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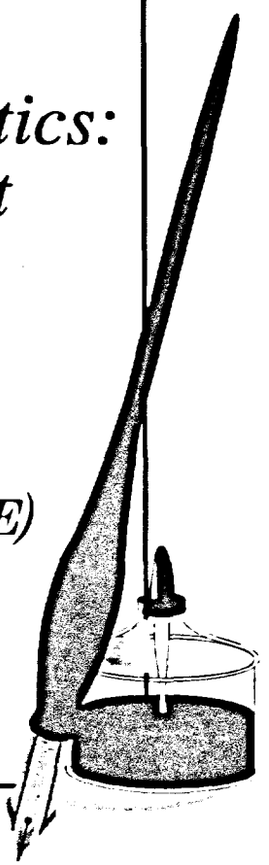
POLICY STAFF COMMENTARY No. 3

Trade and Direct Investment Statistics: The Twain Have Met

James McCormack
Policy Analyst

Economic and Trade Policy (CPE)
Policy Staff

(May 1994)



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Trade and Direct Investment Statistics: The Twain Have Met

As the international economy has become more integrated, rendering national boundaries less important in delineating markets, the adequacy of standard cross-border trade statistics has been brought into question. At the risk of oversimplifying, it is no longer the case that firms centralize production facilities in their domestic market to service both domestic and foreign customers. Now, the production facilities of large corporations are often located in various countries and often form part of a single, integrated manufacturing process with considerable intra-firm trade and trade in intermediate products (inputs).

In the collection and dissemination of any statistics there are two potential problems: items are included that should not be, and items that should be included are not. The international economic developments mentioned above have prompted several investigations into the latter problem with respect to trade statistics.[1]

In December 1993, the *Survey of Current Business,* a U.S. Department of Commerce publication, contained an article entitled "Alternative Frameworks for U.S. International Transactions". Its authors -- J.S. Landefeld, O.G. Whichard, and J.H. Lowe -- compared the trade statistics currently reported by the Department of Commerce with three sets of adjusted trade statistics that attempt to better reflect the international activities of multinational enterprises.

The three sets of adjusted data are derived from statistical reform proposals by the National Academy of Science (NAS), DeAnne Julius and the authors of the aforementioned Department of Commerce publication. In all cases, cross-border trade data are combined with information on sales and purchases abroad by U.S.-owned foreign companies, and sales and purchases in the U.S. by foreign-owned U.S.-based companies. The intention is to broaden the traditional definition of international trade to include sales by foreign affiliates. The practical result, in each case, is that a U.S. trade deficit turns into a trade surplus.

[1] The Industry Committee of the OECD has a working party studying ownership-based trade data, as does the Statistical Office of the European Community.

Balance of Payments Data

Balance of payments data record transactions between national residents and non-residents. As such, they include the cross-border trade of direct investment enterprises, but not their sales or purchases in the country of location. The exclusion of local sales and purchases from trade data is consistent with the view that foreign affiliates are residents of their country of location, not their country of ownership. The three alternative frameworks reverse the traditional view and treat foreign affiliates according to their country of ownership, not their country of location.

Since balance of payments data are integrated with the national accounts, they are consistent with Gross Domestic Product (GDP) and Gross National Product (GNP) definitions. None of the activity of foreign affiliates is recorded as part of the investor country's GDP. Its production is part of the GDP of the host country. As for GNP, the direct investor's share of profits is included, since it is income derived from domestically supplied factors of production. Exports are included in (and imports excluded from) both the GDP and GNP of the exporting (or importing) country -- the country of location -- regardless of the exporting (or importing) firm's country of ownership.

