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THE IMPORTANCE OF, AND PITFALLS IN, MEASURING GLOBALIZATION¹

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Economic "globalization" is a historical process, the result of human innovation and technological progress. It refers to the increasing integration of economies around the world, particularly through trade and financial flows. The term sometimes also refers to the movement of people (labor) and knowledge (technology) across international borders. There are also broader cultural, political and environmental dimensions of globalization . . .

-- International Monetary Fund Issues Brief

The term "globalisation" has been widely used to describe the increasing internationalization of financial markets and of markets for goods and services. Globalisation refers above all to a dynamic and multidimensional process of economic integration whereby national resources

¹ This paper has been prepared by J. Steven Landefeld and Obie G. Whichard at the invitation of the secretariat. Views expressed in this paper represent those of the authors and are not necessarily those of the Bureau of Economic Analysis or the U.S. Department of Commerce.

become more and more internationally mobile while national economies become increasingly interdependent.

-- OECD Handbook on Economic Globalisation
Indicators

1. The concept of globalization includes but goes beyond that of international trade. It encompasses not only the internationalization of consumption through cross-border trade in goods and services, but also the global integration of capital markets and the internationalization of production through foreign direct investment. In recent years globalization has been the subject of an increasingly intense public dialog, as international trade and investment have grown and as patterns of trade and investment have evolved and assumed new forms. Internationally integrated production strategies facilitated by intrafirm trade have become commonplace. International markets for business services, once thought to be largely untradable, have flourished as advances in telecommunications and information technology have resulted in a kind of “virtual proximity” that has lessened the need for actual spatial proximity of service producers and consumers. Geographic patterns of international business have changed, as large developing economies such as China and India have grown rapidly, acquired new competencies, and become more open to trade and investment.

2. Views on the benefits and costs associated with globalization are, to say the least, diverse. Some view globalization as essential to prosperity and the efficient allocation of resources. Others worry that it may result in a “race to the bottom,” in which competition from low-wage countries results in reductions in wages and a loss of jobs, or in which measures to protect the environment lead to shifts in production to countries with permissive environmental regimes. However, almost all would agree that globalization is a significant phenomenon, which it is important to understand.

3. Understanding globalization requires theory as well as facts, but certainly the facts are key ingredients in any assessment of this important phenomenon. Indeed, the facts are necessary to test the theories and to quantify the importance of what the theories predict. As economic statisticians, we are charged with compiling factual information on globalization that is relevant, timely, and accurate. In this paper, we will discuss some of the issues involved in attempting to do this with respect to two major ways in which globalization manifests itself in real terms—cross-border trade in goods and services and foreign direct investment and the resulting international activities of multinational companies. In each case, we assess the importance of measurement and examine some of the pitfalls that may be encountered in constructing indicators of globalization and in using those indicators to quantify and describe the phenomenon and to gauge its economic impact.

IMPORTANCE OF GLOBALIZATION AND CROSS-BORDER TRADE

4. Globalization, offshoring, and Lou Dobbs: The word globalization has been replaced by “offshoring” as the latest incarnation of mercantilism in the United States. During the last Presidential campaign, one of the candidates proposed the removal of tax benefits for all “Benedict Arnold” corporations that “exported” jobs through offshoring. The Chairman of President Bush’s Council of Economic Advisers was nearly drummed out of office for suggesting the traditional benefits of free trade applied to the “offshoring” of white collar services jobs. And while Lou Dobbs (the CNN commentator) remains the leading indicator for

the furor over offshoring, the President was recently taken to task by a leading – albeit quite political – academic economist for his supportive views on “offshoring” during his recent visit to India.

5. This concern about “offshoring” has led to a plethora of studies on job losses due to “offshoring,” with most studies concluding that the “losses” are small relative to the normal turnover in U.S. labor markets. The United States, for example, continues to have a surplus in services trade and the proportion of U.S. multinational operations that is located in the United States has remained roughly constant at $\frac{3}{4}$ for over three decades. Studies that have looked behind these data to get at job losses due to offshoring, such the study by Charles Schultze of Brookings (2004), have found small job losses from offshoring of business, professional, and technical services with an annual losses of between 50,000 and 70,000 jobs, compared to the “13 million annual job loss (and gain) typically involved in the process of creative destruction in the American economy.” Others such as Catherine Mann (2006) have pointed out that rather than substitutes, lower cost jobs abroad are often complements for U.S. jobs (often higher-paying U.S. jobs) that contribute to stronger U.S. growth and productivity, and lower inflation.

6. Public furor over “offshoring” has also had an impact on the statistical agencies that collect data relevant to “offshoring” (e.g., Bureau of Labor Statistics data on “mass lay-offs” and the Bureau of Economic Analysis data on cross-border trade in services and on multinational corporations and their operations). In the last two years, for example, BEA has been the subject of three Government Accountability Office (GAO), one National Academy of Sciences, one National Academy of Public Administration, and numerous private studies of the data.

7. Indian Software Services: Despite the fact that the data, and studies of the data, suggest that the magnitude of “offshoring” is not large, there are recurring suggestions that the data are missing large amounts of “offshoring” activity. One study by Goldman-Sachs examined data from an Indian software trade association—the National Association of Software and Service Companies (NASCOMM)—showing exports of \$6.6 billion to the United States as compared to the \$661 million of software imports from India recorded by BEA. The study suggested that this undercounting of service imports was pervasive and helped to explain the gap between real GDP and employment growth in the post-2001 economic expansion (see chart 1).² According to this study, the undercounting of exports caused an overstatement of GDP growth and productivity and an understatement of inflation, and helped answer questions about the divergent trends in real GDP and employment.

