# Addressing Selected Issues in U.S. Bureau of Economic Analysis Estimates of U.S. International Services: Improved Measures of Insurance, Wholesale and Retail Trade, and Financial Services

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**Abstract:** U.S. Bureau of Economic Analysis (BEA) compiles the statistics on U.S. international services. These data cover the two major international channels of delivery of services—cross-border trade and sales through affiliates. The inclusion of sales through affiliates recognizes that the delivery of many types of services requires a local, commercial presence. In 2002, BEA identified and described several issues in the measurement of three major types of services: insurance, wholesale and retail trade, and financial services. In order to resolve these issues, BEA has made changes in data collection and in the methodologies for measuring services. This paper will describe these changes and, where possible, quantify how they have affected or are likely to affect the estimates. The improved measure of insurance services adopted for both cross-border trade and sales through affiliates better measures the risk transfer, financial intermediation, and auxiliary insurance services that insurers provide. Proposed new supplemental estimates of the distributive services of wholesalers and retailers will quantify the important role that they play in facilitating international trade. Developing estimates of certain implicit services not already included in the cross-border trade data could lead to a more complete measure of financial services. The inclusion of banking services in the sales through affiliates estimates will close a significant gap in the sales through affiliates data. Despite these changes, there remain some unresolved issues. This paper will explore methods and data sources for addressing these unresolved issues. If possible, the impact the resolution of these issues would have on the estimates of U.S. international services will be quantified.

## I. Bureau of Economic Analysis (BEA) estimates of U.S. international services

A. BEA prepares estimates of U.S. international sales and purchases of private services.

B. These estimates cover two major channels of delivery:

1. Cross-border trade

    a) Trade in the conventional sense.

    b) Transactions between U.S. and foreign residents.

2. Sales through affiliates

    a) Services supplied through the channel of direct investment.

    b) Including sales through affiliates recognizes the key role of affiliates that are located in—but are owned outside—the markets they serve in the delivery of services.

    c) Recognizes the necessity for a local commercial presence to deliver many types of services.

    d) Provides data to support the General Agreement on Trade in Services (GATS), which includes commercial presence as a mode of supply.

    e) Includes only sales by majority-owned affiliates. Also, to avoid double counting with cross-border trade in services, the estimates include only sales in the United States by the U.S. affiliates of foreign multinational companies (MNCs) and sales to foreign residents by the foreign affiliates of U.S. MNCs.

C. In a 2002 article, BEA identified and described several issues in the measurement of U.S. international services (Whichard and Borga). Subsequent to the publication of this article, BEA has taken steps to address a number of these issues. Changes have been made in data collection and in methodology. This paper will describe these changes and, where possible, quantify how they have affected or are likely to affect the estimates of the three major types of services discussed in the 2002 article: insurance, wholesale and retail trade, and financial services. Despite the progress made, some key issues remain unresolved. This paper will explore methods to address these remaining issues, and, where possible, quantify the impact resolution of these issues likely could have on the estimates of U.S. international services.

## II. **Insurance services**

A. The improved measures of insurance services, for both cross-border trade and sales through affiliates, include the three components of output of insurance firms: risk transfer, financial intermediation, and auxiliary services, such as the processing of claims. Most models of insurance firms assume that they set premiums to maximize profits given their expectations of future losses, operating expenses, and expectations of investment returns.

B. Cross-border trade in services

1. Cross-border trade in insurance services differs from the U.S. domestic insurance market in two aspects. First, reinsurance[1] plays an important role in trade flows. In 2004, reinsurance premiums accounted for 95 percent of all payments of premiums and 83 percent of all receipts of premiums. Second, life insurance plays an insignificant role in trade in direct insurance. Because life insurance transactions (other than term life insurance, which is treated in economic accounting as non-life insurance) probably account for only a small fraction of cross-border trade in insurance services, in the discussion that follows, it is assumed that all transactions are non-life insurance. As will be discussed below, this same assumption cannot be made for the estimates of sales through affiliates because life insurance companies account for a significant share of affiliates' sales of services.

2. *Premiums less normal losses.* Prior to 2003, insurance services were measured as premiums less actual losses (claims). The rationale behind this measure of insurance services was that the portion of premiums remaining after provision has been made for losses could serve as a proxy for the operating expenses and profits—or output—associated with this activity. A major drawback of this measure was that actual losses fluctuated greatly from period to period, resulting in movements in the estimates of insurance services that did not correspond to changes in the services provided or received.

