfers.
- Special data collection for large enterprises.
- International cooperation in collection of data on activity of MNEs not only on structural data, but also on international transactions in IPPs.
- Implement the detailed EBOPs classification recommended in MSITS 2010 in BoP statistics – R&D coverage to be consistent with NA as explained in NL appendix.

Conclusion

- The problems with statistics on production, transfer and uses of IPPs in connection with global production are recognized, and data collection has developed, but is still limited.
- At this stage it seems possible to record transactions related to IPPs on the basis of commonly available information on control/ ownership, income and activity of the unit, where an IPP is observed .
- When statistics on IPPs have improved further, it will be necessary to update the recommendations given in the chapter.