Alternative Frameworks for U.S. International Transactions

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THIS ARTICLE presents alternative measures of U.S. international sales and purchases of goods and services that combine information on cross-border trade with information on sales and purchases abroad by U.S.-owned foreign companies and on sales and purchases in the United States by foreign-owned U.S. companies. The article explains and evaluates two previously suggested measures based on ownership, introduces a new residency-based measure, relates these measures—each of which is derived from its own distinct framework—to standard balance of payments measures, and illustrates them with experimental estimates derived from the most recent Bureau of Economic Analysis (BEA) data.

The new residency-based measure introduced in this article combines the standard balance on trade in goods and services between residents and nonresidents of the United States (cross-border trade) with a measure of the net effect on the U.S. economy of the operations of U.S.-owned companies abroad and of foreign-owned companies in the United States. Like the balance on cross-border trade, the new measure identifies international transactions on the basis of residence, but it presents a different picture of the U.S. position in world markets:

- Under this new measure, the net balance of the United States on its global sales and purchases of goods and services was a surplus of $24 billion in 1991, compared with a deficit of $28 billion on cross-border trade alone (table 1).
- From 1981 to 1991, the surplus under this measure rose from $8 billion to $24 billion, whereas the deficit on cross-border trade alone rose from $16 billion to $28 billion.
- In contrast to its effects on balances, this measure has little effect on U.S. shares of world export markets. From 1981 to 1991, the U.S. share of world exports under the new measure rose from 14 percent to 15 percent; in comparison, the U.S. share of cross-border exports of goods and services rose from 12 percent to 14 percent. During the same period, the U.S. share of world imports rose from 13 percent to 14 percent under both the new measure and the measure based on cross-border trade alone.

This new residency-based measure builds upon previous efforts to integrate information on cross-border trade with information on international direct investment. Alternative frameworks suggested by a National Academy of Sciences (NAS) study panel and by DeAnne Julius use ownership rather than residency as the basis for identifying international transactions. They, too, present a different picture of the U.S. position in world markets from that obtained from analysis of cross-border trade alone:

- The NAS proposal—which is perhaps more reflective than standard balance of payments measures of the way companies view their worldwide sales—indicates a net U.S. sales surplus of $164 billion. In deriving this measure, affiliates' purchases of goods and services from foreigners are deducted from their sales, but their payments to foreign capital and labor are not. Consequently, the surplus under this proposal should be viewed more as an indicator of the globalization of the activities of multinational companies—the sales effectively controlled by U.S.- and foreign-owned firms—than as an indicator of the effects of these activities on the U.S. and foreign economies.
- The Julius proposal indicates a net U.S. sales surplus of $24 billion, the same figure produced by the new residency-based measure. Although based on ownership, the framework proposed by Julius results in the same balance as the residency-based alternative because in determining the balance, *all* payments by affiliates to foreigners are netted out; however, they are included in the gross trade flows rather than being deducted from sales as in the residency measure.

Table 1.—A Comparison of U.S. International Economic Performance Under Different Frameworks, 1991

[Billions of dollars]

	Residency-based frameworks		Ownership-based frameworks	
	Cross-border trade in goods and services	Alternative residency-based approach, including both cross-border trade and net sales through affiliates (table 4) [1]	National Academy of Sciences proposal (table 2) [2]	Julius proposal (table 3) [3]
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. Table 4 sources: Sales, line 1; purchases, line 14; balance, line 27.
2. Table 2 sources: Sales, sum of lines 5 and 17; purchases, sum of lines 10 and, with sign reversed, 23; balance, line 24.
3. Table 3 sources: Sales, line 1; purchases, line 15; balance, line 29.

Overview

Although cross-border exports and imports remain the variables of primary interest for conducting macroeconomic analysis of output and employment in a country, there is growing recognition that sales through foreign affiliates must be considered in conjunction with these traditional balance of payments variables in order to obtain a complete picture of the global business activity of a country and of the role its multinational companies and their foreign affiliates play in delivering goods and services to international markets. For U.S. multinational companies, an overwhelming majority of sales to unaffiliated foreigners are effected through affiliates: In 1991, for example, about 85 percent of total sales to unaffiliated foreigners by U.S. parent companies and their majority-owned foreign affiliates took the form of sales by affiliates, and only about 15 percent were direct exports by the parents. Information on sales through affiliates is particularly important for such purposes as supporting negotiations on trade and investment, monitoring the resulting agreements, and analyzing the global business activities of multinational companies.

In recognition of facts such as these, a study panel of the NAS, chaired by Robert E. Baldwin, has recommended that BEA develop an ownership-based supplement to the existing, residency-based balance of payments framework for the United States.[1] As envisioned by the panel, this supplement would measure U.S.-owned companies' and U.S. individuals' "net sales" to foreign-owned companies and foreign individuals. The net sales measure would cover both cross-border sales as defined for balance of payments purposes and sales through locally established direct investment enterprises (net of certain overseas expenses and excluding sales between entities with the same country of ownership). As explained later, the balances produced under this supplement differ from those under the standard, residency-based framework; they should be viewed as indicators of activities effectively controlled by U.S.- and foreign-owned firms, rather than, as in the standard balance of payments, as indicators of returns to domestic versus foreign factors of production from these activities. (The NAS supplement, like the other frameworks discussed in this article, confines itself to current-account transactions in goods and services and to transactions involving direct investment. It does not include information on other current-account transactions (specifically, unilateral transfers and income on portfolio investment), nor does it attempt to construct ownership-based measures of capital-account transactions.)

Prior to the NAS proposal, a somewhat different ownership-based framework was proposed by DeAnne Julius.[2] Julius' proposal is similar to the NAS proposal in that it explicitly identifies and separately tabulates sales and purchases of direct investment enterprises. However, it dif-

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1. National Research Council, Panel on Foreign Trade Statistics, *Behind the Numbers: U.S. Trade in the World Economy*, ed. Anne Y. Kester (Washington, DC: National Academy Press, 1992). See especially chapter 1 ("Supplementing the Balance of Payments Framework") and Appendix A ("Sales and Purchases of Goods and Services Between Americans and Foreigners").

