

This PDF is a selection from a published volume from the National Bureau of Economic Research

Volume Title: International Trade in Services and Intangibles in the Era of Globalization

Volume Author/Editor: Marshall Reinsdorf and Matthew J. Slaughter, editors

Volume Publisher: University of Chicago Press

Volume ISBN: 978-0-226-70959-8; 0-226-70959-0

Volume URL: <http://www.nber.org/books/rein09-1>

Conference Date: April 28-29, 2006

Publication Date: May 2009

Chapter Title: Improved Measures of U.S. International Services: The Cases of Insurance, Wholesale and Retail Trade, and Financial Services

Chapter Author: Maria Borgia

Chapter URL: <http://www.nber.org/chapters/c11606>

Chapter pages in book: (75 - 108)

---

## **Improved Measures of U.S. International Services**

### **The Cases of Insurance, Wholesale and Retail Trade, and Financial Services**

Maria Borga

---

The U.S. Bureau of Economic Analysis (BEA) compiles the official government statistics on U.S. international sales and purchases of private services. These estimates take a broad perspective by covering the two major channels of delivery—cross-border trade in services and sales of services through locally established direct investment enterprises, or affiliates. This broad perspective recognizes the key role in the delivery of services internationally played by affiliates that are located in—but are owned outside of—the markets they serve. It is also consistent with the view many firms take of their worldwide operations.

The bureau has undertaken a long-term improvement program for international services. The estimates of cross-border trade in private services have been upgraded by improving existing surveys, by initiating new surveys, and by identifying outside information that could be used to develop new estimates. The estimates of sales of services through affiliates have been developed by adding questions to the existing surveys on the operations of multinational companies.

These ongoing efforts to improve the data on U.S. international sales and purchases of services are partly in response to the increasing importance of these transactions in the world economy. To study the impact that the globalization of services is having on the U.S. economy, it is necessary to have complete and economically meaningful measures of international

Maria Borga is an economist at the U.S. Bureau of Economic Analysis.

The views expressed in this chapter are those of the author and do not necessarily reflect those of the Bureau of Economic Analysis. The author wishes to thank her colleagues at the U.S. Bureau of Economic Analysis, the organizers and participants of the NBER-CRIW Conference on International Services Flows, and two anonymous referees for their valuable suggestions and comments.

sales and purchases of services. The Bureau of Economic Analysis produces measures of the nominal value of exports and imports by type of service, which, when combined with estimates of prices for traded services, are essential for analyzing the impact that this growing trade in services has had, and will likely have, on growth in wages, in employment, and in productivity for the U.S. economy. In addition, international guidelines covering these transactions have become more detailed and specific in recent years.<sup>1</sup> Finally, the addition of services to the agenda in trade negotiations has required improved statistics to support the negotiations and assist in monitoring the resulting agreements, which, for services, cover sales through affiliates as well as cross-border trade.

The improvements to international services statistics discussed in this chapter pertain to three important services: insurance, wholesale and retail trade, and financial services. In a June 2002 article, BEA identified issues affecting the estimation of these services, including important data gaps and some estimates that were of limited usefulness to data users (Whichard and Borga 2002).<sup>2</sup> An example of a data gap is that the estimates of services sold through affiliates did not cover bank affiliates, because these affiliates were not required to report data on their sales of services to BEA. An example of a measure with limited usefulness is insurance services—cross-border trade in insurance services was measured as the difference between premiums and claims, which in a given period may bear little or no relationship to the value of services provided and can even be negative.

The new measure of cross-border trade in insurance services better represents the output of insurance companies by recognizing the services they provide that are funded by investment income instead of explicit fees, and by using a new measure of losses paid by insurers based on the long-run relationship between premiums and losses. This latter change will prevent anomalous results that could occur under the previous measure of premiums less actual claims, such as the trade deficit decreasing after a catastrophe's occurrence in the United States, as foreign insurers paid claims to their U.S. policyholders. The improved measure better captures the long-term trends in trade in insurance services, including the increased reliance on imports of reinsurance by U.S. insurance companies since 2001. In that year, imports of reinsurance services were \$14.5 billion, which climbed to

1. Guidance for compiling statistics on trade in services for the international transactions accounts is provided in *Balance of Payments Manual*, 5th edition (BPM5). More detailed guidance is provided in the *Manual on Statistics of International Trade in Services* (MSITS), which provides guidance for compiling data on both cross-border trade in services and services delivered through affiliates. For cross-border trade, MSITS is consistent with BPM5 but more detailed. For sales through affiliates, MSITS' recommendations draw on the 1993 *System of National Accounts*.

2. This article also discussed measurement issues concerning two other services not covered in this chapter: utilities and construction.

\$30.4 billion in 2006. By more accurately gauging the levels of and trends in imports and exports of insurance services, the new measure can be used to analyze the factors that are driving globalization in the insurance industry. It can be helpful in identifying the factors that determine where firms choose to reinsure their policies, in determining whether increased trade in insurance impacts the availability and the cost of insurance in the United States, and in examining the implications globalization has for regulating this industry.

In the International Transactions Accounts, the services of wholesalers and retailers in facilitating international trade in goods are embedded in the values of exports and imports of goods in accordance with the international guidelines. However, separate estimates of the value of distributive services for merchandise trade could be of interest because of the importance of these services to the U.S. economy. In 2005, wholesale and retail trade accounted for almost 13 percent of GDP; retail trade contributed more than 10 percent to real GDP growth, and wholesale trade almost 3 percent (Howell, Barefoot, and Lindberg 2006). These industries have also played a major role in the post-1995 acceleration in U.S. productivity growth. For example, Triplett and Bosworth found that between 1995 and 2001, the average annual multifactor productivity (MFP) growth in wholesale and retail trade, at 3.1 percent and 2.9 percent respectively, was more than double that for the private, nonfarm business sector, at 1.4 percent (Triplett and Bosworth 2004b).<sup>3</sup> Because the margins wholesalers and retailers earn are greater for some types of goods than for others, innovations that impact these margins could lead to changes in the amount of merchandise trade and in the mix of products that are traded. In addition, some innovations, such as reductions in the costs of identifying new suppliers, could increase the responsiveness of imports and exports of goods to changes in prices.

The improved measures of insurance, wholesale and retail trade, and financial services sold through affiliates will be comparable to the measures used in BEA's national and industry accounts. This point is particularly important because one of the uses of these statistics is to assess the share of U.S. services output produced by foreign-owned U.S. affiliates for negotiating and monitoring international agreements on trade in services. With the old measures, such shares could not be computed, either because the measure of sales through affiliates was not comparable to the corresponding national totals, as in the cases of insurance and wholesale and retail trade, or because of gaps in the coverage of the sales through affiliates statistics, as was the case for banks. In addition, for U.S. multinational cor-

3. Triplett and Bosworth attribute 24 percent of the MFP growth over this time period to wholesale trade and 32 percent to retail trade. However, as they state, some productivity growth may be incorrectly attributed to these industries due to technical reasons (Triplett and Bosworth 2004a).

porations (MNCs), the new measures will allow their total output of these services to be estimated, as well as the shares accounted for by the U.S. parent and its foreign affiliates. Thus, it will be possible to observe shifts in the MNCs' production of these services between U.S. and foreign locations, and to relate these shifts to changes in factors that influence the location of production, such as changes in relative labor costs. Finally, the improved measures will also increase the comparability between the measures of cross-border trade in services and of sales of services through affiliates, which could shed light on firms' choices to serve foreign markets through exports or through establishing affiliates in those markets.

To address these issues, BEA has developed new methodologies, initiated new data collections, and drawn on additional data from outside sources. These actions have closed some data gaps and resulted in improved estimates of some services. Some of these changes have already been implemented; others are still being developed.

This chapter begins with an overview of the data BEA provides on international services. It then considers the issues relevant to the measurement of insurance services, wholesale and retail trade services, and financial services.

## **2.1 Overview of BEA's Data on International Services**

The Bureau of Economic Analysis' data on international services cover the two distinct channels by which services are sold in international markets: cross-border trade and sales through affiliates. Cross-border exports and imports represent trade in the conventional sense and cover transactions between residents of the United States and residents of foreign countries. They include both transactions between unaffiliated parties and trade within multinational companies (intrafirm trade). These estimates are included in the International Transactions Accounts (ITAs). Most of the data used to produce these estimates are derived from BEA surveys.

Sales of services through affiliates represent services sold through the channel of direct investment. The data on sales of services through affiliates cover majority-owned affiliates and are derived from benchmark and annual surveys of direct investment that require affiliates' sales or gross operating revenues to be distributed among sales of goods, sales of services, and investment income. The estimates include sales to foreign residents through the foreign affiliates of U.S. MNCs and sales to U.S. residents through the U.S. affiliates of foreign MNCs. These sales are not considered U.S. international transactions because, under the residency principle of balance-of-payments accounting, affiliates of multinational companies are regarded as residents of the countries where they are located rather than of the countries of their owners. Thus, sales abroad by the foreign affiliates of U.S. MNCs are transactions between foreign residents, and sales in the

**Table 2.1** Private services trade: average annual growth rates, 1992 to 2006, and values, 2006

	Exports		Imports	
	Average annual growth rate (%)	Value in 2006 (billions of dollars)	Average annual growth rate (%)	Value in 2006 (billions of dollars)
Total private services	6.7	404.3	8.1	307.8
Travel	3.3	85.7	4.6	72.0
Passenger fares	2.1	22.2	7.0	27.5
Other transportation	5.6	46.3	7.5	65.3
Royalties and license fees	8.1	62.4	12.4	26.4
Other private services	9.9	187.8	11.5	116.5

*Note:* For purposes of comparison, U.S. exports of goods grew at an average annual rate of 6.2 percent between 1992 and 2006, and U.S. imports of goods grew at an average annual rate of 9.3 percent.