3. To better estimate insurance services, BEA adopted a measure of premiums less "normal" losses, where normal losses are estimated as premiums multiplied by the historical average of losses as a percentage of premiums. Conceptually, expectations of future losses should be included in the measure of insurance services because they are a key determinant of premiums. In a practical sense, no information is available on insurance firms' expectations. Therefore, normal losses are used as a proxy for insurers' expectations. The new measure is available from 1992 forward.

[1] Reinsurance is the ceding of a portion of a premium to another insurer who then assumes a corresponding portion of the risk. It provides coverage 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.

4. Normal losses are comprised of 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.

a) The ratio of actual losses to premiums is calculated from the annual data collected on BEA's surveys of international insurance transactions. Then, a six-year arithmetic moving average of this ratio is calculated. Data for the current year are not included in the average in order to achieve an *ex ante* concept of regularly occurring losses.

b) Because insurers expect catastrophic losses to occur occasionally, catastrophes do affect expectations of future losses, and, thus, premiums. However, because catastrophes occur infrequently, they are assumed to affect expectations of losses over a much longer period. Under the new methodology, catastrophic losses are spread over the 20 years following their occurrence. Thus, only a small fraction of catastrophic losses are factored into each year's estimate of insurance services.

5. *Premium supplements.* Non-life insurance companies provide a form of financial intermediation services by collecting funds from policyholders, which are held as technical reserves, and investing these funds in financial or other assets. Technical reserves consist of prepayments of premiums and reserves against outstanding losses. The investment returns on technical reserves are then used to cover insurers' expenses; insurers set premiums based on their expected investment income earned on technical reserves. The estimates of this expected investment income are called premium supplements.

6. The *System of National Accounts* (1993) recommends including income from investment of technical reserves in its measure of total output of insurance services (paragraph 6.138). The IMF *Balance of Payments Manual* (BPM5) recognizes that investment income on technical reserves should be part of the measure of insurance services, but allows it to be omitted because of the practical difficulties of estimation (paragraph 257).

7. The estimates of premium supplements in cross-border trade use data on the investment income earned on technical reserves from *Best's Aggregates and Averages: Property-Casualty, United States* by A.M. Best Company. To capture the fact that insurers must set premiums based on their expectations of investment income, a weighted moving average of historical data is used to compute the expected income measure.

8. Premium supplements are calculated separately for cross-border trade in primary insurance and in reinsurance. Estimates of premium supplements are available from 1992 forward.

9. *Commissions and auxiliary insurance services.* Under BPM5, insurance services should include agent commissions. Under the *Manual on Statistics of International Trade in Services* (MSITS), auxiliary insurance services, such as claims adjustment, actuarial services, and the administration of salvage and recovery services should be included in the measure of insurance services. Beginning in 2001, premiums were reported gross of commissions on BEA's surveys. In addition, a new reporting category was created for services auxiliary to insurance.

10. Figure 1 compares the previous measure, premiums less actual losses, to the new measure, premiums less normal losses, for exports of insurance services from 1992 to 2004. It shows that the new measure avoids the dramatic swings in the value of the estimates of insurance services. Figure 1 also shows the three components of the new measure of insurance services for exports from 1992 to 2004: premiums less normal losses, premium supplements, and auxiliary insurance services. It shows that premium supplements are a significant addition to the estimates of insurance services, but premiums less normal losses still account for the majority of the value of the service. Figure 2 shows imports of insurance services from 1992 to 2004.

C. Sales through affiliates

1. One significant difference from the cross-border trade data is that the sales through affiliates data are classified by the primary industry of the affiliate. As such, 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. Another significant difference is that life insurance is an important component of affiliates' sales of insurance services. For example, in 2003 (the most recent year for which data are available), sales of services by life insurers accounted for 32 percent of all sales of services to U.S. persons by U.S. affiliates in insurance and 39 percent of all sales to foreign residents by foreign affiliates in insurance.

2. Currently, sales of services are defined as services-related sales or gross operating revenues and are derived from a breakdown of sales into goods, services, and investment income. As such, sales in insurance reflect premiums with no deduction for losses paid. Sales of insurance services also exclude investment income. However, sales do include revenues derived from the provision of services auxiliary to insurance. Therefore, the improved estimate of sales of insurance services through affiliates needs a measure of premiums less normal losses and of premium supplements for affiliates.

3. *Premiums less normal losses.* BEA began to collect data on the premiums earned and losses paid by U.S. affiliates with insurance operations on the 2002 benchmark survey of foreign direct investment in the United States (FDIUS) and on the 2004 benchmark survey of U.S. direct investment abroad (USDIA). They were also added to the follow-on annual surveys of FDIUS and will be included in the follow-on annual surveys of USDIA. These new data on premiums earned and losses paid will be used as the basis for constructing a measure of premiums less normal losses.