2. DeAnne Julius, *Global Companies and Public Policy: The Growing Challenge of Foreign Direct Investment* (New York, NY: Council on Foreign Relations Press, 1990).

fers in its method of recording transactions and in its definition of local expenses. Also unlike the NAS proposal, Julius' proposal produces a net sales balance equal to the sum of the balances on goods, services, and direct investment income as conventionally measured.

Considerable interest in alternative accounting frameworks for trade in goods and services has also arisen outside the United States. A working party of the Industry Committee of the Organisation for Economic Co-operation and Development and professional staff at the Statistical Office of the European Communities (EUROSTAT) are studying the collection and preparation of ownership-based data. In both cases, information on sales through direct investment enterprises, sometimes referred to as "establishment trade," is viewed in conjunction with information on cross-border trade flows.

Although applicable to both goods and services, the concepts reflected in these proposals are particularly important for many types of services—such as advertising, engineering, legal, and other services—that are difficult, and sometimes virtually impossible, to deliver to foreign markets through cross-border trade.[3] For most of these business, professional, and technical services, delivery typically must take the form of face-to-face transactions adapted to local laws, customs, and needs. As a result, with a few exceptions (travel and transportation are the largest), services tend to be delivered internationally mainly through direct investment enterprises located in the country of the purchaser rather than through cross-border transactions between residents and nonresidents.

After briefly explaining standard methods of accounting for direct-investment-related activity, this article reviews the NAS and Julius proposals for supplementing the balance of payments framework, illustrates them using the most recent BEA data available, and then introduces and illustrates an alternative measure that provides additional information on ownership while retaining the concept of residency as its fundamental organizing principle.[4] By retaining the residency concept, this new measure also maintains consistency with internationally recognized standards for measuring production and determining its location, and it maintains the focus of attention on the effects of direct investment activities on the U.S. economy rather than shifting the focus to measurement of the relative performance of U.S.- and foreign-owned firms.

Although these frameworks are different methodologically, they each explicitly record sales totals for direct investment enterprises that, together with the totals for cross-border trade, can be used to analyze the worldwide operations of multinational companies and the channels they use to deliver goods and services to international markets. Each of the proposals should be viewed as potentially supplementing, rather than supplanting, the existing balance of payments accounts, which are integrated with the national income accounts and are needed for macroeconomic analysis of the effect of international transactions on the domestic economy. There may be some basis for viewing the new measures, along with the conventional trade measures, as indicators of the ability of a country's companies to compete in world markets; however, it should be kept in mind that the performance of specific groups of firms, although important, may be overshadowed in the determination of these measures by broader macroeconomic factors, such as exchange rates, differences in rates of economic growth, and differences between rates of saving and investment in the United States and abroad. Furthermore, a trade surplus or deficit, however defined, is not necessarily indicative of success or failure in world markets: For example, in a country with national saving that is insufficient to finance its domestic investment, a deficit may merely reflect the transfer of resources into the country to finance the shortfall of saving (or the excess of spending over production).

The proposals discussed in this article should be regarded as experimental rather than definitive, inasmuch as none of them is completely free of conceptual difficulties. The same can be said of the accompanying estimates shown in tables 1–4: Not all of the data that would be needed to construct ideal estimates are now available, and for the purposes of this article, it was not possible to make some adjustments that probably would be desirable in a formal, ongoing series. Because the regular production of high-quality estimates of international trans-

3. For the last 4 years, BEA has provided detailed information on both cross-border services transactions and on sales of services through affiliates in the September SURVEY OF CURRENT BUSINESS. The two types of information have not, however, been integrated into a formal framework along the lines discussed here.

4. An earlier proposal for compiling balance of payments transactions on an ownership basis should also be acknowledged: Evelyn Parrish Lederer, Walther Lederer, and Robert L. Sammons, *International Services Transactions of the United States: Proposals for Improvement in Data Collection*, a report prepared for the Departments of State and Commerce and the Office of the U.S. Trade Representative (Washington, DC, 1982). This proposal was narrower in purpose than the two that are discussed here, however, in that it was designed to account for international business only in specific types of services rather than to provide a comprehensive framework.

actions on an alternative basis would require substantial resources and the resolution of several significant data and conceptual problems, BEA has no current plans to produce such estimates on an ongoing basis. Rather, it is hoped that this article will stimulate discussion of the issues involved and illustrate what can be accomplished with currently available information.

Standard balance of payments accounts

Traditionally, balance of payments accounts have included the cross-border trade of direct investment enterprises with their country of ownership and with other foreign countries. They have not, however, recorded the sales or purchases by these enterprises, or "affiliates," in their country of location, although these sales and purchases do affect the balance of payments in the sense that they are among the determinants of direct investment income and may affect cross-border exports and imports indirectly.[5] The exclusion of local sales by affiliates follows from the purpose of the accounts—to record transactions between residents and nonresidents, with a view to providing information needed to measure the level and geographic location of production and to gauge pressures on foreign-currency markets—and from the usual procedure of regarding an affiliate as a resident of its country of location, not of its country of ownership. Thus, a foreign investor's receipt of income from an affiliate—consisting of reinvested earnings plus interest and dividends—is considered an international transaction, to be recorded by the investor country as a receipt of factor income from abroad and by the host country as a payment of factor income to foreigners; an affiliate's gross sales in its country of location, in contrast, are regarded as transactions occurring wholly within a single country and, thus, are not to be recorded in the balance of payments of either the investor country or the host country.