8. These questions about the Indian data eventually led to a GAO study and an examination by the Reserve Bank of India. Early on, it became apparent that the Indian software association estimates of exports were far larger than the imports recorded by their OECD trading partners. Further examination found that the NASCOMM estimates included earnings of employees of Indian software companies that were residents of the United States for more than one year. Also, the NASCOMM estimates included all sales to foreign subsidiaries of U.S. companies. Finally, as is sometimes the case with trade association data, the overall estimates were quite large. Last fall, the Reserve Bank of India collected its own data in a manner consistent with the IMF *Balance of Payments Manual*, and the new estimates, while still larger than the U.S. estimates, were only a fraction of the earlier NASCOMM estimates. Once affiliated party U.S. exports in software were included the difference became relatively small (see chart 2).

9. “Dark Matter:” Another example of “missing” cross-border trade that has raised questions about the data relate to what has been described as “dark matter.” Professors Ricardo Hausmann and Federico Sturzenegger of Harvard’s Center for International Development have observed (as have others in the past) that the reason that the United States has been able to run a persistent surplus in direct investment income despite a long-standing deficit in its international direct investment position is because the United States earns a much higher rate of return on its investments abroad than foreigners earn on their investments in the United States. They suggest that the higher than normal return reflects U.S. companies’ advantages in technology and “know-how” and that the difference between a normal return and the returns U.S. companies make abroad reflects unmeasured exports of U.S. know-how.

10. Appendix 1 shows how reclassifying the excess return from investment income to service exports would affect the U.S. balance of payments . Chart 3 illustrates the same reclassification, that is, the effect of reclassifying what might be described as unpriced royalties and license fees from investment income to services exports. If the full difference between the rate of return on foreign direct investment in the United (4%) and the rate of return on U.S. direct investments abroad (8%) were shifted to service exports it would raise service exports in 2004 by \$99 billion dollars, lower investment income by the same amount, and lower the U.S. deficit on goods and services from -\$618 billion to -\$519 billion. There would be no effect on the current account.

11. The difficulty with this approach is that the higher than normal rate of return abroad reflects a large number of factors, of which U.S. know-how and technology are just two. Others include market control, international differences in capital costs, intra-firm financing needs, and the effect of differences in overseas vs. U.S. tax laws and their impact on companies’ internal transfer prices and profits across affiliates. While undoubtedly some portion of the higher than normal return is partly a reflection of the branding and technology associated with products produced by leading U.S. companies, estimating how much is due to their technological “know-how” and other factors is difficult.

12. Before the 2000 “collapse” in the U.S. stock markets, several leading academics including Baruch Lev and Robert Hall presented work suggesting that much of the difference between equity values and underlying replacement value of tangibles was the implicit value of intangible capital. With hindsight, it appears the Federal Reserve Board Chairman Greenspan may have been closer to the mark in his attribution of the divergence between equity values and the market value of the tangible assets to “irrational exuberance.” Indeed, chart 4 illustrates the very large variance and “dangers” in using residuals – either in rates of return to FDI or equity valuations – to infer (rather than directly estimate) the value of intangibles.

PITFALLS IN (AND TECHNIQUES FOR) ESTIMATING CROSS-BORDER SERVICES

13. Importance of detailed estimates. In today’s environment of scarce statistical agency resources it is important to focus resources on addressing the highest priority problems, generally either those that are of the highest policy or analytic interest, or those of the largest quantitative magnitude. It is also important in today’s global environment that countries be able to understand – for policy and analytical purposes—the sources of growth in trade. Aggregate estimates of services trade, regardless of how accurate they may be, are not enough.

14. Detailed data that break out services by type are essential in assessing the priority of

measurement problems and in understanding the sources of changes in the level and composition of trade flows. In the United States, concern over the accuracy of the data on services trade and offshoring was fueled, in part, by the relatively slow growth rate in service imports during the post-2001 expansion. However, analysts looking at the detailed data were able to see that the slow post 9-11 recovery of U.S. travel was masking a 7.5-percent annual increase in other private services imports (2002), the category most associated with business services.

15. Because 25 percent of U.S. services trade exports, and 19 percent of U.S. services imports, are in affiliated-party trade, it is difficult to assess the magnitude of overall trade in particular types of services. As a result, BEA has made it a priority to expand the level of detail available for affiliated-party trade. BEA used to collect only aggregated data on affiliated party trade in services. In 1994, BEA added a half a dozen major categories of affiliated-party trade, and BEA's goal is to raise the level of detail for affiliated-party services trade to the same level of detail that it collects for unaffiliated services, so that data users can have a comprehensive view of total trade for each category of services.

16. Uses of counter-party data: Another useful means of assessing the relative importance of measurement problems, both in services and other areas, through the use of counter-party data. An early look by the OECD at the Indian software issue revealed that estimates of computer and information services exports reported by India were over 33 times the imports of Indian computer and information services recorded by India's major trading partners in the OECD (U.S., EU, and Japan) (OECD 2004). As noted above, subsequent work by the Reserve Bank of India revealed that the NASCOMM estimates were dramatically overstated. Another example of the use of counterparty data is large size of foreign direct investment reported by China and the large share of Chinese exports associated with foreign-owned companies in China reported by China. A recent U.N. report showed that Chinese estimates of foreign direct investment in China (and presumably affiliated party trade) were far larger than major investor countries' estimates of their direct investment in China (see chart 5).

17. BEA has successfully used counter-party data reconciliations and exchanges with Canada, Mexico, and other key trade and investment partners to assist in improving its service and other balance of payments estimates, but these exercises are time- and resource-intensive and realistically can only be used for large and important (including politically important) countries or types of trade and investment (such as business services or foreign direct investment).

18. Joint-Products: Wholesale and retail trade are among the most important parts of the U.S. economy in terms of size, growth rate, and contribution to the recent resurgence in U.S. productivity, yet they account for only a very small fraction of international trade in services. This is largely the result of current recording practices, which call for most of international trade in distributive services to be included in the value of the exported and imported goods. Rough estimates, however, suggest that parallel treatment of services in international trade would raise the value of U.S. cross-border services exports (and lower goods exports) by about \$25 billion and would raise the value of U.S. cross border imports of services (and lower goods imports) by about \$40 billion. The value of distributive services embedded in the sales of locally established affiliates is probably even larger, with estimates for U.S. affiliates of non-U.S. multinationals ranging from \$40 billion to \$85 billion.