United States by the U.S. affiliates of foreign MNCs are transactions between U.S. residents.<sup>4</sup> However, the direct investors' shares of the profits earned on these sales are recorded as direct investment income under the income component of the ITAs.<sup>5</sup> The proposed measures of services sold through affiliates discussed in this paper will not affect the measure of direct investment income that appears in the ITAs.

In recognizing the important role that locally established affiliates play in supplying services to foreign markets, the General Agreement on Trade in Services (GATS) included this as one of the modes by which services are delivered in international markets—through a commercial presence (Mode 3). The *Manual on Statistics of International Trade in Services* (MSITS) recommends sales through affiliates as a basic indicator of Mode 3 transactions. However, it recognizes that for industries involving trade or financial intermediation, sales are not closely related to the value of services provided. The measures proposed in this paper provide a better measure than sales of the services provided by affiliates in three industry groups—insurance, wholesale and retail trade, and financial services.

In 2006, U.S. exports of private services were \$404.3 billion, and U.S. imports of private services were \$307.8 billion. In comparison, U.S. exports of goods were \$1,023.1 billion, and U.S. imports of goods were \$1,861.4 billion. Table 2.1 presents average annual growth rates between 1992 and 2006 and levels of imports and exports of services for 2006 for the five ma-

4. Data are collected on affiliates' sales of services to all destinations, but the estimates of international services focus on sales abroad by foreign affiliates of U.S. companies and sales in the United States by U.S. affiliates of foreign companies—that is, on the sales that are not included in U.S. cross-border exports or imports.

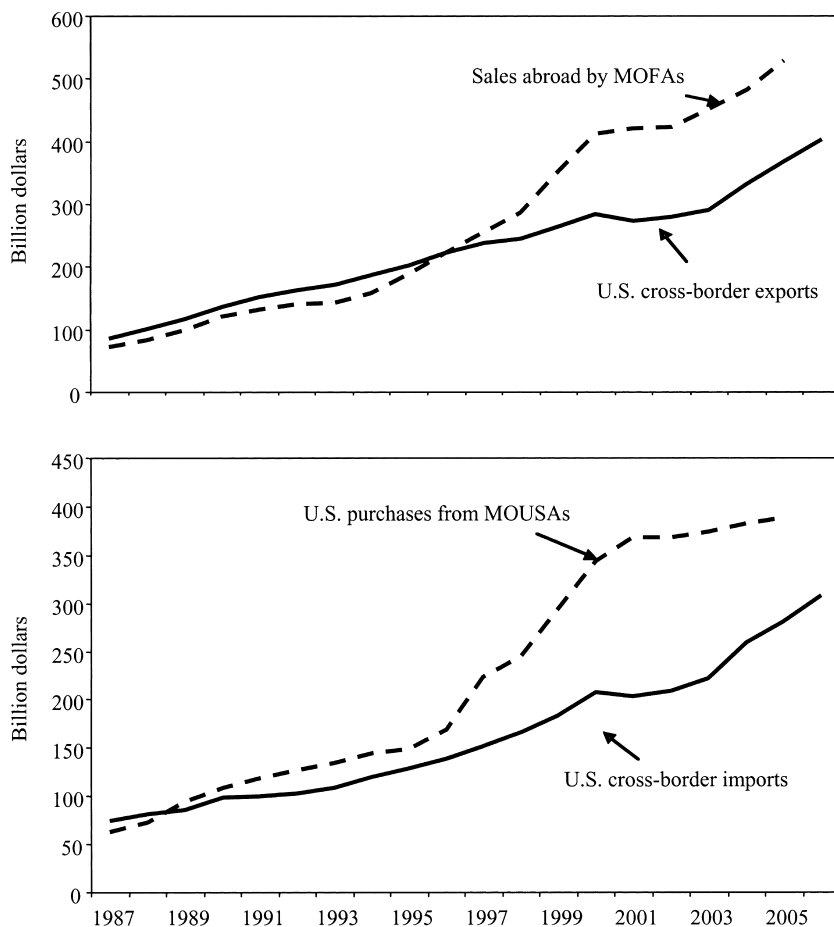
5. The Bureau of Economic Analysis produces an annual, ownership-based supplement to the current account portion of the U.S. International Transactions Accounts that highlights the participation of MNCs in the international markets for goods and services through both cross-border trade and sales through affiliates. See the appendix for a discussion of this ownership-based supplement.

major categories of private services shown in the ITAs: travel (which includes purchases of goods and services—such as food, lodging, and entertainment—by U.S. residents traveling abroad and by foreign travelers in the United States), passenger fares, other transportation (which includes freight and port services), royalties and license fees, and other private services (which include financial services, insurance, education, telecommunications, and an array of business, professional, and technical services). Other private services have been growing relatively fast and are the largest category for both exports and imports. Within other private services, financial and insurance services account for more than one-quarter of exports and two-fifths of imports. Despite relatively slow growth, travel is still the second-largest category for both imports and exports. Royalties and license fees are growing relatively fast.

Sales through affiliates is the larger channel of delivery for services and has been growing faster (figure 2.1). In 2005, the most recent year for which data are available, sales of services through the majority-owned foreign affiliates (MOFAs) were \$528.5 billion, and sales through the majority-owned U.S. affiliates (MOUSAs) were \$389.0 billion. As discussed in the following, there are differences in measurement and coverage that make comparisons of sales through affiliates to cross-border trade imprecise. However, the large gap between cross-border trade and sales through affiliates and the higher rates of growth—sales through MOFAs grew at an average annual rate of 10.7 percent between 1992 and 2005, and sales through MOUSAs grew at an average annual rate of 8.9 percent—indicate the importance of sales through affiliates as a channel through which companies sell services to foreign markets. This could be due to the fact that selling through locally established affiliates is the only practical method of delivery for many types of services because of the need for proximity in both time and space between the consumer and producer. In addition to measurement and coverage differences, precise comparisons of the relative size of the two modes of delivery cannot be made for specific types of services because the data on cross-border trade are classified by type of service, whereas the data on sales of services through affiliates are classified by the primary industry of the affiliate.

## **2.2 Insurance**

The economics literature provides two main conceptual views of the output of insurance companies. The first is that the insurance company provides a service by assuming risk from its policyholders; the second is that the insurance company serves to pool the risks of its policyholders. As Sherwood (1999) explains, a gross premiums approach to measuring output is consistent with the first concept (that of risk assumption). Under this approach, the goods and services purchased with the claims paid to poli-



**Fig. 2.1 U.S. international sales and purchases of private services, 1987–2006**

*Note:* Sales through MOFAs and purchases from MOUSAs are shown through 2005, the latest year for which data are available.

cyholders are considered to be intermediate inputs purchased by the insurance company and passed on to its customers. A net premiums approach, in which a measure of claims is subtracted from premiums, is consistent with the second concept (that of risk pooling). Under this approach, the difference between premiums and the measure of claims paid is used to measure the costs of maintaining the risk pool. The Bureau of Economic Analysis has adopted a net premiums approach, which is consistent with international guidelines for the compilation of economic statistics.

The measure of insurance companies' output will consist of three components. First, insurers provide financial protection against the realization



of specified risks faced by their policyholders. Second, they provide financial intermediation services; that is, insurers collect funds from policyholders, which are held as reserves, and invest these funds in financial or other assets. Third, insurers provide auxiliary insurance services, such as claims adjustment, actuarial services, and salvage services.

Economic models of the behavior of insurance companies assume that insurers maximize their profits by setting premiums given their expectations about future claims and investment income. The improved measure of insurance services will build on these models and will include estimates of all components of the services provided by insurers.

In the discussion that follows, the improved measure of insurance services will be discussed first for cross-border trade and then for sales through affiliates. Each section will begin with a description of the previous measures of insurance services, the shortcomings of these measures, and then a description of the changes that were made, or are being considered, to the measure of insurance services.

### 2.2.1 Cross-Border Trade

Prior to 2003, trade in insurance services was measured as premiums less actual losses (claims). The rationale behind this measurement of insurance services was that the portion of premiums remaining after provision had been made for losses could serve as a proxy for the operating expenses and profits—that is, the output—associated with this activity. The view of the insurance company that justified this measure was essentially that of a risk-pooling administrator, and premiums less losses provided a rough proxy for the administrative costs (and profits) associated with this activity. Under this view, only the portion of premiums not paid out in losses was treated as output of the insurance industry. The amount used for loss settlements simply reflected funds that, with the help of insurance companies, flowed from all policyholders to those policyholders who suffered losses.

A major shortcoming of the premiums-less-actual-losses measure is that losses can fluctuate from period to period in a way that bears little relation to the services provided. The fact that unusually large claims may be paid in a particular period does not reduce the value of services provided (or turn it negative), nor do unusually small claims raise the value of services provided. Hurricanes, floods, oil spills, and terrorist attacks are perils whose presence or absence may cause large fluctuations in claims that may not correspond to changes in the services provided or received. In the new measure, the relationship between claims and premiums over several years is used, which avoids these large fluctuations.<sup>6</sup> While the value of imports and exports in any given year under the new measure will be either higher

6. While normal losses are used in estimating the value of trade in insurance services, BEA continues to publish the actual losses in table 3 of the ITAs.

or lower than under the previous measure, the volume of transactions over several years will be roughly the same under the two measures. Measuring insurance services as premiums less claims also missed two important components of insurance output: investment income earned on technical reserves and auxiliary insurance services.