With respect to measures of aggregate economic activity, none of the activity of an affiliate is recorded in the gross domestic product (GDP) of the investor country, inasmuch as that aggregate measures only production occurring within the country and excludes any production attributable to enterprises located abroad, even if domestically owned. However, the direct investor's share of an affiliate's profits (after deduction of foreign income taxes) is included in the gross national product (GNP) of the investor country, inasmuch as that aggregate measures all production attributable to domestically supplied factors of production, irrespective of the location of production. By the same reasoning, an affiliate's production is included in the GDP of its host country, but the direct investor's share of its profits is excluded from the host country's GNP. Goods and services produced for export are uniformly included in both the GDP and GNP of the exporting country, irrespective of the destination of the exports, the exporting firm's country of ownership, and the affiliation, if any, between exporter and importer; similarly, imported goods and services are uniformly excluded from the GDP and GNP of the importing country.[6]

National Academy of Sciences proposal

As indicated earlier, the NAS study panel proposed an ownership-based measure of net U.S. sales to foreigners.[7] This innovative proposal views international transactions from the perspective of the worldwide operations of multinational companies and provides comparable measures of international business activities of U.S.- and foreign-owned firms, whether conducted through cross-border trade or through local sales by affiliates. Because the proposal focuses on the global sales of multinational companies, it is helpful in assessing *U.S.-owned businesses'* shares of foreign markets. In many respects, its view of trade is more reflective of the view held by companies and official trade representatives in developing international trade policy and assessing U.S. trade performance than one covering cross-border trade alone. The NAS proposal also has been instrumental in stressing the need to develop additional information on ownership relationships and on the methods used by multinational companies to service international markets.

In presenting its proposal, the NAS panel defined the term "foreigners" to include U.S. affiliates of foreign companies and to exclude foreign

5. The description given here is consistent with current methodology for compiling the U.S. international transactions accounts, with the new, fifth edition of the International Monetary Fund's *Balance of Payments Manual*, and with the 1993 revision of the international System of National Accounts. The balance of payments items that would not be affected by the adoption of one of the frameworks discussed in this article—capital flows, income on portfolio investments, and unilateral transfers—are not described here.

6. Exports may embody imported goods and services, but in computing GDP and GNP, an adjustment is made to subtract them from exports or other gross product components (consumption, investment, and government spending) in which they may be embodied, so that only the portion of exports representing domestic production remains in the total.

7. In *Behind the Numbers*, this measure is termed "net sales by Americans to foreigners." In this article, some measures defined by others have been redesignated in order to reduce ambiguity and, insofar as possible, to permit the use of consistent nomenclature within the article and among it, other SURVEY articles, and other BEA publications.

affiliates of U.S. companies. This definition follows from the NAS measure's ownership-based perspective: U.S. affiliates are regarded as foreigners because, although resident in the United States, they are foreign owned, and foreign affiliates are not regarded as foreigners because, although resident abroad, they are U.S. owned.

The net sales measure can be derived as the sum of three items: Net U.S. cross-border sales to foreigners by domestically owned companies, net sales to foreigners by foreign affiliates of U.S. companies, and net U.S. sales to U.S. affiliates of foreign companies.

Net U.S. cross-border sales to foreigners by domestically owned U.S. companies is computed in three steps. First, U.S. exports to foreign affiliates of U.S. companies and exports by U.S. affiliates of foreign companies are subtracted from total U.S. exports of goods and services to obtain an estimate of cross-border exports by domestically owned U.S. companies to foreigners.[8] Second, imports from foreign affiliates of U.S. companies and imports by U.S. affiliates of foreign companies are subtracted from total U.S. imports to obtain an estimate of cross-border imports by domestically owned U.S. companies from foreigners. Third, the import measure is subtracted from the export measure to produce net cross-border sales to foreigners by domestically owned U.S. companies.

Net sales to foreigners by foreign affiliates of U.S. companies is computed in two steps. First, sales by foreign affiliates to the United States and to other foreign affiliates of U.S. companies are subtracted from their total sales.[9] Second, local (non-U.S.) purchases of goods and nonfactor services by foreign affiliates of U.S. companies are subtracted from the result of step one to obtain net sales to foreigners by foreign affiliates of U.S. companies.

Net U.S. sales to (or if negative, as is the case, purchases from) U.S. affiliates of foreign companies is computed in two steps. First, sales by U.S. affiliates of foreign companies to other U.S. affiliates and to other countries are subtracted from their total sales.[10] This total is then subtracted from U.S. affiliates' purchases of goods and nonfactor services in the United States to obtain net U.S. sales to U.S. affiliates of foreign companies.

These computations are detailed in table 2 and are summarized and compared with balance of payments statistics in table 1. Using the standard balance of payments framework, the United States recorded a $28 billion deficit in trade on goods and services in 1991. Using the NAS net sales measure, in contrast, the United States had a positive sales balance of $164 billion, as positive balances on cross-border transactions and on transactions by foreign affiliates of U.S. companies were only partly offset by a negative balance on transactions by U.S. affiliates of foreign companies.[11]

Conceptual issues.—As noted earlier, the NAS proposal is helpful in assessing *U.S.-owned businesses'* shares of foreign markets. In the late 1980's and early 1990's, Robert E. Lipsey and the late Irving B. Kravis, using BEA data on multinational-company operations, conducted a series of studies showing that although the U.S. share of cross-border merchandise trade around the globe had declined, U.S. multinational companies' share—whether through companies located in the United States or located abroad—had changed little.[12] Like the Lipsey and Kravis approach, the NAS proposal focuses on the global sales of multinational companies; however, by considering local as well as cross-border sales by affiliates, it does so in a more comprehensive way.

Although the net sales measure is useful for assessing companies' sales performance in global markets and can provide insights into the important linkages between international trade and investment activities and the domestic economy, it may give misleading signals if used to gauge the effect of changes in foreign affiliates' sales on domestic income and employment. It is too gross a measure for most country-level macroeconomic analyses because it does not align a country's

8. Exports by the relatively small number of U.S. affiliates of foreign companies that have foreign affiliates of their own are subtracted twice in this computation, once as exports to foreign affiliates and once as exports by U.S. affiliates. The NAS panel was aware of the need for an adjustment to add back these exports, so that they are, in effect, only subtracted once, but it lacked the data needed to incorporate such an adjustment in its estimates. BEA has since identified the duplication and, in updating the NAS estimates, adjusted for it (table 2, line 4). A similar adjustment is reflected in the derivation of the ownership-based import measure (line 9).

9. Available data for sales to other foreign affiliates cover only sales to other affiliates of the same U.S. parent company.