19. While BEA intends to retain the existing treatment of distributive trades margin as part of

goods trade as recommended by the IMF's *Balance of Payments Manual*, it is exploring indirect Input-Output-based supplemental estimates of cross-border distributive services trade and collecting data on margins for distributive trades on its benchmark surveys of inward and outward direct investment.

20. Distributive trades are just examples of several industries, including construction and utilities, where services are commingled with goods. For further information on these and other services trade estimation issues, see Whichard and Borga (2002).

21. Estimating Financial Services: The globalization of financial services has increased the importance of measuring the complete range of services, including those for which banks and other institutions do not charge an explicit fee, but earn their income by either the margin between buying and selling prices for financial assets or by the difference between the rates they pay their depositors and the rates they charge borrowers. While difficult to measure, without such "implicit" measures a major part of the output of the growing and increasingly productive financial services industry will be missed. While BEA has for many years included a measure of implicit banking services in the national accounts, except for an estimate of implicit fees on bond trading (based on bid-ask spreads), it has not included implicit service charges for banks or other similar financial institutions in its international accounts. BEA is, however, exploring including such services. Inclusion of such services would, for example, have added about \$7.6 billion to U.S. exports of banking services in 2004 (estimate taken from the national accounts).

22. The insurance industry is another financial industry that poses difficulties for measurement. Insurance services are often measured by premiums net of claims, which is the net price paid for their services. This net treatment is fine during periods of normal activity, when expected claims roughly equal actual claims. However, during major disasters like hurricanes and 9-11, the United States trade deficit improved and recorded insurance services were negative – as the nation received large claims settlements from foreign insurance companies.

23. Another challenge with measuring insurance services is that companies price their premiums based on expected claims and expected investment income from reserves. The income on these reserves could be paid back to the policy holders but are normally used to cover the expense of providing insurance premiums and thus to lower premiums charged to policyholders. As a result, the use of premiums paid less expected claims understates the actual service provided, which is premiums plus foregone investment income less expected claims.

24. In 2005, BEA moved to a measure of premiums less expected claims plus expected investment income, with the difference between expected and actual claims recorded as a unilateral transfer.³ This new measure is consistent with the recommendations of the OECD working group on insurance services, and it provides a more accurate measure over time of the actual insurance services rendered by the international insurance industry.

25. Globalization and incomplete reporting by large companies: As multinationals grow and new markets and suppliers emerge, many cross-border transactions may be missed in ongoing surveys. New subsidiaries' trade may not be quickly incorporated by existing reporters, especially if the subsidiary is a joint venture. Unaffiliated purchases of goods and services from overseas suppliers may also be incorporated in existing companies' government reporting

systems, and survey responses, with a lag. Recent internal and external reviews of reporting on BEA's ongoing international surveys have, in general, found that virtually all major companies that should have been reporting are reporting, but they may not be reporting completely. To address this issue, BEA has engaged in a variety of techniques to more quickly and completely incorporate new subsidiaries and new transactions. These include reminder notices to existing reporters, outreach and education on reporting requirements and definitions, and the use of external non-survey information to identify new subsidiaries and transactions.

26. The rise in direct transactions and small-firms in international trade: The internet, globalization of finance, improved communications, global express delivery systems, and competitive pressures have led to an increase in the role of new and existing small firms in international trade. This has led to problems in a system that assumes small value purchases and small firms sales are a small and relatively stable portion of international trade. Existing indirect estimates based on historical data are probably not capturing the changing nature of international trade. As a result, BEA is working on a program using sampling to better capture small firm transactions on an ongoing basis, developing "E-Z" forms for small reporters, researching the use of more sophisticated econometric techniques for indirect estimation, and considering the introduction of "mini" benchmarks to aid in the estimation of selected transactions.

27. Travel and passenger surveys: BEA uses passenger surveys to measure travel expenditures. Over time, problems with overall and item nonresponse on passenger surveys and other problems have caused BEA to begin to explore use of credit card and other business data to estimate the large, and post 9-11, volatile travel industry.

28. Global competition and differential pricing: To the extent that the prices of domestic goods increasingly diverge from imported prices for the same goods and services there may be overstatement of GDP growth and productivity for countries that rely on the gross output technique as their primary method for estimating GDP and do not have separate and accurate import and export price indexes. If import prices (for outsourced goods and services) are increasingly lower than domestic prices (or measured import prices) then value-added derived by separately deflating gross output and intermediate inputs will cause real intermediate inputs to be understated and residual real value-added to be overstated. This import price problem should have only a limited impact on final expenditures estimates of real GDP and countries may wish to see if there is a significant divergence between real GDP derived by the expenditures approach and the gross output approach. More fundamentally, it will probably require increasing investments in countries' collection systems for import and export prices.

FDI AND THE ACTIVITIES OF MNCs

29. While cross-border trade in goods and services is often thought of as the dominant manifestation of globalization, in reality, the activities of foreign affiliates of multinational companies (MNCs) are larger and faster-growing. Recent estimates by the United Nations illustrate the significance of MNCs worldwide (United Nations Conference on Trade and Development, 2005). The U.N. estimates worldwide sales by foreign affiliates in 2003 at \$17 trillion, or nearly double the size of world exports. By comparison, in 1990, sales by foreign affiliates were only about 25 percent larger than world exports. During 1990-2004, the world stock of outward direct investment increased an average of 12 percent per year, from \$1.8 trillion to \$9.7 trillion, compared to an annual growth rate of world current-dollar GDP of 4.2 percent.

In 2004, foreign affiliates accounted for one-third of world exports.