In 2006, U.S. imports of insurance services were \$33.6 billion, and exports were \$9.3 billion. United States residents paid foreign insurers \$65.3 billion in premiums and recovered \$29.3 billion in losses; foreign residents paid U.S. insurers \$23.3 billion in premiums and recovered \$10.9 billion in losses.

One distinguishing feature of cross-border trade in insurance services is the important role played by reinsurance. Reinsurance is the ceding of a portion of a premium to another insurer who then assumes a corresponding portion of the risk. It provides insurers with a tool for managing their risk exposure, including exposure to liability for events with such a high degree of risk or liability that a single insurer is unwilling or unable to underwrite insurance against their occurrence. In 2006, reinsurance premiums accounted for 96 percent of all U.S. payments of premiums and 76 percent of all U.S. receipts of premiums.

To measure the services provided by insurers more accurately and completely, three changes were made to BEA's estimate of U.S. trade in insurance. In the order they are discussed here, actual claims (which were deducted from premiums in calculating insurance services) were replaced by a measure that captures the long-term relationship between premiums and claims, which will be termed "normal" losses; a premium supplement, representing the investment income earned on reserves, was added to the measure, and the treatment of auxiliary insurance services was changed.

#### *Premiums Less Normal Losses*

To improve the estimates of imports and exports of insurance services (by reducing the large, random swings due solely to fluctuating losses), rather than measuring insurance services as premiums less actual losses, the new estimates are measured as premiums less normal losses, where normal losses are inferred from the relationship between actual losses and premiums averaged over several years (Bach 2003). One of the key factors for insurers when setting premiums is their expectations about the losses that will have to be paid. In a practical sense, a proxy for insurers' expectations must be used, because no information is available on what companies expect losses to be. A readily available indicator is the average of past actual losses in relation to premiums.

Normal losses comprise losses that occur regularly and a share of catastrophic losses that occur at infrequent intervals. Separate estimates are made for these two types of losses. For regularly occurring losses, a six-year arithmetic moving average of the ratio of actual losses to premiums is

used. Data for the current period are not included in the average, in order to achieve an *ex ante* concept of regularly occurring losses. Because comprehensive source data for insurance begin in 1986, estimates based on a six-year average begin in 1992.

Insurance companies expect that catastrophes will occur occasionally and allow for this in setting premiums. However, because catastrophic losses occur much less frequently than regularly occurring losses, they are assumed to affect loss expectations over a much longer period. Under the new methodology, catastrophic losses are added in equal increments to the estimate of regularly occurring losses over the twenty years following their occurrence to derive an estimate of normal losses. Thus, only a small fraction of catastrophic losses is factored into each year's calculation of insurance services.

Separate estimates of normal losses are calculated for primary insurance and for reinsurance. The ratio of losses to premiums is lower for primary insurance than for reinsurance because administrative and financial intermediation services differ for these two types of insurance. Primary insurance is more retail in nature—selling and writing a large number of individual policies to customers—and, thus, may have higher administrative and other costs than reinsurance, which involves fewer, larger transactions between insurance companies.

### *Premium Supplements*

Insurance premiums would be higher if insurance carriers were unable to earn income on funds held in reserves against future claims. In recognition of this fact, the international guidelines for national accounts in the 1993 *System of National Accounts* (SNA) included the income earned on technical reserves in its recommended measure of the output of the insurance industry. Technical reserves, which are regarded as assets of the policyholders, not of the insurance company, consist of prepaid premiums and reserves against outstanding losses. Investment income earned on the insurers' own funds is excluded from income on technical reserves. Insurers invest technical reserves, and the income earned on them is used to defray the expenses of providing insurance. The income is treated as accruing to the policyholders, who pay it back to insurers as supplements to cover the full cost of the insurance.

Similar to the use of normal losses in the new measure of trade in insurance services, estimates of the expected income on the technical reserves of insurance companies is used as a measure of premium supplements. The use of expected, rather than actual, investment income to measure premium supplements is intended to capture the *ex ante* concept of premium supplements; it is this expectation that insurance companies use in setting premiums to cover their expected losses and other costs.

Estimates of premium supplements for cross-border trade use the same

data and similar methodology employed in the National Income and Product Accounts (NIPAs; Chen and Fixler 2003). Data on investment income are from *Best's Aggregates and Averages: Property-Casualty* by A. M. Best Company. A. M. Best provides data on investment gains that are attributable to insurance transactions, as opposed to investment gains attributable to the insurers' own funds. The estimate of premium supplements for a given year is the result of multiplying an expected investment gains-to-premiums ratio by the actual premiums observed for that year. The ratio is a weighted moving average of the previous five years of ratios of actual investment gains to premiums. In the cross-border trade data, the expected investment gains-to-premiums ratio is estimated separately for primary insurance and reinsurance, in recognition of the fact that reinsurers may have different ratios of net gains to premiums than primary insurers.<sup>7</sup> The different ratios may arise because reinsurers hold larger reserves than primary insurers or because they hold them for a longer time.

Once these ratios have been calculated, they are applied to the estimates of premium receipts for primary insurance and reinsurance, which are obtained from BEA surveys of international trade in services, to derive premium supplements receipts from foreigners. Because similar data on investment income of foreign insurance companies are not available for payments, the ratio used for receipts is applied to the estimates of premium payments to foreigners in order to estimate premium supplements payments to foreigners.<sup>8</sup>

#### *Auxiliary Insurance Services*

Auxiliary insurance services cover such items as agents' commissions, actuarial services, insurance brokering and agency services, and salvage administration services. Under the *Balance of Payments Manual*, 5th edition (BPM5), insurance services should include agent commissions, and under the *Manual on Statistics of International Trade in Services* (MSITS), auxiliary insurance services should be included in the measure of insurance services. Beginning in 2001, BEA's surveys collected a full range of auxiliary insurance services as a single, distinct category. Previously, these services had been covered in a fragmentary way as parts of other services. For example, data on claims adjustment services were collected as a part of legal services, and data on actuarial services were collected as part of a residual ("other") category that included other services as well. Also be-

7. For details on the estimation of the expected investment gains to premiums ratios, see Bach 2004, 60–62.

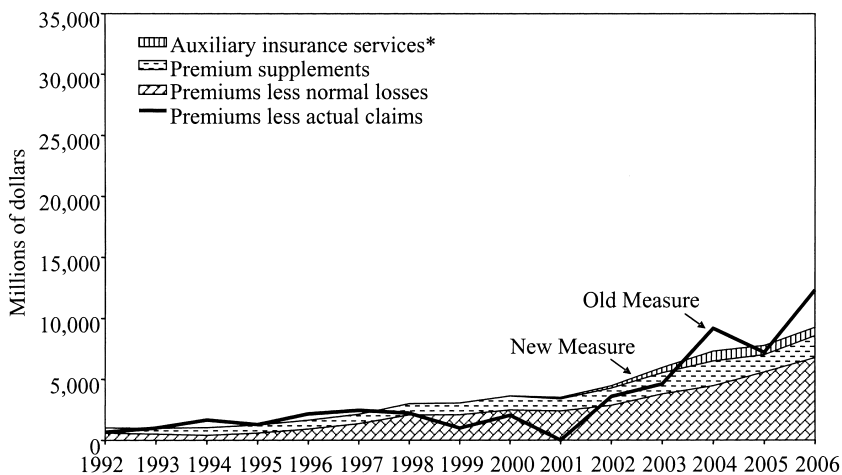
8. Because the balance of payments employs a double-entry accounting system, the value of the premium supplement transactions entered in the trade-in-services account must be offset elsewhere in the international transactions accounts. In this case, the offsetting entry is made by recording the value of supplements as income received by policyholders in the income accounts.

ginning in 2001, premiums were reported gross of commissions on BEA's surveys, and in the estimates, commissions were included in services auxiliary to insurance, rather than being subtracted from premiums, as was the case previously.

*Comparison of the Previous Measure with the New Measure*

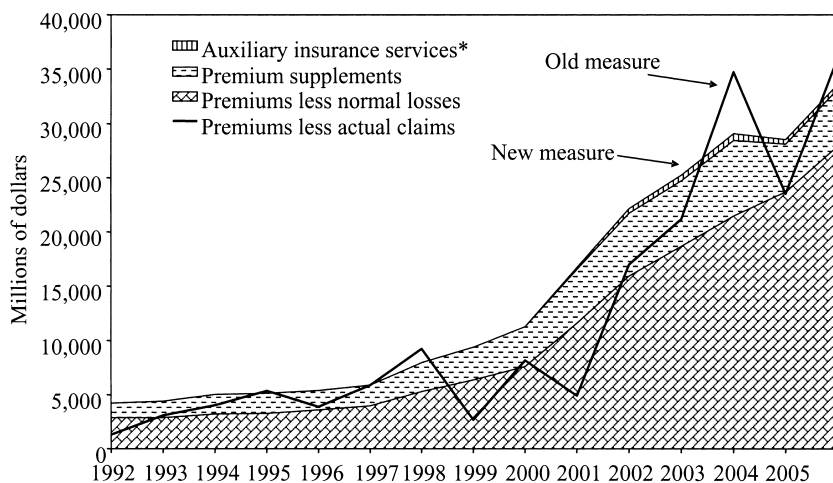
Figure 2.2 compares the previous measure—premiums less actual losses—to the new measure—the sum of (a) premiums less normal losses, (b) premium supplements, and (c) auxiliary insurance services—for U.S. exports of insurance services from 1992 to 2006. Figure 2.3 compares these measures for U.S. imports of insurance services from 1992 to 2006. The new measures reflect the long-term increase in exports and imports of insurance services while avoiding the dramatic swings in the estimates of insurance services due to fluctuating losses. While premiums supplements are a significant addition to the estimates of insurance services, the majority of insurance services are accounted for by the premiums-less-normal-losses component of the new measure.