10. Data on U.S. affiliates' sales to other U.S. affiliates are not available.

11. The attribution of balances to different groups of transactors may be less precise than is suggested by this statement or by the organization of table 2. For cases in which a cross-border sale is followed by a resale by an affiliate, credit for the sale is, in effect, accorded to the affiliate; yet, in many, if not most, such cases, the affiliate is merely an intermediary that facilitates sales by the cross-border exporter. For a discussion of the role of U.S. affiliates in facilitating the distribution of goods produced by their foreign parent companies, see "Merchandise Trade of U.S. Affiliates of Foreign Companies," SURVEY 73 (October 1993): 52–65.

12. See the following articles by Robert E. Lipsey and Irving B. Kravis: "The Competitive Position of U.S. Manufacturing Firms," *Banca Nazionale del Lavoro Quarterly Review* 153 (June 1985): 127–54; "The Competitiveness and Comparative Advantage of U.S. Multinationals, 1957–84," *Banca Nazionale del Lavoro Quarterly Review* 161 (June 1987): 147–65; and "Sources of Competitiveness of the United States and Its Multinational Firms," *Review of Economics and Statistics* 64 (May 1992): 193–201. See also Mangus Blomström and Robert E. Lipsey, "The Export Performance of U.S. and Swedish Multinationals," *Review of Income and Wealth* 35 (September 1989): 245–64.

sales with the use of only those factors of production that are either entirely located in (as with GDP) or owned by (as with GNP) residents of the country. This result follows from the fact that in deriving net sales, purchases of goods and services from foreigners are deducted from sales, but payments to foreign capital and labor are not. By not excluding payments to these foreign factors of production, a country's net sales to foreigners may reflect substantial payments that do not accrue to its own workers or investors.

Although some value added by an affiliate—specifically, its parent's share in its profits—is attributable to factors of production of the parent's country, most of it usually will be attributable to labor and other factors of production obtained in the affiliate's host country (or in some cases, in other countries). In 1991, for example, the U.S. content of the output of U.S. affiliates of foreign companies (value added plus local purchases) was 84 percent, and the foreign content of the output of foreign affiliates of U.S. com-

Table 2.—National Academy of Sciences Proposal

[Millions of dollars]

Line		1991
	U.S. cross-border sales to, and purchases from, foreigners:	
	Exports to foreigners:	
1	U.S. cross-border exports of goods and services, residence basis	581,197
2	*Less*: Exports to foreign affiliates of U.S. companies [1]	139,976
3	*Less*: Exports by U.S. affiliates of foreign companies [1]	108,434
4	*Plus*: Exports by U.S. affiliates to their foreign affiliates (included in both lines 2 and 3)	8,449
5	*Equals*: U.S. cross-border exports of goods and services, ownership basis	341,236
	Imports from foreigners:	
6	U.S. cross-border imports of goods and services, residence basis	609,117
7	*Less*: Imports from foreign affiliates of U.S. companies [1]	108,789
8	*Less*: Imports by U.S. affiliates of foreign companies [1]	186,945
9	*Plus*: Imports by U.S. affiliates from their foreign affiliates (included in both lines 7 and 8)	4,699
10	*Equals*: U.S. cross-border imports of goods and services, ownership basis	318,082
11	**Net U.S. cross-border sales of goods and services to foreigners, ownership basis (lines 5 − 10)**	**23,154**
	Sales and purchases by foreign affiliates of U.S. companies:	
12	Sales by foreign affiliates of U.S. companies	1,543,450
13	*Less*: Sales by foreign affiliates to other foreign affiliates of U.S. companies	246,208
14	*Less*: Sales to the United States by foreign affiliates of U.S. companies (line 7)	108,789
15	*Equals*: Sales by foreign affiliates to unaffiliated foreigners	1,188,453
16	*Less*: Local (non-U.S.) purchases of goods and nonfactor services by foreign affiliates of U.S. companies	713,394
17	**Net sales to foreigners by foreign affiliates of U.S. companies (lines 15 − 16)**	**475,058**
	U.S. sales to, and purchases from, U.S. affiliates of foreign companies:	
18	Local purchases of goods and nonfactor services by U.S. affiliates of foreign companies (U.S. sales)	731,530
19	Sales by U.S. affiliates of foreign companies	1,174,069
20	*Less*: Sales by U.S. affiliates to other U.S. affiliates of foreign companies	n.a.
21	*Less*: U.S. exports by U.S. affiliates of foreign companies (line 3)	108,434
22	*Equals*: Sales by U.S. affiliates to unaffiliated U.S. persons	1,065,635
23	**Net U.S. sales to U.S. affiliates of foreign companies (lines 18 − 22)**	**−334,105**
24	**Net sales by U.S. persons to foreigners (lines 11 + 17 + 23)**	**164,107**
	Addenda:	
	Value added abroad by foreign affiliates of U.S. companies and local (foreign) content of output:	
25	Sales by foreign affiliates of U.S. companies (line 12)	1,543,450
26	*Less*: Local (non-U.S.) purchases of goods and nonfactor services by foreign affiliates (line 16)	713,394
27	*Less*: Exports from the United States (line 2)	139,976
28	*Less*: Purchases from other foreign affiliates of U.S. companies (line 13)	246,208
29	*Plus*: Inventory change	−980
30	*Equals*: Value added by foreign affiliates of U.S. companies	442,891
31	Foreign content of foreign-affiliate output (lines 26 + 28 + 30)	1,402,494
	Value added in the United States by U.S. affiliates of foreign companies and local (U.S.) content of output:	
32	Sales by U.S. affiliates of foreign companies (line 19)	1,174,069
33	*Less*: Local (U.S.) purchases of goods and nonfactor services by U.S. affiliates (line 18)	731,530
34	*Less*: Imported goods and services (line 8)	186,945
35	*Less*: Purchases from other U.S. affiliates of foreign companies	n.a.
36	*Plus*: Inventory change	2,776
37	*Equals*: Value added by U.S. affiliates of foreign companies	258,370
38	U.S. content of U.S.-affiliate output (lines 33 + 35 + 37)	989,900

n.a. Not available.