30. Measuring foreign direct investment (FDI) and the international activities of MNCs is important because of the need for a factual foundation that can assist in addressing a variety of questions pertaining to the role and importance of these firms in home and host economies, and in the global economy at large.⁴ For example:

- What is the role of FDI in international financial flows? Is it a stabilizing or destabilizing influence on global financial markets?
- How do MNCs affect output, incomes, and employment in home and host economies? How do they affect productivity and corporate profitability?
- Do MNCs export jobs? How do they affect wages at home and abroad?
- What determines the location of production by MNCs?
- How do MNCs respond to barriers to trade and investment, or to tax and other investment incentives?
- How do MNCs contribute to cross-border transfers of technology?
- How do MNCs affect trade flows and trade balances?
- Is most FDI vertical in nature (internationally integrated production and extensive intrafirm trade) or horizontal (replication of production processes to serve local markets)?
- Do MNCs manipulate intrafirm transfer prices to shift profits and avoid taxes?

31. Two complementary data sets may be brought to bear in addressing questions such as these. The first is data on FDI. These data include both the financial and income flows that are included in balance of payments accounts and the related investment stocks, or positions. They show the financing of direct investment enterprises, or affiliates, provided by direct investors, the return on that investment, and the cumulative value of the investment (ideally, adjusted for changes in value attributable to movements in prices and exchange rates and to other changes in value). To put them in perspective, they may be examined relative to measures of economic size of home or host economies, such as gross domestic product. The second type of data relate to the operations of multinational companies, covering items such as the sales, value added, employment, and foreign trade of direct investment enterprises; for outward investment, these

items may be compiled for parent enterprises as well. These data, too, may be put in perspective through comparisons with national totals for the same items.

FDI DATA

32. FDI-based indicators are among the most widely available and commonly used measures of economic globalization. They are designed and intended to measure the extent to which cross-border investments have been made with the objective of obtaining a lasting interest in foreign business enterprises, and a degree of influence over the management of those enterprises.

International guidelines for measuring FDI are given in the International Monetary Fund's *Balance of Payments Manual* (5th ed.) and in the OECD *Benchmark Definition of Foreign Direct Investment* (3rd ed.). The recently published *OECD Handbook on Economic Globalisation Indicators* has suggested a number of indicators that place measures of FDI in context—for example, by relating them to levels of output in home and host economies, by examining shares of different countries and industries in total investment, and by constructing statistical measures of concentration that may be compared across countries or industries.

33. While FDI-based indicators are useful for analyzing globalization, certain pitfalls in using them should be noted. For one thing, they may have only a loose correspondence with the size of the foreign operations over which the direct investor has influence or control. International guidelines regard as direct investment any investment in which an investor of one country owns at least 10 percent of the voting equity (or the equivalent) in a business enterprise in a different country. Direct investments of equal amounts may result in influence or control over foreign operations that are quite different in size, and thus in economic significance, depending upon the percentage of ownership and the extent to which the operations are leveraged by borrowing from unaffiliated lenders.

34. Additional problems of interpretation may arise due to the fact that FDI-based indicators often are classified according to the country and industry of the foreign affiliate with which the parent firm has direct transactions, whereas the operations that are ultimately influenced or controlled by this investment may be in other countries or industries. This has been a particularly perplexing issue for the United States, where parent companies have been funneling an increasing share of their direct investments through holding companies for roughly the past two decades.⁵ In 1982, foreign affiliates classified as holding companies accounted for only 9 percent of the U.S. direct investment position abroad, but by 2004, they accounted for 34 percent. This trend reflects a variety of factors. Some holding-company affiliates are established primarily to coordinate management and administration of activities—such as marketing, distribution, or financing—worldwide or in a particular geographic region. In addition, the presence of holding-company affiliates in countries where the effective income tax rate faced by affiliates is relatively low suggests that tax considerations may also have played a role in their growth.

35. One consequence of the increasing use of holding companies has been a reduction in the degree to which the estimates of the U.S. direct investment position abroad (and of related income and capital flows) reflect the industries and countries in which the production of goods and services by affiliates occurs. Partly in response to the growing impact of holding companies on the distribution of the estimates, the U.S. Bureau of Economic Analysis (BEA) has added to its regular presentations estimates of position and income for U.S. direct investment abroad

classified by industry of U.S. parent. Although the industry of the parent does not in all cases reflect the industries of its foreign operating affiliates, in many cases it can be expected to provide a more reliable indicator of those industries than the industries of the affiliates.

36. A more ambitious approach to dealing with holding companies would be to reallocate flows and positions from the countries of the holding companies to the countries of the operating affiliates. Because of the fungibility of money and the multiplicity of uses to which the funds made available by a direct investor to given holding company may be put, it is not clear that this could always be successfully accomplished. However, by following ownership chains, it might be possible to reallocate certain components of the position, such as that accounted for by equity capital. BEA has research underway directed toward this end.

37. Pitfalls in the interpretation of FDI data may also appear where there have been corporate "inversions". Corporate inversions are business reorganizations that occur when a domestic corporation—most typically multinational—forms a corporation in a foreign tax haven and simultaneously "inverts" the corporate chain of ownership so that the new foreign corporation replaces the domestic corporation as the parent of the global corporate group. Once this structure is in place, the domestic company may choose to transfer the ownership of its foreign assets to the new foreign parent company, protecting them from domestic taxes. The inverted structure may also introduce opportunities to shift profits generated by domestic activities to the new foreign parent, thus further reducing domestic taxes.⁶

38. While the development of tax or regulatory policies regarding these transactions falls outside sphere of responsibility of statistical compilers, compilers do have an obligation to consider their implications for economic statistics. In the United States, some data users have expressed a concern that these transactions—by creating U.S. affiliates whose ownership chain does not end abroad but, through portfolio investment, may lead back to the United States—could result in an overestimate of the extent of foreign control in the business sector of the domestic economy. When an inversion occurs, it often is through an exchange of stock, in which shares in the newly created foreign corporation are exchanged for shares in the domestic corporation. These self-financing transactions result in large, but offsetting, financial flows in the U.S. international transactions accounts and large, offsetting entries in the international investment position accounts. The large financial account inflows on direct investment that result from the newly formed foreign corporation's acquisition of shares in the domestic corporation are offset by outflows on foreign securities accounts that result from the U.S. shareholders receiving the stock of the foreign corporation.