The improved measure of insurance services will improve BEA's overall measure of insurance services but does not specifically address the distortions caused by tax avoidance discussed in Robert Lipsey's paper "Measuring International Trade in Services," included in this volume, because the improved measure captures the actual financial flows between countries based on the residency-based principle recommended in the international guidelines. The distortions discussed by Lipsey result from financial transactions occurring within multinational firms that may result in the at-



**Fig. 2.2** The old and new measures of exports of insurance services

\*Estimates of auxiliary insurance services are available only from 2001 forward.



**Fig. 2.3 The old and new measures of imports of insurance services**

\*Estimates of auxiliary insurance services are available only from 2001 forward.

tribution of output to foreign countries but in which little, if any, actual productive activity occurs abroad. Specifically, U.S. insurance companies may cede premiums to affiliated captive reinsurers abroad, resulting in U.S. imports of reinsurance services. However, most, or all, of the activity involved in the production of insurance services may occur in the United States.

### 2.2.2 Sales through Affiliates

This section discusses the current measure of insurance services sold through affiliates and planned changes to this measure. The proposed new measure is more economically meaningful and is more comparable to the measures of insurance services included in the estimates of cross-border trade in services and in the NIPAs. Experimental estimates are presented for sales through MOUSAs in 2002 and 2003; BEA plans to publish official estimates of sales of insurance services through affiliates in 2008.

One of the largest services sold through affiliates is insurance. In 2005, the MOUSAs of foreign MNCs classified in insurance sold \$77.2 billion in services to U.S. residents, and the MOFAs of U.S. MNCs classified in insurance sold \$94.4 billion of services to foreigners.

These estimates result from BEA's current methodology, which measures sales of insurance services through affiliates as services-related operating revenues. These revenues consist mostly of premium income, but they also include fees for auxiliary insurance services, such as claims adjustment or actuarial services. The current measure does not capture some important aspects of insurance services. First, it does not include a deduction for

the losses paid out by insurers. In this regard, it differs from the measures of insurance output recommended for economic accounting purposes and the measures of insurance services in the ITAs and the NIPAs. Second, it does not include premium supplements.

A more economically meaningful measure of the insurance services supplied through affiliates would include premiums less *normal* losses and an estimate of premium supplements. There is no need to change the current reporting to capture services auxiliary to insurance because revenues reported on BEA's surveys include receipts earned from providing auxiliary insurance services.

To allow for the construction of this type of measure of insurance services, BEA collected data on the premiums earned and losses paid by MOUSAs with operations in insurance on the 2002 benchmark survey of foreign direct investment in the United States (FDIUS). These data items were subsequently added to the follow-on annual surveys of FDIUS and the surveys of U.S. direct investment abroad (USDIA), beginning with the 2004 benchmark survey of USDIA. At the time of this writing, estimates of insurance services are only available for FDIUS for 2002 and 2003. These new data will be combined here with data on the domestic insurance industry from A. M. Best to estimate the new measure of insurance services sold through MOUSAs.

One significant difference from the cross-border trade data is that the data on sales through affiliates are classified by the primary industry of the affiliate. The Bureau of Economic Analysis' industry codes for affiliates divide insurance providers into two broad types of insurance: non-life and life insurance. Non-life insurance covers all risks except for death: damage from accidents, fire, natural disasters, and so on. Sales of services by affiliates classified in insurance reflect sales of insurance services, but may also include sales of other types of services. Likewise, it is possible for affiliates in other industries to have secondary operations in insurance. The new measure of insurance services will apply to all affiliates with insurance operations, regardless of their industry classification.

#### *Premiums Less Normal Losses*

As for the estimates of cross-border trade in insurance, the estimates of sales of insurance services through affiliates will use a measure of normal losses as a proxy for insurers' expectations. Normal losses consist of two parts: regularly occurring losses and a share of catastrophic losses. Separate estimates are made for these two types of losses.

Regularly occurring losses will be measured as the average of past actual losses in relation to premiums earned from annual data over a six-year period, using an arithmetic moving average. This is identical to the measure of regularly occurring losses used in the cross-border trade estimates. To avoid having to wait until six years of data have been collected from

MOUSAs to produce the first estimates, and to improve correspondence with the NIPA measure of insurance services of which these are a subset, data on the entire domestic insurance industry are used to construct the estimates.

If it were determined that a catastrophe affected the insurance sold through MOUSAs in a particular year, the same procedures that are followed for cross-border trade could be followed for sales through affiliates: catastrophic losses would be spread, in equal increments, over the next twenty years.

Table 2.2 shows the premiums earned and actual losses paid for the property and casualty and life and health insurance industries as reported by A. M. Best for the years 1996 to 2002. Beginning in 2002, the table also shows data reported by MOUSAs.<sup>9</sup> Because no catastrophic losses are evident in the period covered, normal losses consist solely of regularly occurring losses. The six-year moving average of the ratio of losses to premiums, or the normal loss ratio, was 76.1 percent in 2002. The normal loss ratio is then applied to the estimate of premiums earned to derive the measure of normal losses. Applying the 76.1 percent normal loss ratio to the \$63.3 billion in premiums earned yields normal losses of \$48.2 billion in 2002.<sup>10</sup> Thus, in 2002, premiums earned less normal losses were \$15.1 billion (\$63.3 billion less \$48.2 billion).

### *Premium Supplements*

Because BEA does not collect data on the investment income earned on technical reserves separately from other investment income, its data on total investment income earned by affiliates will have to be combined with information on the domestic insurance industry to estimate the premium supplements for MOUSAs.

Premium supplements are the investment income earned from insurers investing policyholders' assets on their behalf and that are available to defray the insurers' expenses. While it is true that life insurers invest policyholders' assets on their behalf, the vast majority of the investment income earned on these assets is allocated to actuarial reserves to meet the capital sums guaranteed to individual policyholders under the life insurance policies and is, thus, unavailable to defray insurers' expenses (these sums must

9. On the 2002 benchmark survey of FDIUS, only MOUSAs filing the long form—those with total assets, sales or gross operating revenues, or net income exceeding \$125 million for fiscal year 2002—were required to report the data on premiums earned and losses paid. The values in table 2.2 are reported data only and do not include any estimates for affiliates that were not required to report premiums and losses.

10. The difference of \$3.8 billion between the estimate of \$63.3 billion of premiums earned and the figure of \$59.5 billion in table 2.2 is the estimate of premiums earned by affiliates not required to report the data on premiums and losses. The premiums were estimated by assuming that premiums accounted for the same share of sales in insurance as they did for those MOUSAs that had reported these data.



**Table 2.2**      **Premiums earned and claims paid for U.S. insurance industry and MOUSAs, 1996 to 2003 (in millions of dollars)**

Year	U.S. insurance industry		MOUSAs that reported the data on premiums and losses		Ratio of actual claims to premiums (life and non-life insurance)		Normal loss ratios (six-year moving average of previous years [%])
	Property/casualty		Life/health		U.S. insurance industry (%)	MOUSAs (%)	
	Premiums earned	Losses paid	Premiums earned	Losses paid			
1996	263,351	172,346	377,362	311,249	—	75.5	—
1997	271,502	163,775	405,612	343,061	—	74.9	—
1998	299,690	175,319	454,454	369,887	—	72.3	—
1999	282,791	184,609	494,285	430,351	—	79.1	—
2000	294,024	200,943	548,434	455,474	—	77.9	—
2001	311,529	234,518	472,730	369,801	—	77.1	—
2002	355,739	244,695	504,471	366,564	59,525	77.1	83.0
2003					57,805	—	68.7

Source for U.S. insurance industry data: A. M. Best's *Aggregates and Averages: Property and Casualty Insurance* 2001, 190, and A. M. Best's *Aggregates and Averages: Life and Health* 2002, 60.

eventually be paid to the policyholders or their beneficiaries).<sup>11</sup> In the NIPAs, the investment income allocated to actuarial reserves is recorded as imputed interest paid by life insurance carriers in the period that it is earned. This investment income is, thus, not part of the services provided by life insurers. For U.S. affiliates, data are not available to apportion life insurers' investment income between earnings on technical reserves and their own funds, nor to further divide it into the investment income allocated to actuarial reserves and that used to defray their expenses. Accordingly, it was decided to omit the premium supplements from the measure of output for the life insurance operations of affiliates. Thus, the measure of life insurance services supplied through affiliates consists of premiums less normal losses plus any fees for auxiliary insurance services, which represents the funds available to life insurers to pay their operating expenses and earn a profit.<sup>12</sup>

The first step in estimating the premium supplements for non-life insurance is to determine the amount of investment income earned by MOUSAs that is attributable to non-life insurance activities. Majority-owned U.S. affiliates report total investment income for the consolidated U.S. enterprise, which may include operations in other industries, such as life insurance or finance industries, that generate investment income. So, for each MOUSA with operations in non-life insurance, the share of non-life insurance sales in its total sales in finance and insurance is calculated. This share is then multiplied by its reported total investment income to derive an estimate of its investment income from its operations in non-life insurance. For both 2002 and 2003, investment income of \$11.8 billion was attributed to the non-life insurance activities of MOUSAs.