1. Services transactions exclude, but conceptually should include, transactions with unaffiliated foreigners.

NOTE.—In this table, "foreigners" is defined from an ownership perspective; thus, it encompasses U.S. affiliates of foreign companies but does not encompass foreign affiliates of U.S. companies.

panies was 91 percent. In contrast to the NAS measures, the standard measures of exports and imports of goods, services, and income do align a country's sales with factor location or ownership, as do supplemental measures, such as the one proposed by Julius, that treat affiliates' locally obtained factor services as "purchases" by the investor country.

Because it does not explicitly measure the effect on the domestic economy of differences in the location of production, the net sales measure cannot serve as an indicator of the effect on national income of increases in multinational companies' sales. For instance, the effect on the U.S. economy of additional sales of Opel automobiles in Germany by General Motors' German subsidiary is already recorded in the standard balance of payments accounts as investment income earned by General Motors (GM) and as any additional exports by GM of parts and components to the subsidiary. Payments made by GM's affiliate to local suppliers and employees directly affect the German economy, not the U.S. economy. Any impact on the U.S. economy would be indirect, through the transmission of business cycles, and presumably much smaller than the direct impact on the host economy. As another example, given the high labor content in legal, engineering, and other professional services, the U.S. economy is affected by whether Fluor decides to "produce" engineering and design services for a construction project in Stuttgart at its headquarters in Irvine, California, or through its affiliate located in Germany.

Another reason the net sales measure cannot serve as an indicator of the effects of multinational-company activity on the domestic economy is that it does not take into account differences in ownership shares. Because U.S. companies' direct ownership shares of foreign affiliates may range from 10 to 100 percent, only a portion of the total profits earned by foreign affiliates accrues to U.S. parent companies and thus adds to U.S. national income.[13] An extra dollar of sales through a foreign affiliate that is wholly owned clearly adds more to U.S. national income (and to the U.S. direct investor's profits) than an extra dollar of sales through an equally profitable affiliate that is only 50-percent owned; the net sales method, however, gives equal weight to increases in the sales of all foreign affiliates, irrespective of the percentage of foreign ownership.[14]

Empirical issues.—Inclusion in an ownership-based framework of sales by affiliates that are not majority owned may cause double-counting in global totals and problems in identifying other foreign affiliates. For example, consider the case of 10 companies from 10 different countries, participating equally in a joint venture. If each investor country were to record 100 percent of the "net sales" of the venture, the actual sales would be overstated by a factor of 10. The NAS panel recognized this problem and considered two possible methods of addressing it: (1) Prorating transactions by ownership percentages, and (2) restricting transactions to be recorded on an ownership basis to only those involving majority-owned affiliates.[15] Perhaps the second method is the better choice, because it allows the presentation of comparable measures (that is, sales) for both cross-border transactions and transactions through foreign affiliates. This method would be consonant with U.S. generally accepted accounting principles, which stipulate that only majority-owned affiliates are to be included in companies' consolidated financial statements. In addition, from a practical standpoint, even though majority-owned foreign affiliates are probably able to identify sales to other majority-owned affiliates, they may find it difficult to identify sales to minority-owned affiliates.

Another issue that ownership-based accounts must address concerns the determination of country of ownership. Some affiliates are part of an ownership chain extending across several countries; for such indirectly held affiliates, duplication can occur if their sales are attributed both to the country of ultimate beneficial owner and to the countries of intervening parents in the

13. For example, in 1991, net income generated by foreign affiliates of U.S. companies was $77 billion; only about two-thirds, or $51 billion, of this total accrued to U.S. owners.

14. Even if only majority-owned affiliates are brought under the net sales approach (which, as discussed in the next section, might be considered as a means of avoiding duplication), this problem still exists because this approach, unlike others discussed in this article, does not treat returns to locally supplied capital as a purchase or cost of the investor country.

15. Although the accompanying tables cover all nonbank affiliates rather than only those that are majority owned, restricting their coverage to majority-owned affiliates would have had only a limited effect, because most affiliates are majority owned. For U.S. direct investment abroad, majority-owned affiliates accounted for 79 percent of the sales by all nonbank affiliates and for 93 percent of the direct investment income receipts in 1989 (the only recent year for which direct investment income can readily be disaggregated on the basis of ownership percentages). For foreign direct investment in the United States, income payments cannot readily be broken down by ownership percentage, but the share of sales by U.S. affiliates in 1989 accounted for by majority-owned affiliates was, at 82 percent, about the same as the comparable share for foreign affiliates. If only data for majority-owned affiliates were recorded on an ownership basis, income from other affiliates would still need to be recorded, but through standard recording methods for direct investment income rather than through a separate tabulation of sales and expenses.

chain. It could be argued that to avoid such duplication, country of ownership should be based on country of ultimate ownership rather than on country of foreign parent.[16]

A final issue that may arise in connection with the ownership approach concerns the difficulty of identifying all transactions between affiliates that have the same country of ownership but different parent companies. Because many U.S. companies have followed their client companies overseas in order to service the clients' foreign operations, a certain proportion of what are described as net sales to foreigners by foreign affiliates of U.S. companies probably are, in reality, sales to foreign affiliates of other U.S. companies. Conceptually, these sales should be included in the deduction for sales to other foreign affiliates that is made in computing net sales to foreigners by foreign affiliates of U.S. firms. Similarly, sales between U.S. affiliates of different foreign companies should be included in the deduction from total sales by U.S. affiliates in computing net U.S. sales to U.S. affiliates of foreign companies. In reality, such sales usually cannot be identified or reported to BEA because in most cases, reporters do not know the country of ownership of all the companies with which they do business.