39. These procedures properly account for all transactions and positions, yet the usefulness of the data on inward direct investment may suffer due to the fact that investment in these inverted U.S. corporations is commingled with investments by firms that have more bona fide foreign ownership. At present, BEA is unable to segregate transactions and positions that involve inverted firms from those that do not. However, it is aware of the potential for these transactions to create problems of interpretation. When large transactions occur, it generally takes note of them and explains the method of accounting for them in interpretive commentary that accompanies data releases. It will continue to monitor and study this phenomenon.

MNC OPERATIONS DATA

40. To overcome some of the limitations inherent in FDI-based data, there has been increasing recognition of the need to complement these data with statistics that describe the operations of the firms in which there is direct investment. This recognition has arisen partly from the increased interest in globalization that has accompanied its increased importance and partly from the inclusion in trade agreements—the most notable being the General Agreement on Trade in Services—of provisions that recognize commercial presence as a mode of supply. Various terms have been used to refer to these data, including “AMNE statistics” (for statistics on the “activities of multinational enterprises”), “FATS statistics” (for “foreign affiliates’ trade statistics”), and “establishment trade” (a term that has now been largely abandoned). Here, they will be referred to as “MNC operations data.”

41. Whatever the name, these data generally consist of key measures of operations, compiled for direct investment enterprises. With regard to outward investment, data may also be compiled for the domestic parent firms that own foreign affiliates. Partly because these data, in a sense, attribute the entire operations of foreign affiliates to the country of the owner, most compilations of these data limit the affiliates covered by the data to those that are majority-owned by direct investors. Data items covered usually include sales or output, value added, employment, and foreign trade, among others. International guidelines for compiling these data may be found in the *OECD Handbook on Globalisation Indicators* and, with regard to services, the *Manual on Statistics of International Trade in Services*. Both these guidebooks suggest indicators to be compiled, priorities for data collection, and methods of classifying the data by country and industry.

42. Similar to the FDI-based indicators in the presence of holding companies, pitfalls in the use and interpretation of data on MNC operations may arise when there are chains of ownership. One such case is where a domestic parent firm is, in turn, foreign-owned. For example, suppose that a U.S. firm that is Japanese-owned has a foreign affiliate in Canada. Should the Canadian affiliate’s operations be reflected in the U.S.-compiled data on MNC operations related to outward direct investment, in similar data compiled by Japan, or in the data of both countries? The above guidebooks would recommend that the Canadian affiliate’s operations be reflected in the data of both of the owner countries, but that, if possible, such cases be separately identified. Under this approach, the United States would be able to provide information on all foreign operations that are controlled by firms resident in the United States, as well as on the domestically owned and foreign-owned subsets of those firms. Viewing the same example from the Canadian perspective, the international guidance is to record the operations on the basis of the country of the ultimate investor (Japan, in this case), but if possible also to present some data according to the country of the immediate investor (that is, the United States).

43. In its data on MNC operations, BEA has followed this basic approach. That is, it includes in its data related to outward investment data on the operations of all foreign affiliates that are owned by U.S.-resident firms, while identifying at an aggregate level the portion of these data that are accounted for by U.S. firms that are, in turn, foreign-owned. Its operations data for U.S.-resident firms that are foreign-owned are classified primarily according to the country of the ultimate investor, but some data classified according to the country of the immediate investor (first foreign parent) also are provided. Some U.S. affiliates have U.S.-resident firms as their ultimate investors; these affiliates are separately identified in data that are classified by country

of ultimate investor, which may help avoid what otherwise could be a pitfall in the interpretation of estimates of the portion of the domestic economy that is accounted for by foreign-owned firms.

44. Consistent with the recommendations of the above-mentioned international guidebooks, and as has been its practice for many years, BEA compiles several different indicators of MNC operations, including sales, value added, employment and employee compensation, research and development expenditures, taxes, income statements, and balance sheets. This approach has allowed diverse issues involving MNCs to be investigated, and it has allowed for more nuanced and robust analyses of individual issues than would be possible if only one or a few indicators were collected. In addition, the different measures have different strengths and weaknesses, and by collecting several indicators, the strengths of each measure can be exploited, while the availability of other measures may compensate for any weaknesses.

45. To illustrate the usefulness of multiple indicators, employment may not provide the best indicator of the overall operations of the firm, since it pertains to only one (albeit very important) factor of production, but it is by its nature measured in real terms, and is not directly affected by changes in prices and exchange rates. Sales data provide an indicator of the gross output of the firm and are amenable to being broken down in any of a number of ways—such as according to whether they are to affiliated or unrelated parties or are made in the local economy, to the country of the parent firm, or to other countries. However, sales data do not distinguish the portion of output that originated within the firm from the portion that reflects the use of purchased inputs produced by others. This limitation can be overcome by the use of data on value added, but value added cannot be as easily allocated to the different classes of customers served by the firm. Thus, several indicators must be used in conjunction with one another to construct a complete and detailed profile of the firm's operations and of the origin and disposition of its output.