Once investment income attributable to non-life insurance activities has been estimated, then the share of that income earned on technical reserves must be estimated. This is done by using the ratio of investment income earned on technical reserves to total investment gains for the entire U.S. insurance industry, calculated from data in *Best's Aggregates and Averages*—

11. In addition, some life insurance policies include an explicit element of savings in which policyholders make payments to insurance companies that are held in personal accounts. The investment income credited to these accounts is excluded because it is paid directly to the individual account holders.

12. In the estimates of personal consumption expenditures (PCE) in the NIPAs, the output of life insurance companies is estimated as their "operating expenses for the package of services provided. These imputed fees, which include profits in the case of stock companies, appear as 'expense of handling life insurance' in PCE." U.S. Department of Commerce, Bureau of Economic Analysis, *Personal Consumption Expenditures* 1990, 12.

The expenses of handling life insurance equal value added plus purchased materials and services. The measure of value added can be constructed from the data reported to BEA, and it would be possible to estimate purchased materials and services by affiliates with life insurance operations by subtracting premiums earned, interest received, and value added from their gross operating revenues. However, these estimates would represent value added and purchased materials and services for the enterprise, and, for those affiliates with operations in multiple industries, it would be difficult to estimate the portion of their operating expenses attributable to their life insurance operations.

**Table 2.3** Derivation of new estimate of sales of services for MOUSAs with operations in insurance, 2002 and 2003 (in millions of dollars)

		2002		2003	
		Worldwide sales of services	Sales to U.S. residents	Worldwide sales of services	Sales to U.S. residents
	Current estimates	92,665	88,162	93,715	91,501
LESS	Premiums earned*	63,321	60,244	70,693	69,024
EQUALS	Auxiliary insurance services or services from other industries	29,344	27,918	23,022	22,478
PLUS	Premiums less normal losses	15,119	14,385	16,000	15,622
PLUS	Premium supplements	5,719	5,441	5,864	5,725
EQUALS	New estimates of sales of services	50,182	47,744	44,885	43,825
	Difference from current measure	-42,483	-40,418	-48,829	-47,676

\*To estimate the U.S. resident share of premiums earned, of premiums less normal losses, and of premium supplements, the share of sales to U.S. residents in worldwide sales is applied to the worldwide total for each of these items.

*Property/Casualty Insurance, United States.* This share is then multiplied by MOUSAs' investment income attributable to non-life insurance to derive the estimate of premium supplements. In both years, just under half of all investment income earned in the U.S. non-life insurance industry is attributable to earnings on technical reserves, so, in both years, just under half of the investment income attributable to the non-life insurance operations of MOUSAs is assumed to be earnings on their technical reserves. These earnings are the premium supplements. The estimate of premium supplements is \$5.7 billion in 2002 and \$5.9 billion in 2003 (table 2.3).

The premium supplements described here differ from those in the NIPAs and ITAs, both of which use a methodology that computes *expected* investment income. Estimation of this expectation depends on developing a relationship between investment income on technical reserves and premiums. That approach was not adopted here because the data for U.S. affiliates do not distinguish between premiums for non-life insurance and those for life insurance. The premium supplements for affiliates will be actual investment income, instead of expected investment income, which could make the estimates more volatile. However, between 1997 and 2003, the ratio of investment income to sales for non-life insurance carriers only varied between 14.0 percent and 17.8 percent, indicating that the use of the actual investment income may not increase the volatility greatly.

#### *Incorporating the Changes into the Estimates of Sales of Services through Affiliates*

This section explains how the new measure of insurance could be incorporated into the estimates of sales of services through affiliates; table 2.3 il-

illustrates the steps. First, the premiums earned are subtracted from total sales of services by MOUSAs with operations in insurance. The remainder represents sales of services that are either auxiliary to insurance or for other services. Then, the two new elements of the measure of insurance services—premiums less normal losses and premium supplements for non-life insurance—are added to the remainder. These calculations are performed separately for worldwide sales of services and for sales to U.S. residents. In apportioning premiums earned and the new elements of the measure of insurance services between sales to U.S. residents and sales to the rest of the world, it is assumed that the share provided to U.S. residents is the same as the share of sales to U.S. residents in total sales of services by these affiliates. In 2002, 95.1 percent of sales of services were sold to U.S. residents, so it is assumed that 95.1 percent of premiums earned and of the two elements of the new measure of insurance services are supplied to U.S. residents. For 2002, the current estimate of sales of services to U.S. residents for these MOUSAs is \$88.2 billion, of which \$27.9 billion were sales of auxiliary insurance services or of services other than insurance. Under the proposed methodology, the two new elements of the measure of insurance services sum to \$20.8 billion—\$15.1 billion for premiums less normal losses and \$5.7 billion for premium supplements—of which \$19.8 billion are estimated to be supplied to U.S. residents. Adding this figure to the sales of other services yields a new estimate of sales of services to U.S. residents for these MOUSAs of \$47.7 billion. The new estimate is \$40.4 billion less than the current estimate. This reduction represents the net of the reduction for premiums devoted to the settlement of normal losses and the increase due to the inclusion of premium supplements.

### 2.3 Wholesale and Retail Trade

The wholesale and retail trade industries provide distributive services—that is, selling, or arranging for the sale of, goods to intermediate and final users. Wholesalers sell goods, or arrange for the sales of goods, to retailers, intermediate users, and final users (other than persons). Distributive services provided by wholesalers include merchandise handling, stocking, selling, and billing. Retailers sell goods primarily to persons. In the SNA and the NIPAs, distributive services are measured as trade margins—wholesale or retail sales of goods less the cost of the goods resold. In estimating the gross output of services provided by wholesalers and retailers, the goods for resale are excluded from the value of intermediate inputs consumed in production by wholesalers and retailers because these goods are subject to only minimal processing, such as cleaning or packaging.

These industries are important service industries in the U.S. economy; in 2005, they accounted for almost 13 percent of GDP (Howells, Barefoot, and Lindberg 2006). In contrast, the wholesale and retail trade industries

are hardly noticeable in the estimate of U.S. international sales and purchases of private services. However, this does not indicate a lack of importance of these industries. Rather, it reflects the fact that the value of the distributive services they provide is embedded in the value of goods they sell through international channels, either in the value of exports and imports of goods or in the value of sales of goods through affiliates.

### 2.3.1 Cross-Border Trade

Cross-border trade in distributive services is not identified as such in the ITAs, but it could be said to occur when, for example, a wholesaler exports a good. Although a significant portion of U.S. exports and imports is arranged or facilitated by wholesalers and retailers, particularly the former, the estimates of cross-border trade in services do not include estimates of the distributive services provided by exporters because those services are included in the value of trade in goods. Exports of goods are valued at the f.a.s. (free alongside ship) value of the merchandise at the U.S. port of exportation, including inland freight, insurance, and other charges incurred in placing the merchandise alongside the carrier at the U.S. port. Imports of goods are valued at the price paid or payable for merchandise at the foreign port of exportation. Thus, any distributive services (as well as the value of other services that facilitate trade, such as transportation from the factory to the port), are included in the accounts for cross-border trade in goods and not those for cross-border trade in services.<sup>13</sup>

The inclusion of these services in the value of merchandise trade follows the treatment recommended in BPM5 and reflects the fact that data on cross-border trade are collected by product. In this case, the product is an exported good, and its value includes the distributive services used to arrange for its export. The Bureau of Economic Analysis has no intention of changing the basis on which merchandise trade is valued in the international accounts. However, as noted earlier, estimates of the services of wholesalers and retailers in facilitating international trade are important for understanding both the role of these distributive services industries in trade and the importance of trade for these industries. Here I use data from the 2002 Economic Census to construct rough estimates of the distributive services associated with merchandise trade.

According to the 2002 Economic Census (U.S. Census Bureau, 2002 *Economic Census, Wholesale Trade* 2005), 3.3 percent of all sales by U.S. wholesalers were exports, or about \$152.9 billion. In that year, wholesalers provided an average of 22.3 cents of distributive services for every one dollar in sales. Applying this average to their exports yields \$34.1 billion in distributive services embodied in the value of goods exported by U.S. whole-

13. The transportation services involved in getting the goods from the port of exportation to the importing country are included in cross-border trade in services.

salers. Not surprisingly, exports accounted for a smaller share of total sales of retailers, at 0.1 percent (U.S. Census Bureau, 2002 *Economic Census, Retail Trade* 2005). This corresponds to about \$3.1 billion worth of exports. In 2002, retailers had an average of 28.7 cents of distributive services per dollar of sales, resulting in \$0.9 billion of distributive services embodied in the value of goods exported by retailers. Summing the two estimates yields \$35.0 billion in distributive services embodied in exports of goods (table 2.4).

The estimate of distributive services embodied in exports derived here can be compared to BEA's estimate of the wholesale trade margin on all exports, included in BEA's annual Input-Output (I-O) accounts. In 2002, this estimate was \$65.4 billion. There are several factors that contribute to the discrepancy between the two estimates. Among them, the estimate de-

**Table 2.4** Impacts of changes in the measurement of insurance, wholesale and retail trade, and financial services on the estimates of cross-border trade and sales through affiliates, 2002 (in billions of dollars)

	Cross-border trade in services			
	Exports of services	Imports of services	Exports of goods	Imports of goods
Current measure	279.2	209.0	682.4	1,167.4
Effects of new measures:				
Insurance services*	—	—	No change	No change
Distributive services	+35.0	+59.8	-35.0	-59.8
Financial services	+9.1	N.A.	No change	No change
Adjusted measure	323.7	N.A.	647.4	1,107.6
	Sales through MOUSAs		Sales through MOFAs	
	Sales of services to U.S. residents	Sales of goods to U.S. residents**	Sales of services to foreign residents	Sales of goods to foreign residents
Current measure	367.6	1,421.1	423.5	1,738.2
Effects of new measures:				
Insurance services	-40.4	No change	N.A.	N.A.
Distributive services	+134.9	-134.9	N.A.	N.A.
Services of bank affiliates	+30.5	No change	N.A.	N.A.
Adjusted measure	492.6	1,386.2	N.A.	N.A.