Julius proposal

Another ownership-based approach is suggested by the work of DeAnne Julius (see footnote 2). Julius' method is similar to the NAS approach in that it is based on ownership, but because it deducts *all* payments to foreigners in deriving net sales, it—like the residency-based approach presented next—avoids most of the conceptual and empirical difficulties just described, at least insofar as the computation of balances is concerned.[17]

Unlike the NAS proposal, the Julius proposal defines local purchases by affiliates to include not only payments for goods and nonfactor services purchased from outside vendors, but also payments for labor and other factors of production employed within the firm. Under this proposal, the foreign affiliate is treated not as a resident of the host country, as in the standard accounts, but rather as a part of the investor country's firm operating in the host country. The affiliate's transactions with the host country are recorded on a gross basis, reflecting the ownership boundary between the firm and the rest of the host economy. As has been noted elsewhere, this netting of all receipts from foreigners against all payments to foreigners results in a trade balance equal, conceptually, to the balance on goods and services plus the balance on direct investment income in the balance of payments.[18]

The second respect in which the Julius approach differs from that of the NAS panel is in the recording methodology. Whereas the NAS panel used what is sometimes referred to as a "directional" methodology, recording the net of sales and purchases separately for both inward and outward direct investment, Julius suggests recording transactions on what could be termed an "export/import" basis. On this basis, foreign affiliates' local purchases of goods and services are recorded as a component of sales by foreigners to the United States rather than as a deduction from total sales by foreign affiliates; similarly, U.S. affiliates' purchases in the United States are recorded as a component of U.S. sales to foreigners rather than as a deduction from total sales by U.S. affiliates. There are both advantages and disadvantages with this approach: It produces larger gross flows of sales and purchases than does the directional methodology followed by the NAS panel and thus depicts more completely the total magnitude of two-way transactions between U.S.- and foreign-owned entities; however, it makes it harder than under the directional methodology to isolate and analyze the transactions of companies grouped on the basis of ownership. From the standpoint of the overall U.S. trade (or sales) balance, it is immaterial which method of recording is selected, for the choice of method alone has no effect on the balance.

The correspondence between Julius' net foreign sales balance and the balance on goods and services plus the balance on direct investment income in the standard balance of payments accounts suggests that one way of viewing the Julius measure is as a more gross variant of the standard accounts. Whereas the balance of payments

16. The accompanying tables define the country of ownership to be the country of the first foreign parent rather than that of the ultimate beneficial owner. However, the effect of making an adjustment for cases in which U.S. parent companies were, in turn, ultimately owned by foreigners likely would have been small: In 1991, sales by such parents accounted for 11 percent of the sales by all U.S. parents, and their foreign affiliates accounted for only 4 percent of the sales by all foreign affiliates of U.S. companies. If sales by affiliates of such foreign-owned U.S. parents were removed from ownership-based measures of "U.S. sales," these parents' direct investment income receipts would still need to be recorded, but in the standard manner rather than through a separate tabulation of sales and expenses.

17. The major difficulty that the Julius proposal shares with the NAS proposal is the empirical problem of identifying the ultimate beneficial owner (UBO). BEA collects information on ultimate beneficial ownership and could conceivably produce adjusted estimates on a UBO basis, but, as noted, the benefits of such an adjustment likely would be small.

18. Guy V.G. Stevens, "The Net Foreign Sales Balance of DeAnne Julius," Board of Governors of the Federal Reserve System, staff memorandum, July 25, 1990.

accounts reflect the net effect of subtracting the affiliate's purchases from its sales—specifically, the parent's share in the affiliate's net income—the estimates constructed by Julius show the purchases and sales separately.

The results of applying the Julius method to data for 1991 are shown in table 3.[19] The table shows that in 1991, total U.S. sales to unaffiliated foreigners (with "foreigners" defined, as before, from an ownership perspective) were $2,523 billion, compared with total sales by foreigners to unaffiliated U.S. persons of $2,499 billion; thus, the United States had a positive sales balance of $24 billion in 1991. While this balance equals the sum of the standard balances on goods, services, and direct investment income, it is produced by estimates that provide a considerably more detailed picture of the gross flows that produce the balance and of the channels of delivery that companies use to service international markets.[20]

Alternative residency-based approach

As an alternative to producing ownership-based estimates, the standard balance of payments accounts can be recast to provide more information

19. It should be noted that in this table and in table 4, items labeled "costs and profits" accruing to U.S. or foreign persons are computed residually, as sales less direct investment income and less certain trade flows that can be identified as affiliates' purchases. To the extent that some of the trade flows recorded in a given period may represent capital goods or goods used in producing for inventory, neither of which may enter into the affiliate's cost of goods sold during that period, the trade-flow and "costs and profits" items must be interpreted simply as flows of funds rather than as an allocation of factor and nonfactor payments related to current production. Over time, however, capital goods are depreciated and inventories sold, and in any event, capital goods and goods used in producing for inventory probably account for a relatively small share of total trade; thus, on average, the labeling of the items likely provides a generally accurate representation of their nature. In any case, the net sales measure as shown in table 3 is correctly measured, irrespective of the fact that the true composition of some of the expense items may at times deviate from that shown.

20. The $24 billion figure differs slightly from that derived from BEA's quarterly balance of payments accounts because the estimates presented in this article exclude direct investment income from affiliates in banking (which are not covered by BEA's financial and operating data for affiliates) and exclude the current-cost adjustment to income.

Table 3.—Julius Proposal

[Millions of dollars]

Line		1991
1	**Sales by U.S. persons to foreigners (lines 2 − 3 + 7)**	**2,522,962**
2	**U.S. cross-border exports of goods and services**	**581,197**
3	***Less*: Direct-investment-related U.S. exports**	**239,961**
4	To foreign affiliates of U.S. companies	139,976
5	By U.S. affiliates of foreign companies	108,434
6	Adjustment to remove duplication of exports by U.S. affiliates to their foreign affiliates (included in both lines 4 and 5)	–8,449
7	***Plus*: Local sales to U.S. affiliates of foreign companies or by foreign affiliates of U.S. companies**	**2,181,726**
8	U.S.-affiliate purchases from, and profits accruing to, U.S. persons	993,273
9	Total sales by U.S. affiliates of foreign companies	1,174,069
10	*Less*: U.S. imports to U.S. affiliates	186,945
11	*Plus*: Adjustment to add back imports to U.S. affiliates from their foreign affiliates	4,699
12	*Less*: Sales to other U.S. affiliates	n.a.
13	*Less*: Net payment of profits to foreign parents from sales by U.S. affiliates	–1,450
14	Sales by foreign affiliates of U.S. companies to unaffiliated foreigners	1,188,453
15	**Sales by foreigners to U.S. persons (lines 16 − 17 + 21)**	**2,498,612**
16	**U.S. cross-border imports of goods and services**	**609,117**
17	***Less*: Direct-investment-related U.S. imports**	**291,035**
18	From foreign affiliates of U.S. companies	108,789
19	To U.S. affiliates of foreign companies	186,945
20	Adjustment to remove duplication of imports to U.S. affiliates from their foreign affiliates (included in both lines 18 and 19)	–4,699
21	***Plus*: Local sales by U.S. affiliates of foreign companies or to foreign affiliates of U.S. companies**	**2,180,530**
22	U.S.-affiliate sales to unaffiliated U.S. persons	1,065,635
23	Foreign-affiliate purchases from, and profits accruing to, foreigners	1,114,895
24	Total sales by foreign affiliates of U.S. companies	1,543,450
25	*Less*: U.S. exports to foreign affiliates	139,976
26	*Plus*: Adjustment to add back exports by U.S. affiliates to their foreign affiliates	8,449
27	*Less*: Sales to other foreign affiliates	246,208
28	*Less*: Net receipts of profits by U.S. parents from sales by foreign affiliates	50,820
29	**Net sales by U.S. persons to foreigners (lines 1 − 15)**	**24,350**
	Addenda:	
30	Net U.S. cross-border exports (lines 2 − 16)	–27,920
31	Standard balance on goods, services, and direct investment income (equals line 29)	24,350