46. A recent example of how statistics on MNC operations can be used to address issues of current interest is with regard to questions on what has come to be described as "offshore outsourcing" (or often, simply "offshoring") of production by U.S. companies, either to affiliated or unaffiliated foreign firms. BEA's data on MNC operations have played an important role in informing the public dialog with regard to offshoring that involves the use of foreign affiliates. BEA has taken a number of steps to bring existing data to bear on the issue. These have included accelerating the release of key indicators, organizing and analysing the data with a view to better informing public dialog, and giving a number of presentations on patterns and trends in MNC operations. In addition, it is working to improve its data, such as by adding annual coverage of banks (for which data on operations have been collected only in benchmark surveys conducted at 5-year intervals), adding questions to better capture services output in industries where special definitions and methodologies may be used (specifically, insurance, wholesale and retail trade, and banking), and exploring the possibilities for linking related data sets with a view to providing a richer body of information for analyzing offshoring (such as by linking BEA data on MNC operations with occupational data collected by the Bureau of Labor Statistics).

47. Although there has been some examination of the U.S. operations of foreign-owned firms in connection with the debate over offshoring, most of the attention has focused on the domestic and foreign operations of U.S.-headquartered MNCs. The following highlights illustrate the kinds of information that have proved relevant in this context.

- The measures of value added, capital expenditures, and employment have consistently shown that U.S.-MNC operations are concentrated in the United States, but the distributions of capital expenditures and employment have changed over time. For value added, U.S. parents accounted for about the same share of the MNC total over the period 1977-2003; this share was 74 percent in 2003, down only slightly from 75 percent in 1977. For capital expenditures and employment, the U.S.-parent share has decreased: The U.S.-parent share of capital expenditures decreased from 80 percent in 1977 to 74 percent in 2003, and the U.S.-parent share of employment decreased from 78 percent in 1977 to 72 percent in 2003. The decrease in the parent share of capital expenditures was concentrated in 2002 and 2003, and it may reflect a short-term fluctuation rather than a trend that will be sustained. However, the decrease in the parent share of employment was sustained throughout 1987-2003.
- Employment by foreign affiliates remains concentrated in high-income countries, but in recent years it has grown faster in low-income countries. In 1991-2003, affiliate employment grew at an average annual rate of 9 percent in a selected group of low-income countries, 6 percent in lower- and upper-middle-income countries, and 3 percent in high-income countries. It is not clear to what extent these differences in employment growth reflect wage differentials, but the differences probably occurred at least partly for other reasons. Some of the lower-income countries where affiliate employment has grown the most have had rapidly growing domestic markets and have liberalized policies toward direct investment; some of the differences in growth rates may reflect these factors, rather than wage differentials.
- An aspect of the production pattern for U.S. parent companies that has changed significantly is the degree to which these firms rely on purchased goods and services rather than their own production. During 1977-2003, purchases from outside suppliers as a percentage of total sales for U.S. parent companies in all industries except wholesale and retail trade increased from 63 percent to 68 percent, indicating an increasing reliance on purchased inputs. Some of these outside purchases were obtained from domestic suppliers, and some were obtained from both affiliated and unaffiliated foreign suppliers. The share of purchases that were imported directly from foreign suppliers has been essentially unchanged, at 9 percent in both 1977 and 2003. However, it must be recognized that in many cases, the goods and services purchased domestically have some imported content, which may be considered "indirect imports"; attempting to gauge these indirect imports by combining its data on MNC operations with data from its input-output accounts is on BEA's agenda for future research.

48. While BEA's data on the operations of U.S. MNCs indicate a relatively stable mix of domestic and foreign operations, the inferences that can be drawn from these data about the production strategies of MNCs and about the ultimate effects of U.S.-MNC activity on the U.S. economy and on foreign economies are limited. The U.S.-parent share of U.S.-MNC activity can change for a number of reasons, and these changes do not uniformly correspond to either additions to or subtractions from production and employment in the United States.

49. To illustrate the difficulty in linking cause and effect, it might be expected that new direct investment abroad by U.S. MNCs would cause the share of U.S. parent companies in worldwide MNC employment to fall and that of foreign affiliates to rise, but its impact on employment in the United States and abroad could vary, depending on the form of the investment and the reasons why it was undertaken (see chart 6). For example, a new investment might represent the establishment of a new company (or "greenfield" investment), the acquisition of a successful existing company, or the acquisition of a failing company. In each case, the employment by affiliates would rise, but the impact on host-country employment would likely differ. Furthermore, this impact cannot be discerned from information on MNC operations alone. Instead, the impact could be determined only by examining a wide range of factors, such as the overall level of employment in the economy and the types of jobs involved.

50. To illustrate the significance of the *reasons* for the investment, affiliate employment shares might rise either because of the shifting of production from parents to affiliates or because of the opening of new overseas markets that can best be served through a locally established enterprise. In the case of production shifting, the rise in employment by affiliates might be expected to come partly or wholly at the expense of employment by the parents. However, even in this circumstance, U.S. jobs might have been saved, if shifting some operations to lower-cost overseas facilities were necessary for the firm to survive and for the remaining operations in the United States to continue. In contrast, in the example of new overseas markets, the rise in employment by foreign affiliates would not affect employment in the United States by parent companies, or it could even cause U.S. employment to rise, because of the need to provide headquarters services to the newly established affiliates.

51. In sum, statistics on MNC operations can help to inform discussions of offshoring, but they alone cannot provide all the answers. Many of the questions are not only questions of fact, but analytical questions that must take into account a variety of factors—such as exchange rates, rates of economic growth in home and host economies, and policies toward foreign direct investment—in addition to statistics on the domestic and foreign operations of the firms that make foreign direct investments. Finally, given the impossibility of conducting counterfactual experiments that would compare worlds with and without direct investment, realism requires us to acknowledge that some uncertainty about the interactions and mutual dependencies between domestic and foreign operations of MNCs will remain even with the best of data and economic analysis.

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² Charts and tables are at the end of the paper.