N.A. = No estimate is available.

\*The new measure of insurance services has been incorporated in the current measure of exports and imports of services. Imports of insurance services are \$0.8 billion higher in 2002 because of the new measure, and exports are \$4.0 billion higher because of the new measure.

\*\*The sales of goods to U.S. residents by MOUSAs have been estimated from data on exports of goods shipped by MOUSAs because the data on these sales are not disaggregated by destination.

rived here is based on the 2002 Economic Census, which has not yet been incorporated into the annual I-O accounts. In addition, the I-O accounts include manufacturers' sales offices and branches in the wholesale trade industry but the data used here on exports by wholesalers do not. Furthermore, margin rates vary by wholesale trade industry. The estimate derived here does not account for the possibility that wholesalers in industries with higher margin rates, such as some durable goods wholesalers, may account for a larger share of exports, while the estimate from the annual I-O accounts does take this into account. Finally, the estimates derived here only include the margin for the final sales from the exporting wholesaler to the purchaser, while the annual I-O accounts include any margins on sales from manufacturers or from other wholesalers to the exporting wholesaler.

U.S. imports of distributive services occur when a foreign wholesaler or retailer arranges for the export of a good to the United States. Data are not available on either the share of imports arranged by foreign wholesalers and retailers or on the margins earned by them. Therefore, it is assumed that foreign wholesalers accounted for the same share of U.S. imports as U.S. wholesalers did of U.S. exports. The \$152.9 billion in exports by U.S. wholesalers accounted for 22.4 percent of all U.S. exports in 2002. Assuming that foreign wholesalers accounted for the same share of U.S. imports yields an estimate of imports facilitated by foreign wholesalers of \$261.6 billion. Assuming that foreign wholesalers had the same average distributive services per dollar of sales as U.S. wholesalers (22.3 cents per dollar of sales) yields an estimate of distributive services embodied in imports from foreign wholesalers of \$58.3 billion. The same assumptions and calculations for retail trade yield an estimate of distributive services embodied in imports from foreign retailers of \$1.5 billion. Summing the two estimates yields \$59.8 billion in distributive services embodied in imports of goods. The BEA's annual I-O accounts do not estimate wholesale trade margins on imports, and, so, the same comparison that was made for exports cannot be made for imports.

### 2.3.2 Sales through Affiliates

The estimates of sales of services through affiliates show that foreign-owned U.S. wholesalers and retailers accounted for less than 5 percent of all sales of services to U.S. residents in 2005, and U.S.-owned foreign wholesalers and retailers accounted for less than 5 percent of all sales of services to foreign persons in 2004.<sup>14</sup> However, as with the data on trade in services in the ITAs, this result is more of a reflection of the statistical conventions employed than a true indication of the importance of these industries in the delivery of services to international markets through the

14. The value of sales of services through the foreign wholesale and retail trade affiliates of U.S. MNCs is suppressed for 2005 to avoid the disclosure of company confidential data.

channel of affiliates' sales. In BEA's estimates, the total values of sales associated with wholesale and retail trade are treated as sales of goods. Thus, the estimates of services provided by wholesalers and retailers cover only secondary activities of these affiliates, not the distributive services that they provide. For example, the repair services provided by a car dealer are included in the estimates of sales of services, but the distributive services the dealer provides in selling cars are not. Instead, the value of the distributive services is included in the estimates of sales of goods. When the data collection system for sales of services through affiliates was instituted, BEA defined sales of services as those typical of a specified group of industries. The Bureau of Economic Analysis chose to treat sales in wholesale and retail trade as sales of goods because most of their value is attributable to the goods being sold, not to the distributive services. As a result, wholesale and retail trade affiliates are more important providers of services than the estimates suggest.

While the inclusion of distributive services in the value of goods sold is consistent with the treatment of cross-border trade, in which the value of distributive services is included in the value of trade in goods, an estimate of the distributive services supplied through affiliates would be valuable to data users. For example, it would allow for comparisons of the output of foreign-owned U.S. wholesalers and retailers with that of all U.S. wholesalers and retailers.

To allow estimates of the distributive services supplied through affiliates to be constructed, BEA collected data on the cost of goods sold and the beginning- and end-of-year inventories of the goods for resale on the 2002 benchmark survey of FDIUS. These data items have been included on the follow-on annual surveys of FDIUS, and they were introduced on the surveys of USDIA, beginning with the 2004 benchmark survey. These data are supplied by all affiliates with operations in wholesale or retail trade, not just those classified in these industries.

Preliminary estimates of the margin between sales and the cost of goods sold using the new data collected indicate that MOUSAs supplied \$134.9 billion in distributive services to U.S. residents in 2002 and \$135.1 billion in 2003. Including these estimates of distributive services in sales of services through affiliates would raise the estimates of sales of services through affiliates substantially—by 36.7 percent and 36.1 percent, respectively. These amounts are currently included in the estimates of sales of goods by MOUSAs in BEA's broader statistics on the activities of MOUSAs. As such, they are not an addition to the data on sales through affiliates, but, instead, are a reclassification within sales from goods to services. Majority-owned U.S. affiliates had sales of goods of \$1,561.6 billion in 2002 and of \$1,648.5 billion in 2003, which would fall by 8.6 percent and 8.2 percent respectively if distributive services were reclassified from sales of goods to sales of services (table 2.4).



## 2.4 Financial Services

In 2006, U.S. exports of financial services were \$42.8 billion, and U.S. imports of financial services were \$14.3 billion. Sales to U.S. residents by U.S. affiliates in finance were \$24.9 billion in 2005, and sales to foreigners through foreign affiliates in finance were \$42.9 billion. Despite the size of these flows, the coverage of financial services in BEA's data on international services is incomplete. While the data cover those services for which explicit fees or commissions are charged, they only partly capture the value of services for which payment is implicit—that is, reflected in differences between rates charged to borrowers and rates paid to lenders or in differences between buying and selling rates for financial assets. In addition, the data on cross-border trade include services provided by banks, but the data on sales through affiliates do not.

### 2.4.1 Cross-Border Trade

The Bureau of Economic Analysis' data on trade in financial services include explicit commissions and fees for a wide variety of services, including funds management, credit card services and other credit-related activities, and transactions in securities. The estimates of cross-border trade also include the value of two services that are measured only indirectly: implicit commissions and fees for bond trading and underwriting. For example, the services provided by an underwriter, who brings securities to market by buying them from the issuer at an agreed price and reselling them to investors, are remunerated by the margin generated from these transactions.

Other implicitly charged financial services are not included in BEA's estimates of cross-border trade in financial services. For example, one of the ways in which financial institutions charge implicitly for services is by paying lower interest rates on deposits than they charge to those who borrow from them. The resulting net receipts of interest are used to defray expenses and provide profits. Due to the lack of explicit charges, the value of services charged for implicitly must be imputed. The guidance for compiling statistics on trade in services offered by the SNA, BPM5, and the MSITS differs regarding the treatment of these unpriced financial services.

The SNA, which refers to these unpriced financial services as “financial intermediation services indirectly measured” (FISIM), recommends that FISIM be measured as the total property income receivable by financial intermediaries minus their total interest payable. It excludes any property income earned from the investment of their own funds because this income does not arise from financial intermediation. The SNA also recommends that FISIM purchased by depositors be measured as the difference between the average interest paid to depositors and a reference rate, or risk-free rate, and that FISIM purchased by borrowers be measured as the difference between the average rate paid by borrowers and the reference rate. In the SNA, production that is disposed of must be recorded in one or

more of the following ways—as intermediate consumption by enterprises, as final consumption by households, or as exports to nonresidents. The allocation to nonresidents appears as exports of FISIM in the foreign transactions account of the SNA. Exports of FISIM occur when foreign residents borrow from U.S. banks or lend to them in the form of deposits. Likewise, imports of FISIM occur when U.S. residents borrow from or lend money to foreign banks.

In contrast to the SNA, BPM5 excludes the imputed value of financial intermediation services indirectly measured from exports and imports of financial services because of concerns that it would be impractical or difficult to collect the necessary data to impute a value for cross-border trade in these unpriced services. Instead, the values of these services are recorded indistinguishably under receipts and payments of interest.

To maintain consistency with BPM5, MSITS does not recommend including FISIM in trade in services. However, it does provide memorandum items for “services provided without payment by financial intermediaries” and for financial services including these unpriced services. These memorandum items were included both to allow for a measure that reflects implicit as well as explicit charges for services and because of concerns that, over time, financial institutions may change how they charge for some services. For example, if financial institutions begin to charge explicitly for services that had previously been charged implicitly, financial services excluding FISIM would show growth greater than if there had been no change in charging policies. However, this greater growth would be attributable to the change in charging policies and not to an actual increase in services provided. In addition, the memorandum items would facilitate international comparisons because financial institutions in some countries may charge explicitly for services that are usually charged implicitly by financial institutions in other countries.

In compiling the NIPAs, BEA allocates a portion of the imputed output of commercial banks to the rest of the world (Fixler, Reinsdorf, and Smith 2003). This imputation appears under exports of services, as “services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans,” in the Foreign Transactions Account of the NIPAs. In 2002, “services furnished without payment by financial intermediaries except life insurance carriers” to the rest of the world were \$9.1 billion, rising to \$10.8 billion in 2006. It is not necessary to estimate imports of FISIM used for final consumption when estimating GDP because imports of FISIM are not included in the source data for consumption.<sup>15</sup> However, imports of FISIM for intermediate use by businesses should be estimated to avoid understating intermediate inputs.

