



STATISTICS DIRECTORATE

STD/NAES/RD(2004)1
For Official Use

National Accounts and Economic Statistics

NOTE ON THE PROBLEMS WITH REGISTRATION OF TRANSACTIONS IN CONNECTION WITH "FABLESS" ENTERPRISES – CROSS-BORDER OUTSOURCING

This document has been prepared by Soli PELEG, Central bureau of Statistics (Israël)

WORKING PARTY ON NATIONAL ACCOUNTS

To be held on 12-15 October 2004

Tour Europe, Paris La Defense

Beginning at 9.30 a.m. on the first day

For further information please contact:

Soli Peleg

E-mail:soli@cbs.gov.il

JT00170116

NOTE ON THE PROBLEMS WITH REGISTRATION OF TRANSACTIONS IN CONNECTION WITH “FABLESS” ENTERPRISES – CROSS-BORDER OUTSOURCING¹

1. In recent years the growing globalization has led to the establishment of many so-called fabless enterprises. A fabless enterprise is an enterprise that engages in management, research and development, and marketing, but out-sources the production of the developed products to a non-affiliated enterprise. The final product is sent directly from the sub-contractor to customers, and thus no flow of imports or exports of goods from the domestic country are registered in the country where the fables enterprise is located. Such outsourcing has been especially common for enterprises engaging in semiconductor development (hence the word fabless, coming from computer enterprises having fabs). There even exists a 10-year old international association of fabless semiconductor enterprises, which supports the activity of such enterprises. The activities of such enterprises is well described in a document published by this association (<http://www.fsa.org/resources/fablesfacts/definitions.asp>), and the reason for these activities is also given: “As the cost of building a wafer fab and maintenance of leading-edge process technology escalates, the fabless model is an attractive long-term option for many semiconductor companies. By adopting a fabless business strategy, a company can focus time and resources on the design of innovative integrated circuits, while avoiding the high cost of operating an internal fabrication facility. This approach has proven highly successful. The fabless segment has exceeded the growth of the overall semiconductor market by nearly double.

2. However, according to the experience in Israel, similar enterprises may be found in other industries as well. The partial data on fabless enterprises in the semiconductor industry collected for the balance of payment in Israel indicate that the importance of such industries is growing very fast (see table 1 below).

Table 1. Exports of fabless companies in the semiconductor industry in Israel - preliminary data

US\$ millions

	Gross revenues from sales abroad	Net revenue - registered as exports
2001	380.0	131.1
2002	510.5	176.1
2003	612.6	211.3

¹ Prepared by Soli Peleg, Central Bureau of Statistics

3. The problems connected with analysis of production processes with growing outsourcing within a country have been noticed in the past, but the recent trend of outsourcing the major part of the production process over national borders seems to pose larger problems. These problems were recently mentioned by us in a paper presented at the latest IARIW meeting in a session on R&D satellite accounts, but since such problems have implications for the core national accounts, the balance of payments and for the detailed business statistics series as well, we would like to bring the subject up in the framework of the national accounts meetings.

The problems

4. To illustrate the problems involved with registration of such an enterprise, an example taken from Israel: a fables enterprise designs and markets finished products, which are produced by non-affiliated enterprises in an Asian country. In the financial reports the domestic enterprise registers the whole value of the sales of the final production as domestic income. The net income of the domestic enterprise, after deducting payments to sub-contractors abroad, amounts to about 35% of the value of the production. This means that the domestic share in the combined added value is quite high and may be assumed to reflect mainly the value of R&D performed within the country. On the one hand, for such a firm it is easy to collect many of the gross data needed to analyze the production processes taking place. However, on the other hand, in order to separate the activities between the countries, one has to collect data on the transactions taking place between the domestic enterprise, the producers abroad, and the customers, since no movement of goods has been observed in the foreign trade data, and the transfer of R&D and other services to be used in the outsourced production also has not been recorded.

5. The Central Bureau of Statistics in Israel (ICBS) has only recently become aware of the problems with statistics on fables enterprises, which have lead to relatively large discrepancies between data collected from different sources on foreign transactions, and industrial revenue. Such problems affect the series of business indicators, the national accounts, and the balance of payments, and currently a special collection of data on these enterprises has started in the framework of business surveys. The collection of data is complicated and necessitates visits to the enterprises and personal interviews.

6. Until detailed data are available, rough estimates of value of the R&D and other services to be attributed to the domestic enterprise are prepared as the difference between gross exports data reported by the firms to the VAT authorities and data reported by firms on payments to foreign producers.

Possibilities of registration

7. In fact a joint production process by at least two distinct enterprises located in different countries is taking place. The R&D and other intangibles are made available to a non-affiliated firm (probably under very strict limitations), so that it may produce a final product and send it directly to the customer. One could, as is currently being considered in the framework of the Canberra II group, regard the R&D to be a fixed asset used in production similar to tangible fixed assets. If it were a tangible machine, production could not take place in another country without the machine being moved abroad through customs, and the problems of registering the transactions would be smaller. However, in the case of fables enterprises, R&D is moved abroad to participate in a production process without being recorded in customs.

8. Does it matter for the national accounts, how such transactions are registered? At least the analysis of input-output tables, estimation of series at constant prices, and productivity analysis will be affected by the way transactions of fables enterprises are registered. For the balance of payments it might also matter that inconsistencies in the registration of the transactions in the countries involved might occur.

9. There seems to be at least 2 alternatives of registering the transaction connected to fables enterprises:

- (1) A gross registration of the transactions taking place. Such a registration would enable the analysis of the production process and facilitate the estimations of transaction at constant prices. The problem is that all data on gross transactions are not always available, and the volume of transactions in the national accounts and the balance of payments becomes inflated.
- (2) Registration of net flows. One could classify the net flow as sales of parts of the relevant product (Computer chips in many cases), which would fit the classification in the country purchasing the product. Another possibility would be to classify the flow as sales of services.

10. The current Balance of Payments manual recommends registering a net flow, whenever an enterprise markets exports of products leaving another country. In such cases, it is recommended to register the net income from the transaction as exports of merchanting services (a registration that in itself seems problematic, since it leads to inconsistencies between the statistics in different countries). However, in the case of fables enterprises the label of merchanting is misleading, since the net flow clearly is not only a trade margin. Since no suitable classification of such flows is available, in the meantime they have been classified under “other services” in the Israeli balance of payment.

11. The globalization manual finalized recently by the OECD provides some very useful guidelines for preparation of statistics on multinational enterprises. However, in the case of subcontractors for fables enterprises, one is not dealing with affiliated or foreign controlled enterprises, so that they do not seem to be covered by these recommendations. Even if it were decided to register net flows of fables transactions in the national accounts and the balance of payments, it would be useful to enlarge the coverage of globalization statistics and recommend publishing gross data on the activities of fables enterprises similar to data on multi-national companies.

Conclusion

12. The problems with registration of fables enterprises in the national accounts and the balance of payments have become important in Israel in the last few years. We suspect that such problems may also affect accounts in other countries. We are not aware of any proposals of solutions to such problems, and propose that the subject be raised for discussion in the international statistical offices.