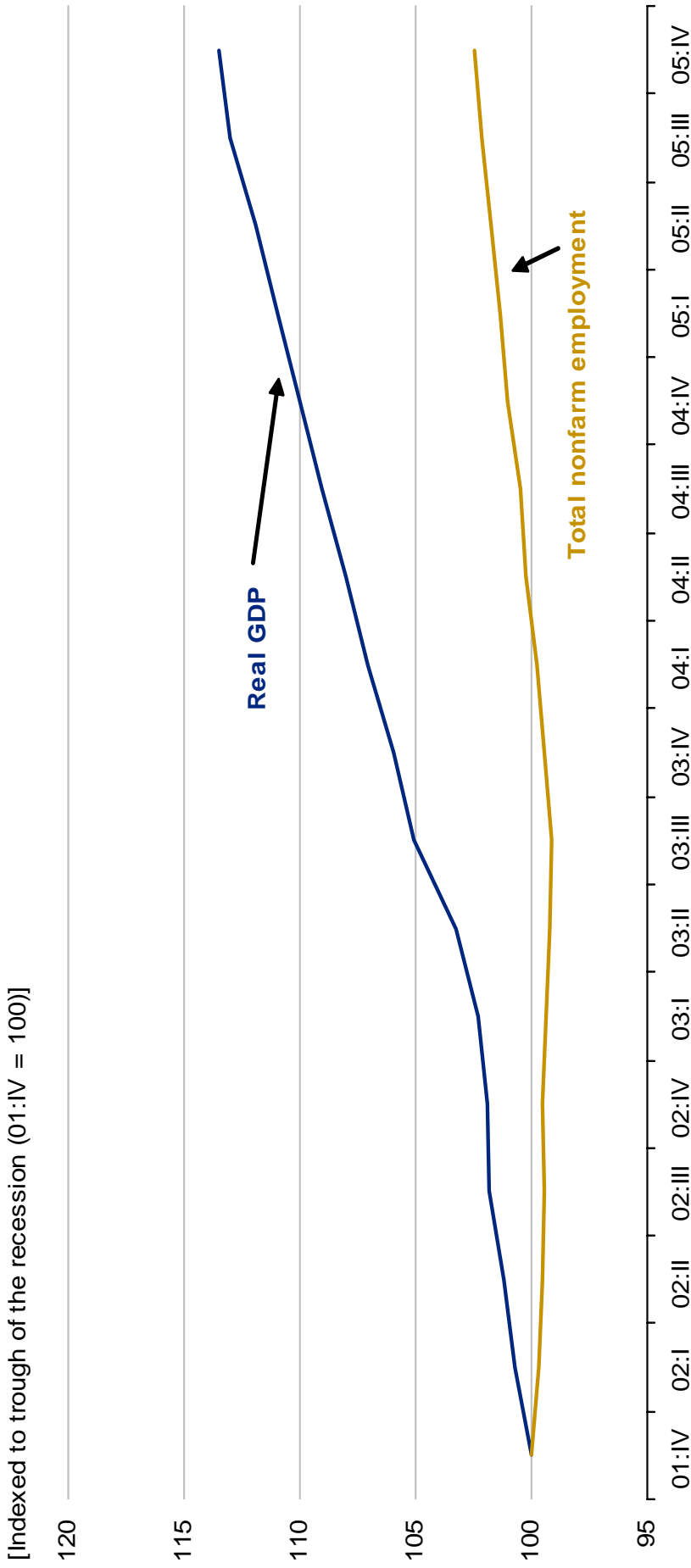
³ Information on expectations cannot be collected directly, but is estimated based on historical trends in claims and investment income.

⁴ For a discussion of how statistics have been brought to bear on these and other questions related to globalization, see Kozlow, 2006.

⁵ A holding company is a company whose primary activity is holding the securities or financial assets of other companies. The increased use of holding-company affiliates is part of a broader trend in which the U.S. parents own foreign affiliates that, in turn, own other foreign affiliates. However, holding companies have contributed the most to this trend.

⁶ For a discussion of tax implications of inversions of U.S. corporations, see " U.S. Department of the Treasury, Office of Tax Policy (2002).