15. Generally, when estimating GDP, it is necessary to remove the value of imports from the estimates of private and government consumption and investment because the source data of these components include purchases of imports.

Consistent with BPM5 recommendations, BEA currently excludes “services provided without payment by financial intermediaries” in its recording of cross-border trade in financial services in the ITAs. However, it is expected that the revision to BPM5, which is currently being written, will recommend including FISIM in cross-border trade in financial services.<sup>16</sup> Also, BEA considers it important to include unpriced services in its estimates, to accurately measure trade in financial services. Thus, BEA is examining the issues involved in estimating imports of “services provided without payment by financial intermediaries.” Including imports and exports of unpriced financial services in the ITAs would raise the value of exports and imports of financial services and would result in offsetting entries in receipts and payments of interest.<sup>17</sup>

#### 2.4.2 Sales through Affiliates

The coverage of sales through affiliates is incomplete because data for bank affiliates are excluded. Because most of the information on bank affiliates that is needed for policymaking purposes is already reported to other U.S. government agencies, BEA collected only limited data from bank affiliates. However, the absence of banks in the data causes a potentially large gap in the coverage of financial services sold through affiliates. As a first step toward closing this gap, BEA collected data on the 2002 benchmark survey of FDIUS that can be used as the basis for estimating bank affiliates’ explicit and implicit fees for services. These same data items were added to the 2004 benchmark survey of USDIA.

Fixler and Zieschang (1999) develop a measure of the output of banks using the cost of money framework that covers all of the financial services provided by banks and that is consistent with national economic accounting principles. The measure consists of the value of explicitly charged services and, for implicitly charged services, of the bank’s net interest adjusted for the fact that not all of a bank’s assets and liabilities are associated with services. This measure was the basis for the revised treatment of the services provided by commercial banks introduced in the 2003 comprehensive revision of the NIPAs (Fixler, Reinsdorf, and Smith 2003). The measure of

16. See, *Revision of the Balance of Payments Manual, 5th Edition (Annotated Outline)* 2004, paragraph 9.51.

17. If FISIM could be estimated separately for borrowers and depositors, then purchases of these unpriced services by borrowers would result in some of the interest that nonresident borrowers pay on their loans being recharacterized as purchases of unpriced financial services. For purchases by depositors, it would be assumed that depositors receive, as interest, an amount equal to their purchases of these unpriced services. The imputed values for interest paid to depositors and their purchases of these unpriced services would raise the estimates of both receipts of interest and payments for financial services (or payments of interest and receipts for financial services) by equal amounts. The U.S. receipts of interest on bank claims were \$22.7 billion in 2002, rising to \$107.9 billion in 2006; U.S. payments of interest on bank liabilities were \$22.5 billion in 2002, rising to \$109.9 billion in 2006 (Bach 2005, 38, and Bach 2007, 37).

services supplied by U.S. bank affiliates discussed in the following is comparable to this measure.

For explicit charges for services, bank affiliates reported data on their total sales of services by destination, as nonbank affiliates do. In 2002, U.S. bank affiliates reported total sales of services of \$17.0 billion, of which \$14.1 billion, or 83 percent, was sold to U.S. residents.

For implicit charges for services, bank affiliates reported data on their total interest paid and total interest received. In 2002, they reported interest income of \$100.6 billion and interest expense of \$78.5 billion, for net interest income of \$22.1 billion. In estimating FISIM, a part of FISIM on the banks' own funds is deducted to reflect the absence of a depositor. The amount deducted is equal to the reference interest rate<sup>18</sup> multiplied by the banks' own funds, which are defined as the difference between the banks' interest-bearing assets and liabilities (Fixler, Reinsdorf, and Smith 2003). Because bank affiliates report all assets and liabilities on BEA's direct investment surveys, the reported data must be adjusted to derive an estimate of their own funds. Applying the shares of interest-bearing assets and liabilities in total assets and liabilities for the domestic banking industry, calculated from the FDIC Historical Statistics on Banking, to the reported data produces an estimate of bank affiliates' own funds. Multiplying this estimate by the reference rate yields an estimate of \$2.3 billion for interest earned on their own funds in 2002. Deducting this from their net interest income of \$22.1 billion yields a value of FISIM of \$19.8 billion. Assuming that the share of FISIM supplied to U.S. residents is the same as the share of explicit charges results in an estimate of \$16.4 billion of FISIM supplied to U.S. residents. Total services supplied to U.S. residents by U.S. bank affiliates are estimated to be \$30.5 billion in 2002 (table 2.4).

## 2.5 Conclusions

This paper has provided an update of BEA's efforts to improve its data on and measures of U.S. international sales and purchases of services. It has focused on changes in data collections and methodologies for three important services: insurance services, wholesale and retail trade services, and financial services. In some cases, the changes will improve the comparability of BEA's data on cross-border trade in services and sales through affiliates. In addition, some of the changes will improve the comparability of BEA's data on international services with the NIPAs. Table 2.4 shows the impact on the estimates for 2002; table 2.5 summarizes the changes and the impacts that they have had, or would have, on the accounts. For the esti-

18. The reference rate is computed by dividing the interest received from Treasury and Federal agency securities by the average book value of these securities over the period during which interest was received.

**Table 2.5 Summary of changes in the measurement of insurance, wholesale and retail trade, and financial services**

Channel of delivery	Issue	Action taken or proposed	Effect on the estimates
Cross-border trade	Unusually large or small claims caused fluctuations in the measure of services (premiums less claims) unrelated to changes in the levels of services	<i>Insurance</i> Adopted a measure of claims that reflected the long-run relationship between claims and premiums, called <i>normal losses</i>	Reduced volatility in the measure of trade in services
	Omitted investment income earned on technical reserves	Developed estimates of premium supplements	Raised the estimates of trade in insurance services
	Data on premiums recorded net of commissions	Collected data on premiums gross of commissions	Raised exports and imports of services by equal amounts
	Estimates of insurance services excluded services auxiliary to insurance	Collected data in a new category for services auxiliary to insurance	Raised estimates of trade in insurance services, partly offset by reductions in other services
Sales through affiliates	No deduction for claims	Proposed adopting a measure that deducts normal losses from premiums earned	Would substantially reduce the estimates
	Omitted investment income earned on technical reserves	Proposed adding an estimate of premium supplements	Would raise the estimates

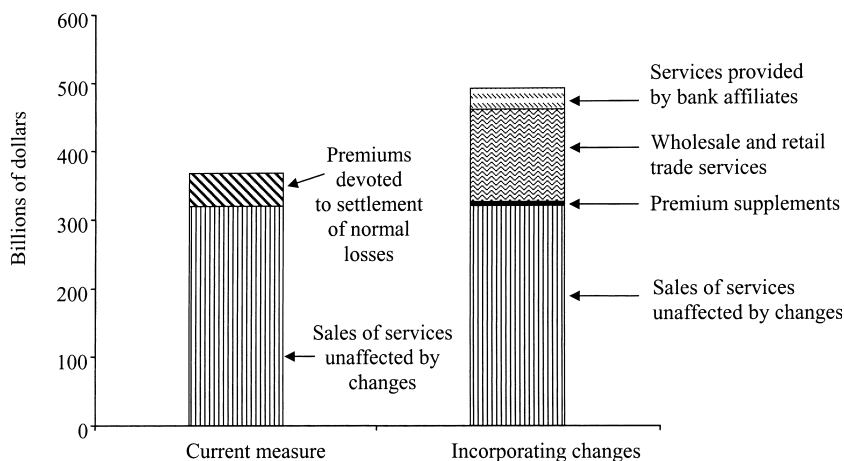
*Wholesale and retail trade*

Cross-border trade	Distributive services provided in connection with trade in goods are included indistinguishably in the value of goods	Construct rough estimates using data from the 2002 Economic Census	Estimates would not be deducted from trade in goods but would be provided as supplementary information
Sales through affiliates	Distributive services are included indistinguishably in the value of goods sold through affiliates	Collect data on the costs and inventories of goods for resale	Would substantially raise the estimates, offset by reductions in estimates of sales of goods through affiliates

*Financial services*

Cross-border trade	Estimates exclude the value of some financial services provided without explicit charge	Conduct research into estimating imports of these services	Would raise the estimate of trade in services, offset by changes in receipts and payments of interest
Sales through affiliates	Estimates exclude services supplied by bank affiliates	Collect data from bank affiliates on explicit fees and commissions and interest paid and received	Would raise substantially the value of services sold through affiliates

---



**Fig. 2.4** Estimates of sales of services to U.S. persons through the MOUSAs of foreign MNCs, 2002

mates of sales of services through U.S. affiliates of foreign MNCs, removing the premiums devoted to the settlement of normal losses results in a reduction in the estimates of sales of services through U.S. affiliates, only partly offset by the addition of premium supplements for non-life insurance. Including the two services not currently included in the estimates—wholesale and retail trade services and services provided by bank affiliates—raise the estimates above the current measure (figure 2.4).

For cross-border trade in insurance services, a more meaningful measure of services was developed that avoids the large, random swings in the estimates due to fluctuations in losses by using a measure called *normal losses*, based on the long-run relationship between premiums and claims, as a proxy for insurers' expectations. In addition, it is a more complete estimate, because it includes premium supplements, commissions, and other services auxiliary to insurance. For sales through affiliates, the proposed measure is more meaningful because it deducts a measure of claims paid out by insurers and is more complete because it includes premium supplements.