National Academy of Science Proposal

The NAS proposal calculates the net U.S. sales to foreigners as the sum of the net U.S. cross-border sales to foreigners by domestically owned companies, the net sales to foreigners by foreign-based affiliates of U.S. companies, and the net U.S. sales to U.S.-based affiliates of foreign companies.[2]

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[2] Net U.S. cross-border sales to foreigners by domestically owned U.S. companies is calculated as follows:

> Subtract U.S. exports to foreign affiliates of U.S. companies and exports by U.S. affiliates of foreign companies from total U.S. exports to obtain an estimate of cross-border exports by domestically owned U.S. companies to foreigners. Subtract imports from foreign affiliates of U.S. companies and imports by U.S. affiliates of foreign companies from total U.S. imports to obtain an estimate of cross-border imports by domestically owned U.S. companies from foreigners. Subtract the import estimate from the export estimate to produce net cross-border sales to foreigners by domestically owned U.S. companies.

Net sales to foreigners by foreign-based affiliates of U.S. companies is calculated as follows:

> Subtract sales by foreign affiliates to the U.S. and to other foreign affiliates of U.S. companies from total sales. Subtract local (non-U.S.) purchases of goods and non-factor services by

Using the NAS net sales measure, the 1991 United States trade deficit of U.S. $28 billion (as reported in the balance of payments) becomes a sales surplus of $164 billion (see Table 1).

The contribution the NAS proposal makes is to allow a better understanding of the foreign market share of domestically owned foreign-based affiliates and to provide a more comprehensive measure of trade. The activities of multinational enterprises are not entirely captured by standard balance of payments data, at least not from an ownership perspective.

Another positive aspect of the NAS approach is its drawing out the relationship between international trade and direct investment. The foreign affiliate sales of domestically based companies can indirectly induce foreign sales from the parent company, i.e., foreign direct investment leading to exports. Some companies might use their foreign affiliates primarily as marketing posts from which they develop export business.

One drawback, however, is that, if foreign affiliates are in fact marketing posts, the NAS approach would overstate their importance by attributing export sales to them. If a large cross-border sale from a company's domestic base -- a legitimate export in the traditional sense -- is followed by smaller service-type sales by foreign affiliates, then the affiliates facilitate trade and provide post-sale services but do not necessarily generate trade.[3]

Since repatriated profits already show up in the current account, there is an argument to the effect that the expansion of international trade statistics to include the sales of foreign affiliates somehow double counts the affiliates' activities. This argument ignores the basic framework of the national accounts. The output and

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foreign affiliates of U.S. companies from the result of step one to obtain net sales to foreigners by foreign affiliates of U.S. companies.

Net U.S. sales to U.S.-based affiliates of foreign companies is calculated as follows:

Subtract sales by U.S. affiliates of foreign companies to other U.S. affiliates and to other countries from their total sales. Subtract the step one result from U.S. affiliates' purchases of goods and non-factor services in the U.S. to obtain net U.S. sales to U.S. affiliates of foreign companies.

[3] Of course, the opposite argument could be made. The large cross-border export might not have taken place without the post-sale support available from foreign affiliates.

profits of all companies are counted in the expenditure and income accounts, respectively, and there is no double counting. If foreign affiliates were treated like domestic firms, their foreign sales would show up as exports on the expenditure side and their profits would show up on the income side.[4]

Although the balance of payments includes repatriated profits, they are not a sufficient indicator of the foreign activities of domestically-based multinational companies. In 1991, the sales of U.S. foreign-based affiliates accounted for 85% of total U.S. multinational sales to unaffiliated foreigners. Only 15% was exported directly from the U.S. to such customers. Thus, standard export statistics miss 85% of such international activities of U.S. multinationals. Profit repatriation captures some business activity, but there might be tax or other reasons why the profits of foreign affiliates are not wholly repatriated, or are only repatriated at certain times of the year.

An important weakness of the NAS proposal is that the new export statistics would no longer have the same implications for domestic factor employment. The purchases of goods and services from foreign firms are deducted from sales to arrive at a net foreign sales figure, but the payments to foreign capital and labour are not. As a result, an increase in net sales to foreigners could have a positive impact on foreign employment (e.g., the labour force of the foreign-based affiliate) and no impact on domestic employment. This is quite different from the employment implications that can be drawn from currently available trade statistics.