n.a. Not available.

NOTE.—In this table, "foreigners" is defined from an ownership-based perspective; thus, it encompasses U.S. affiliates of foreign companies but does not encompass foreign affiliates of U.S. companies.

Sales are designated as "local" based on whether they occur in the United States or in all other countries combined. Thus, "local" sales to foreigners by a foreign affiliate of a U.S. company, for example, include sales to all foreign (non-U.S.) persons, not just sales to persons in the affiliate's country of location.

on ownership. In so doing, the varied needs of data users can be met without giving up the linkage to economic activity in specific economies and the integration with broader national accounts that are among the virtues of standard balance of payments accounts. Table 4 shows one such reconfiguration. It retains the standard measures of cross-border trade in goods and services, and its key measure of activity by affiliates is conceptually equivalent to the conventional measure of direct investment income.[21] However, it separately records a number of details that show the data from a new perspective and that allow a more complete analysis of ownership relationships and of the scope and importance of intrafirm trade than is allowed by the conventional presentation.

In the estimates shown in table 4, as in the standard balance of payments and in the NAS proposal, the results of affiliates' activities in their countries of location are recorded on a "directional" basis: Net receipts by U.S. companies resulting from the operations of their foreign affiliates are recorded as a component of U.S. sales (exports) to foreigners, and net receipts by foreign companies resulting from the operations of their U.S. affiliates are recorded as a component of U.S. purchases (imports) from

21. Minor variances from the figures published in the U.S. balance of payments accounts exist for the reasons noted in footnote 20.

Table 4.—Alternative Residency-Based Approach

[Millions of dollars]

Line		1991
1	**U.S. exports (sales) (lines 2 + 7)**	**632,017**
2	**U.S. cross-border exports of goods and services, total**	**581,197**
3	To unaffiliated foreigners	412,066
4	To affiliated foreigners	169,131
5	To foreign affiliates of U.S. companies	122,127
6	To foreign parents of U.S. affiliates	47,004
7	**U.S. companies' net receipts from sales by their foreign affiliates**	**50,820**
8	Sales by foreign affiliates	1,543,450
9	*Less*: Foreign-affiliate purchases of goods and services from the United States	139,976
10	*Less*: Costs and profits accruing to foreigners	1,106,446
11	Employee compensation	196,979
12	Other	909,467
13	*Less*: Sales by foreign affiliates to other foreign affiliates	246,208
14	**U.S. imports (purchases) (lines 15 + 20)**	**607,667**
15	**U.S. cross-border imports of goods and services, total**	**609,117**
16	From unaffiliated foreigners	379,212
17	From affiliated foreigners	229,905
18	From foreign affiliates	89,558
19	From foreign parents	140,347
20	**Foreign companies' net receipts from sales by their U.S. affiliates**	**–1,450**
21	Sales by U.S. affiliates	1,174,069
22	*Less*: U.S. affiliate-purchases of goods and services from abroad	186,945
23	*Less*: Costs and profits accruing to U.S. persons	988,574
24	Employee compensation	173,911
25	Other	814,663
26	*Less*: Sales by U.S. affiliates to other U.S. affiliates	n.a.
27	**Net U.S. exports (imports) (lines 1 – 14)** [1]	**24,350**
28	Net cross-border exports (lines 2 – 15)	–27,920
29	Net receipts from sales by affiliates (lines 7 – 20)	52,270
	Addenda:	
	Composition of the content of foreign-affiliate sales (to nonaffiliates):	
30	Output sold to nonaffiliates or added to inventory, total (lines 8 – 13 plus inventory change)	1,296,262
31	Foreign content [2]	1,156,286
32	Value added by foreign affiliates of U.S. companies	442,891
33	Other foreign content	713,394
34	U.S. content (line 9)	139,976
	Composition of the content of U.S.-affiliate sales (to nonaffiliates):	
35	Output sold to nonaffiliates or added to inventory, total (lines 21 – 26 plus inventory change)	1,176,845
36	U.S. content	989,900
37	Value added by U.S. affiliates of foreign companies	258,370
38	Other U.S. content	731,530
39	Foreign content (line 22)	186,945

1. Equals the balance on goods, services, and direct investment income in the standard balance of payments accounts. Also equals net sales by U.S. persons to foreigners under the Julius approach (table 3, line 29).

2. Differs from foreign content as shown in table 2, line 31 by the amount of purchases from other foreign affiliates (table 2, line 28). In this table, the output whose content is being decomposed is only that sold to nonaffiliates (or added to inventory); thus, sales between affiliates are excluded. Table 2, in contrast, shows a decomposition of total output, including that sold to other affiliates.

foreigners. Although equivalent to direct investment income, the "net receipts" terminology used in the presentation to represent the difference between affiliates' sales and purchases—each of which is also shown in the table—is more suggestive of the underlying operations that generate the income. In accordance with its residency basis, the presentation retains the standard measures of cross-border trade in goods and services; however, it separately identifies the portions of the total that are accounted for by intrafirm, or affiliated, trade. In addition, the account provides addenda that break down the content of foreign affiliates' output into its U.S. and foreign components and that show the extent to which the local content of affiliates' output is attributable to the affiliates' value added or to other local content, including returns to local investors.