4. Ideally, normal losses would be calculated as a moving average. However, to avoid having to wait until several years of data have been collected to produce the estimates of sales of insurance services through affiliates, an approach that uses data from A.M. Best on the domestic insurance industry to construct the moving average for years when survey data are unavailable is being explored. Rough estimates from this approach will be presented at the pre-conference. Because the data on sales through affiliates cover both non-life and life insurance, A. M. Best's data on both the property and casualty and the life and health insurance industries will be used.

5. Early results from the surveys of FDIUS indicate that premiums do indeed account for the majority of sales in insurance industries for U.S. affiliates—83 percent of sales in 2002 and 65 percent of sales in 2003. Also, losses paid were 69 percent of premiums in both 2002 and 2003.

6. *Premium supplements.* For the sales through affiliates data, the estimate of premium supplements would cover investment income on the technical reserves of non-life and life insurance carriers. For life insurance policies (such as whole or universal life), the premium supplements measure should also include investment income earned that builds up the value on maturity of these policies. Methods for estimating the premium supplement for affiliates that use the data on investment income collected on BEA's surveys are being explored.

## III. **Wholesale and retail trade**

A. Wholesale and retail trade provide distributive services—that is, selling, or arranging for the sale of, goods to intermediate and final users. These industries are important service industries in the U.S. economy. For example, in 2004, these industries accounted for almost 13 percent of GDP (Strassner and Howells, 2005). In contrast, wholesale and retail trade services are hardly noticeable in the data on U.S. international sales and purchases of services. However, this does not indicate a lack of importance of these industries. Rather, it reflects the fact that the value of distributive services is embedded in the value of goods sold through international channels.

B. Cross-border trade

1. While it is not identified as such for statistical purposes, cross-border trade in distributive services could be said to occur, for example, when a wholesaler exports a good. Although a significant portion of U.S. exports and imports of goods may be arranged or otherwise facilitated by wholesalers and retailers, particularly the former, the estimates of cross-border trade in services do not include estimates of distributive services provided by exporters because those services are included in the value of merchandise trade. Exports are valued at the f.a.s. (free alongside ship) value of the merchandise at the U.S. port of export, based on the transaction price, including inland freight, insurance, and other charges incurred in placing the merchandise alongside the carrier at the U.S. port of exportation. Imports 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 of cross-border trade in goods and not in cross-border trade in services.

2. BEA does not intend to change the basis on which merchandise trade is valued in the international transactions accounts. However, because of interest in the importance of the wholesale and retail trade industries in facilitating international trade, methods to estimate the value of distributive services provided by exporters are being explored. These methods use data on the share of total U.S. exports accounted for by these industries. Rough estimates of value of their services will be presented at the pre-conference.

C. Sales through affiliates

1. The estimates of sales of services through U.S. affiliates show that wholesalers and retailers accounted for less than 3 percent of all sales of services to U.S. residents in 2003; for foreign affiliates, they accounted for less than 6 percent of all sales of services to foreign persons. However, this result is more 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 channel of affiliates' sales. The total value of sales associated with wholesale and retail trade are treated as sales of goods because most of the value of the sale is attributable to the good being sold. Thus, the estimates of services provided by wholesalers cover only secondary activities of these affiliates and not the distributive services that they provide.

2. In order to estimate the value of distributive services supplied through affiliates, BEA needed to collect new data on the activities of wholesalers and retailers. The data items were identified with the aim of developing a

measure of distributive services that matched the definitions of output in wholesale and retail trade used in BEA's input-output accounts:

a) Wholesale trade has one primary product—distributive services for the sales of goods to retailers, intermediate users, and final users (other than persons). Distributive services provided by wholesalers include merchandise handling, selling, and billing.

b) Retail trade has one primary product—distributive services for the sale of goods primarily to persons.

3. Distributive services are measured as the trade margins—wholesale or retail sales of goods less the cost of goods resold. In estimating the gross output of the wholesale and retail trade industries, 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 and packaging.

4. To provide a basis for the estimation of the value of the distributive services of affiliates, BEA collected data on the cost of goods purchased for resale and on the inventories of these goods. Methods of estimating the distributive services have been developed. These methods must estimate distributive services for affiliates that were not required to report the data on the cost and inventories of goods for resale.[2] These methods use reported data as a basis for estimating services for those affiliates that were not required to report these data. The first approach uses the most detailed industry codes available, which are equivalent to 4-digit NAICS codes, and estimates distributive services by industry. The other approach ignores the industry detail and estimates distributive services at the all wholesale and retail trade level. These methods resulted in an estimate of distributive services supplied to U.S. residents through U.S. affiliates of foreign MNC's in 2002 that ranged from $130.1 billion for the second method to $134.7 billion for the first method. The relatively small range is explained by the fact that most of the value of distributive services is accounted for by affiliates that reported the data and only a small portion is estimated.