Julius Proposal

The Julius method avoids the factor employment problem of the NAS proposal by excluding payments to labour and other factors of production as well as the local purchases by foreign affiliates in arriving at a net sales figure. By netting out all payments to (and receipts from) foreigners, the foreign affiliate is treated as a part of the investor country's firm and, statistically, is no different than any other domestic firm engaged in exports. Although the employment effects of an increase in net foreign sales are still potentially ambiguous, since foreign and domestic labour markets can independently experience employment gains, at least the payments to foreign labour (and capital) do not affect net foreign sales data.

[4] It is important to recognize, however, that none of the three proposals suggests altering the national accounts to integrate the new trade statistics. All the proposals are meant to supplement the data already available.

An example illustrates what is and is not included in the Julius calculation of net foreign sales. Consider a U.S. company that is engaged in cross-border exporting and has foreign affiliates engaged in local sales. Net foreign sales of the firm are calculated by adding cross-border exports to local sales (net of payments to non-U.S. factors) of the foreign-based affiliates. To ensure no double counting, U.S. cross-border exports that are imports of foreign-based U.S. affiliates are subtracted out of local sales.

While the Julius method also transforms the 1991 U.S. trade deficit into a surplus, it is considerably smaller than the NAS surplus, at $24 billion (see Table 1).

Residency-Based Approach

Landefeld, Whichard and Lowe (LWL) present an alternative approach to determining the contribution of multinational firms to international trade by reworking standard balance of payments data. It is an attempt to combine the additional information available from company ownership (available in the NAS and Julius proposals) with standard balance of payments residency concepts. The proposal keeps the standard measure of cross-border trade, but breaks down the total figures to reflect the portions accounted for by affiliated trade.

The advantage of the residency-based approach is that it maintains the balance of payments relationships, particularly those between output and the location or ownership of factors of production. It simply adds the net receipts of foreign affiliates to standard trade data to estimate a new measure, termed net exports. Like the Julius proposal, the residency-based approach excludes the returns to foreign supplied factors of production in net U.S. sales to foreigners and excludes the returns to U.S.-supplied factors of production in net foreign sales to the United States.

The residency-based approach also results in a 1991 trade surplus of $24 billion (see Table 1).

We conclude that the Julius and LWL approaches are better than the NAS proposal in determining the effects on the domestic economy of foreign sales since they explicitly exclude foreign factor payments from net foreign sales calculations. From an exporting firm's point of view, the NAS proposal indicates the global extent of its activities, including production and sales.

Value-Added

Since the NAS proposal includes payments to foreign factors of production as part of foreign sales, the net sales figure tells us nothing about domestic value-added. In fact, a high net sales figure could be misleading since most value-added is attributable to factors of production in the affiliate's host country. In 1991, for example, the U.S. share of the value-added of U.S. companies' foreign affiliates was about 9%. The U.S. share of the value-added of U.S.-based affiliates of foreign companies was 84%.

Balance of payments trade data can also be somewhat misleading in terms of value-added, since exports contain embodied imports. It is possible for some industries, particularly in manufacturing, to report large export volumes in the standard trade statistics, but to add little domestic value. The issue of domestic value-added in Canadian trade is one that the Economic and Trade Policy Division (CPE) will investigate in some detail in an upcoming Staff Paper.

Table 1
Comparison of U.S. Trade Balance Under Alternative Frameworks, 1991
(Billions of U.S. dollars)

	Residency-based frameworks		Ownership-based frameworks	
	Cross-border trade in goods and services	LWL (1) residency-based proposal	National Academy of Science proposal	Julius proposal
U.S. Sales to foreigners	581	632	816	2,523
U.S. purchases from foreigners	609	608	652	2,499
Balance	-28	24	164	24

(1) Landefeld, Whichard and Lowe