For wholesale and retail trade, estimates of the services supplied by affiliates with wholesale and retail trade operations will provide measures of services output that are comparable to those in the NIPAs and the industry accounts.

For cross-border trade in financial services, research to identify data sources and to develop a methodology to estimate imports of "services provided without payment by financial intermediaries" continues. For sales through affiliates, an important data gap has been closed by includ-

ing estimates of explicit and implicit charges for services by bank affiliates in the estimates in benchmark years.

The Bureau of Economic Analysis's efforts to improve its estimates of international services continue. Future efforts will focus on providing greater detail on affiliated trade in services, on improving the quality of travel estimates, and on improving the coverage of BEA's surveys of international trade in services. Affiliated trade accounts for the majority of transactions in royalties and license fees and in business, professional, and technical services, yet little detail by type of service was collected for these transactions. The bureau began collecting data on affiliated and unaffiliated trade at the same level of detail on the same surveys with the 2006 Benchmark Survey of Transactions in Selected Services and Intangible Assets with Foreign Persons. Travel services are an important component of trade in services; BEA is exploring the use of data on credit card transactions to improve the quality of these estimates. Concerns about the coverage of BEA's surveys of trade in services have been raised by bilateral comparisons that sometimes show BEA's estimates of U.S. exports to and imports from a particular country are lower than that country's estimates of imports from and exports to the United States. While most of these discrepancies can be explained by differences in definitions, some of the discrepancies remain, raising the possibility that some firms trading services are not reporting on BEA's surveys. At BEA's request, the Census Bureau included a screening question on the 2006 Company Organization Survey to identify importers of services, and BEA funded an expansion in the number of firms sampled from 40,000 to 55,000. Any firms that report imported services and that are not already reporting on BEA's trade in services surveys would be included in future surveys.

## Appendix

### *Ownership-Based Framework of the U.S. Current Account*

In order to highlight the participation of MNCs in international markets for both goods and services, BEA produces an annual, ownership-based supplement to the current account portion of the ITAs. Table 2A.1 reproduces key lines of the ownership-based framework of the U.S. current account for exports for 2005 and 2006.<sup>19</sup> Line 1 of the ownership-based

19. For the complete ownership-based supplement to the current account portion of the U.S. International Transactions Accounts, see "An Ownership-Based Framework of the U.S. Current Account, 1997–2006," *Survey of Current Business*, January, 2007, 59–61.



**Table 2A.1 Selected entries from the ownership-based framework of the U.S. current account, 2005–2006 (in billions of dollars)**

Line		2005	2006*
1	Exports of goods and services and income receipts (ITA table 1, line 1)	1,788.6	2,096.2
2	Receipts resulting from exports of goods and services or sales by foreign affiliates	1,552.4	1,755.9
3	Exports of goods and services, total (ITA table 1, line 2)	1,283.1	1,455.7
3a	Goods, balance of payments basis (ITA table 1, line 3)	894.6	1,023.1
3b	Services (ITA table 1, line 4)	388.4	422.6
4	To unaffiliated foreigners	916.4	—
4a	Goods	621.9	—
4b	Services	294.4	—
5	To affiliated foreigners	366.7	—
5a	Goods	272.7	—
5b	Services	94.0	—
6	To foreign affiliates of U.S. parents	258.2	—
6a	Goods	188.6	—
6b	Services	69.6	—
7	To foreign parent groups of U.S. affiliates	108.6	—
7a	Goods	84.2	—
7b	Services	24.4	—
8	Net receipts by U.S. parents of direct investment income resulting from sales by their foreign affiliates (ITA table 1, line 14)	269.3	310.2
9	Nonbank affiliates	269.1	311.1
10	Sales by foreign affiliates	4,224.7	—
11	Less: Foreign affiliates' purchases of goods and services directly from the United States	287.8	—
12	Less: Costs and profits accruing to foreign persons	2,800.5	—
13	Compensation of employees of foreign affiliates	391.8	—
14	Other	2,408.7	—
15	Less: Sales by foreign affiliates to other foreign affiliates of the same parent	867.2	—
16	Bank affiliates	0.2	-0.8
17	Other income receipts	236.1	340.2
18	Other private receipts on U.S.-owned assets abroad (ITA table 1, line 15)	230.5	335.0
19	U.S. Government receipts (ITA table 1, line 16)	2.7	2.4
20	Compensation of employees (ITA table 1, line 17)	2.9	2.9

\*The estimates in this column are from the international transactions accounts, which are published quarterly. Estimates are not yet available for the items from BEA's annual survey of U.S. direct investment abroad and of foreign direct investment in the United States, which are processed in the two years following the year of coverage. The detailed preliminary estimates for 2006 will be published in the second half of 2008.

framework matches the exports of goods and services and income receipts shown in the standard current account. Line 2 is the new item: U.S. exports are combined with the net receipts of U.S. parent companies from the sales of their foreign affiliates. Lines 3 through 7 highlight the important role of MNCs in cross-border trade by breaking out trade between affiliated parties (intrafirm trade) and between unaffiliated parties. Line 8 corresponds to direct investment income on U.S.-owned assets abroad, included in the income component of the standard current account. Lines 9 through 16 derive these net receipts as the sales of foreign affiliates less their purchases from the United States and costs and profits accruing to foreigners. Only the net receipts that accrue to the U.S. parent companies, not the gross value of sales by their foreign affiliates, are included because only the U.S. direct investors' shares in profits accrue to the United States; the other income, including compensation of employees, typically accrues to foreigners. The improvements to the sales of services through affiliates discussed in this paper will not affect the measure of direct investors' income that appears in the standard, or the ownership-based, current account. Lines 17 through 20 correspond to the items in the income component of the standard current account other than direct investment income. An identical framework is followed for imports of goods and services and income payments.

## References

- A. M. Best Company. 1940–2004. *Best's aggregates and averages: Property-casualty, United States*. Oldwick, NJ.
- . 1996–2004. *Best's aggregates and averages: Lifelhealth, United States*. Oldwick, NJ.
- Bach, C. L. 2003. Annual revision of the U.S. International Accounts, 1992–2002. *Survey of Current Business* 83 (July): 32–45.
- . 2004. Annual revision of the U.S. International Accounts, 1989–2003. *Survey of Current Business* 84 (July): 52–64.
- . 2007. U.S. international transactions in 2006. *Survey of Current Business* 87 (April): 22–73.
- . 2005. U.S. international transactions, 2004. *Survey of Current Business* 85 (April): 24–68.
- Balance of payments manual*, 5th ed., 1993. International Monetary Fund. Washington, D.C.
- Balance of payments and international investment position manual*, 6th ed. 2007. Washington, D.C.: International Monetary Fund. Available at <http://www.imf.org/external/pubs/ft/bop/2007/pdf/BPM6.pdf>.
- Chen, B., and D. J. Fixler. 2003. Measuring the services of property-casualty insurance in the NIPAs: Changes in concepts and methods. *Survey of Current Business* 83 (October): 10–26.
- Fixler, D., M. B. Reinsdorf, and G. M. Smith. 2003. Measuring the services of com-

- mercial banks in the NIPAs: Changes in concepts and methods. *Survey of Current Business* 83 (September): 33–44.
- Fixler, D., and K. Zieschang. 1999. The productivity of the banking sector: Integrating financial and production approaches to measuring financial service output. *The Canadian Journal of Economics* 32 (2): 547–69.
- Howells III, T. F., and K. B. Barefoot. 2006. Annual industry accounts: Advance estimates for 2005. *Survey of Current Business* 86 (May): 11–24.
- Howells III, T. F., K. B. Barefoot, and B. M. Lindberg. 2006. Annual industry accounts: Revised estimates for 2003–2005. *Survey of Current Business* 86 (December): 45–87.
- Manual on Statistics of International Trade in Services*. 2002. Commission of European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, United Nations Conference on Trade and Development, and World Trade Organization: Geneva, Luxembourg, New York, Paris, and Washington, D.C.
- Sherwood, M. 1999. Output of the property and casualty insurance industry. *The Canadian Journal of Economics* 32 (2): 518–46.
- System of National Accounts*. 1993. Commission of the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, and World Bank: Brussels/Luxembourg, New York, Paris, and Washington, D.C.
- Triplett, J. E., and B. P. Bosworth. 2004a. Output and productivity in retail trade. In *Productivity in the services sector: New sources of economic growth*, 233–55. Washington, D.C.: Brookings Institution.
- . 2004b. Overview: Industry productivity trends. In *Productivity in the services sector: New sources of economic growth*, 6–40. Washington, D.C.: Brookings Institution.
- U.S. Census Bureau. 2005. 2002 Economic Census, Series EC02-44-SX-SB. *Retail trade: Miscellaneous subjects 2002*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Census Bureau. 2005. 2002 Economic Census, Series EC02-42-SX-SB. *Wholesale trade: Miscellaneous subjects 2002*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Census Bureau. 2005. Current business reports, series BR/04A. *Annual benchmark report for retail trade and food services: January 1992 through February 2005*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Department of Commerce, Bureau of Economic Analysis. 2006. An ownership-based framework of the U.S. Current Account, 1993–2004. *Survey of Current Business* 86 (January) 2006:43–45.
- . 1990. *Personal consumption expenditures*. Methodology paper series MP-6. Washington, D.C.: GPO.
- Whichard, O. G., and M. Borga. 2002. Selected issues in the measurement of U.S. international services. *Survey of Current Business* 82 (June): 36–56.