## IV. **Financial services**

A. Financial services are an important contributor to U.S international services. In 2004, exports of financial services were $27.4 billion, and imports of financial services were $11.2 billion. Sales by affiliates classified in finance are an important component of sales through affiliates. In 2003, the most recent year for which data are available, sales to foreigners through foreign affiliates in finance were $41.7 billion, and sales to U.S. residents by U.S. affiliates were $24.5

[2] The data were only collected for affiliates filing the long form (those with total assets, sales or gross operating revenues, or net income (loss) in excess of $125 million).

billion. Despite the size of these flows, the coverage of financial services in BEA's data on international services is incomplete.

B. Cross-border trade

1. The estimates of cross-border 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 services. The estimates also include the value of two services that are measured only indirectly: implicit commissions and fees for bond trading and underwriting. While some implicit charges for financial services are included in the estimates of cross-border trade, the coverage is incomplete. For example, one of the ways in which financial institutions charge implicitly for services is by paying interest rates to those who lend them money (in the form of deposits and loans) that are lower than the interest rates they charge to those who borrow from them. The net receipts of interest resulting from this practice are used to defray expenses and provide an operating surplus. A measure, called financial intermediation services indirectly measured (FISIM), is used to impute the value of services provided under this practice.

2. The *System of National Accounts* (paragraph 6.125) 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 it does not arise from financial intermediation.

3. BPM5 does not recommend that FISIM be included in measures of cross-border trade in financial services due to concerns that it would be impractical to collect the necessary data from all trading partners to impute a value for FISIM. Under BPM5, these implicit services are reported indistinguishably under investment income (interest). Including FISIM in financial services would, thus, result in the movement of some income from investment income to financial services. BEA follows the guidelines in BPM5 and excludes FISIM from its estimates of cross-border trade in financial services in the ITA's.

4. The Manual on Statistics of International Trade in Services (MSITS) provides memorandum items for FISIM and for financial services including FISIM. These memorandum items were included both to allow for a measure that reflected 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 only charged implicitly by financial institutions in other countries.

5. Because BEA considers it important to include FISIM in its estimates to accurately measure trade in financial services, methods to estimate FISIM are being explored.

C. Sales through affiliates

1. The coverage of sales through affiliates is incomplete because they exclude bank affiliates. As a first step to closing this gap, BEA collected data on the 2002 benchmark survey of foreign direct investment in the United States (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 U.S. direct investment abroad (USDIA).

2. BEA collects only limited data on sales through bank affiliates because most of the information on bank affiliates that is needed for policymaking is already collected by other U.S. Government agencies. However, the absence of estimates of services provided through bank affiliates causes a potentially significant gap in the coverage of sales of financial services through affiliates. To close this gap, BEA collected new data on explicit commissions and fees charged for services by bank affiliates in the 2002 benchmark survey of FDIUS. In 2002, U.S. bank affiliates reported $14.1 billion in services sold to U.S. residents.

3. Currently, the estimates of sales of services through affiliates, like the data on cross-border trade, exclude FISIM. BEA collected data on the total interest paid and total interest received by U.S. bank affiliates on the 2002 benchmark survey of FDIUS to provide a basis for imputing the value of services provided without an explicit charge. In 2002, majority-owned U.S. bank affiliates received $100.6 billion in interest and paid $78.5 billion in interest in 2002.

V. Conclusions.

A. This paper will provide an update of BEA's efforts to improve its data on U.S. international services. It will focus on three services: insurance services, wholesale and retail trade services, and financial services. In some cases, new data collections have been initiated that will facilitate the construction of estimates that better capture international services flows. In other cases, changes in definitions and methodologies have been implemented, resulting in more useful measures. 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 National Income and Product Aaacounts.

B. Despite the progress made in addressing measurement issues for these services, some key issues remain unresolved. These issues include cross-border trade in the distributive services of wholesalers and retailers and financial intermediation services indirectly measured (FISIM) in cross-border trade. This paper will explore methods and data sources that could be used to address these unresolved issues.