This framework is consistent with the needs of traditional economic accounting and analysis and maintains the strict correspondence between output and the location or ownership of factors of production that exists in the standard accounts. By retaining the residency concept, it maintains consistency with internationally recognized standards for measuring production and determining its location, and it keeps attention focused on the effects of direct investment activities on the U.S. economy. However, it encourages the user of the international accounts to look beyond the information on cross-border trade alone and to recognize that the overseas operations of foreign affiliates constitute an integral part of the nation's economic interaction with the rest of the world. Indeed, direct investment income differs fundamentally from income on portfolio investments: It represents U.S. companies' returns on sales to foreigners that—for reasons such as efficiency, lower transport costs, or avoidance of trade barriers—are made from foreign instead of U.S. locations, whereas portfolio income merely represents returns to passive investments in foreign stocks and bonds.

The residency-based framework suggested here adds many details needed for such uses as supporting international trade negotiations and economic policies toward multinational companies and assisting with the analysis of these companies' global operations. The key summary measure from this framework—termed "net exports," but viewing exports in a sense broader than its usual meaning—combines the standard balance on cross-border trade in goods and services with the net receipts from sales by affiliates. In 1991, U.S. cross-border exports of goods and services were smaller than U.S. imports—$581 billion and $609 billion, respectively (table 4, lines 2 and 15), for a deficit on cross-border trade of $28 billion (line 28). However, net U.S. receipts from sales by foreign affiliates of U.S. companies were much larger than net foreign receipts from sales by U.S. affiliates of foreign companies—$51 billion and −$1 billion, respectively (lines 7 and 20), for a surplus on net receipts of $52 billion (line 29). Combining the cross-border trade with the net receipts related to sales by affiliates yields exports (in the broad sense mentioned above) of $632 billion (line 1), imports of $608 billion (line 14), and a net export, or sales, surplus of $24 billion (line 27).

The $24 billion surplus is identical to that obtained under the Julius approach, although the latter is derived as the net of much larger gross flows, reflecting its use of an "export/import" recording methodology rather than the "directional" methodology used here. The surplus is much smaller than the $164 billion produced by the measure suggested by the NAS panel. However, as discussed earlier, that measure, being geared more to analyzing production attributable to domestic- and foreign-based multinational *companies* than to analyzing production attributable to U.S.- and foreign-supplied *factors of production*, includes the returns to foreign-supplied factors of production in net U.S. sales to foreigners and includes the returns to U.S.-supplied factors of production in net foreign sales to the United States. This definitional difference, together with the fact that foreign affiliates of U.S. companies obtain more factor services abroad than U.S. affiliates of foreign companies obtain in the United States, accounts for the difference between the NAS balance and the balance from the alternative residency-based framework. Alternatively, the difference can be said to result from an excess of value added abroad (less direct investment income, which is included in both measures) by foreign affiliates of U.S. companies over value added in the United States (similarly adjusted) by U.S. affiliates of foreign companies.[22]

22. Lois Stekler, in comparing the NAS measure with the conventional trade balance, has made a similar observation:

> The net sales balance . . . is approximately equal to the trade balance [on goods and services] plus the value added by U.S. direct investment abroad minus the value added by foreign direct investors in the United States. As long as the value added by U.S. businesses abroad is higher than the value added by foreign direct investors in the United States, the proposed measure will be more favorable than the traditional measure of the trade deficit.

See Lois E. Stekler, review of *Behind the Numbers*, *Journal of Economic Literature* 31 (September 1993): 1,461.

(As noted in the addenda to table 4, value added by U.S. affiliates of foreign firms in 1991 was $258 billion, while value added by foreign affiliates of U.S. firms was $443 billion.)

The gross flows under the alternative residency-based measure are smaller than both the estimates proposed by Julius and the NAS panel. However, the reason for the larger NAS flows is the omission from purchases of the payments to foreign capital and labor rather than, as in the case of the Julius approach, the gross recording of foreign affiliates' purchases in "imports" and of U.S. affiliates' purchases in "exports."

From 1981 to 1991, the U.S. surplus under the broadly defined net export measure rose from $8 billion to $24 billion, whereas the deficit on cross-border trade rose from $16 billion to $28 billion. Although in terms of balances, the new measure presents a significantly different picture from that presented by cross-border trade alone, in terms of shares in world totals, the differences are less significant, because income on direct investment is relatively small in comparison with cross-border trade in goods and services, both globally and for the United States. From 1981 to 1991, the U.S. share of world exports under this measure rose from 14 percent to 15 percent, while the U.S. share of world cross-border exports of goods and services rose from 12 percent to 14 percent.[23] From 1981 to 1991, the U.S. share of world imports rose from 13 percent to 14 percent both under the new measure and as measured by cross-border trade alone.

In addition to its usefulness in analyzing the economic effects on the United States of U.S. international sales and purchases of goods and services, whether effected through cross-border transactions or through sales by affiliates, the alternative framework can be used to derive other information that may be useful for specific purposes. For example, in addressing questions of market access, one might want to disregard local purchases by affiliates (which seldom would be subject to any sort of restriction) and ask what is the total of U.S. sales to unaffiliated foreigners. From table 4, this measure could be derived as the sum of cross-border exports to unaffiliated foreigners (line 3) and sales to unaffiliated foreigners by foreign affiliates of U.S. companies (line 8 minus the sum of lines 13 and 18). Total U.S. purchases from foreigners could be derived similarly. In addition, the framework could be built upon by incorporating subtotals and groupings of particular interest or new addenda lines; alternatively, auxiliary analytical tabulations could be developed.

23. The world totals used in deriving these shares are from International Monetary Fund, *Balance of Payments Statistics Yearbook* (Washington, DC: International Monetary Fund, various issues).