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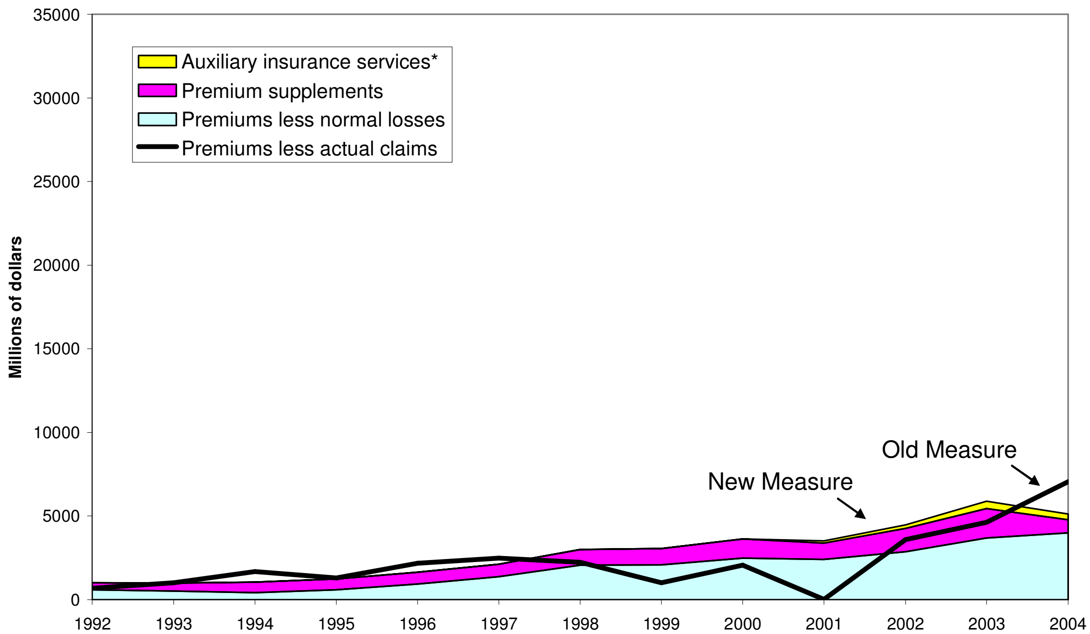
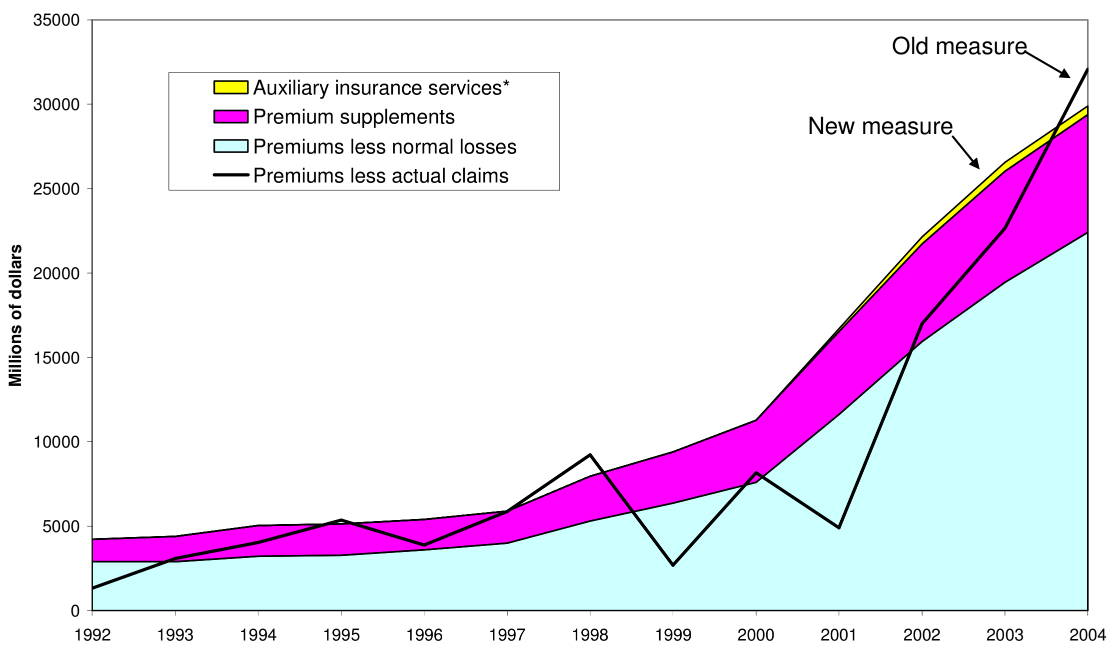
**Figure 1: The Old and New Measures of Exports of Insurance Services**




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

**Figure 2: The Old and New Measures of Imports of Insurance Services**




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