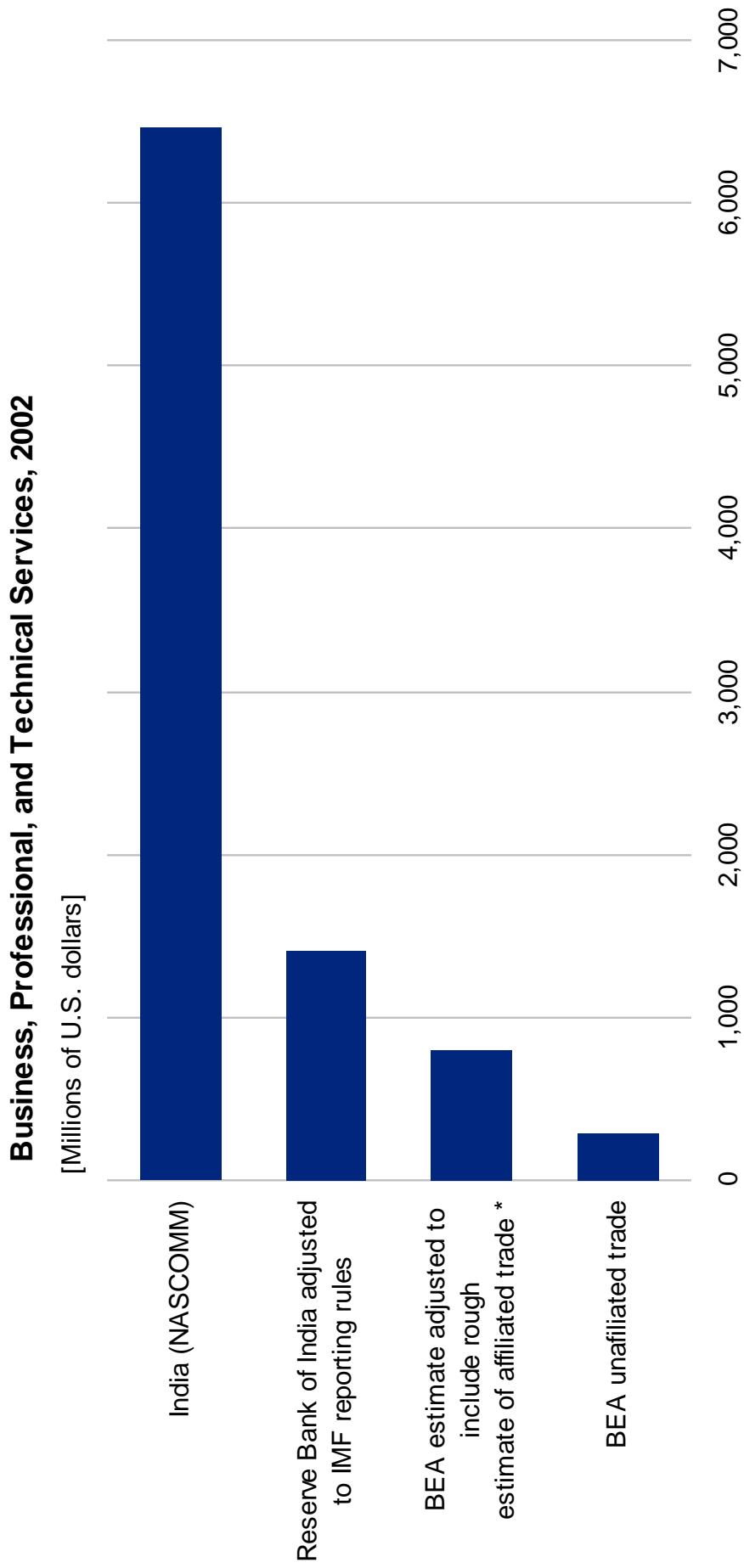
Chart 1 GDP and Employment



Source: BEA and Bureau of Labor Statistics CES data (accessed from respective websites on March 2, 2006). The trough of the recession is based on the classification of the National Bureau of Economic Research.

Chart 2

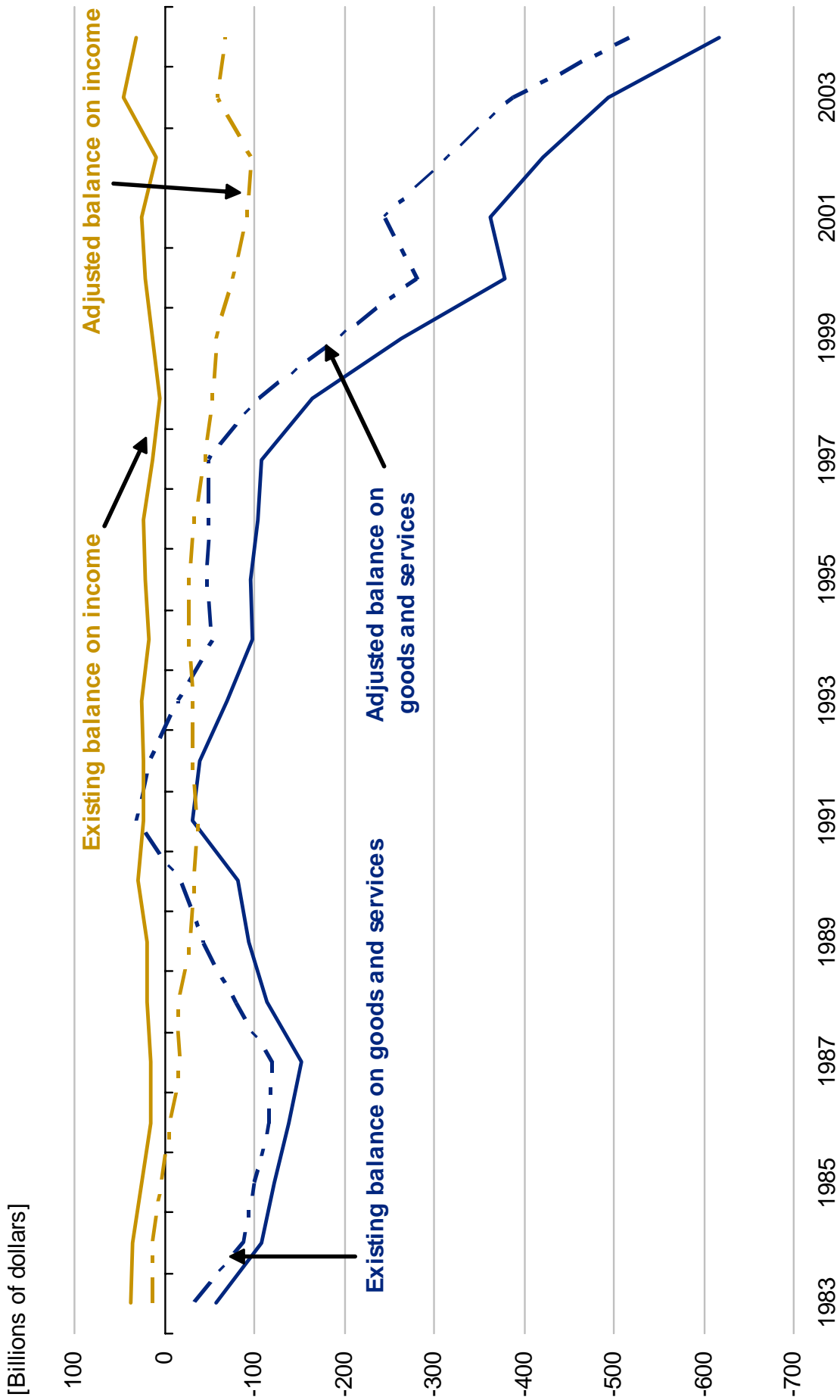
U.S. and Indian Data on Trade in BPT Services



Source: BEA, NASCOMM, Reserve Bank of India (RBI), and BEA estimates based on RBI data.
* BEA unaffiliated trade with India increased by the ratio of total unaffiliated and affiliated trade in computer and information services.

Chart 3

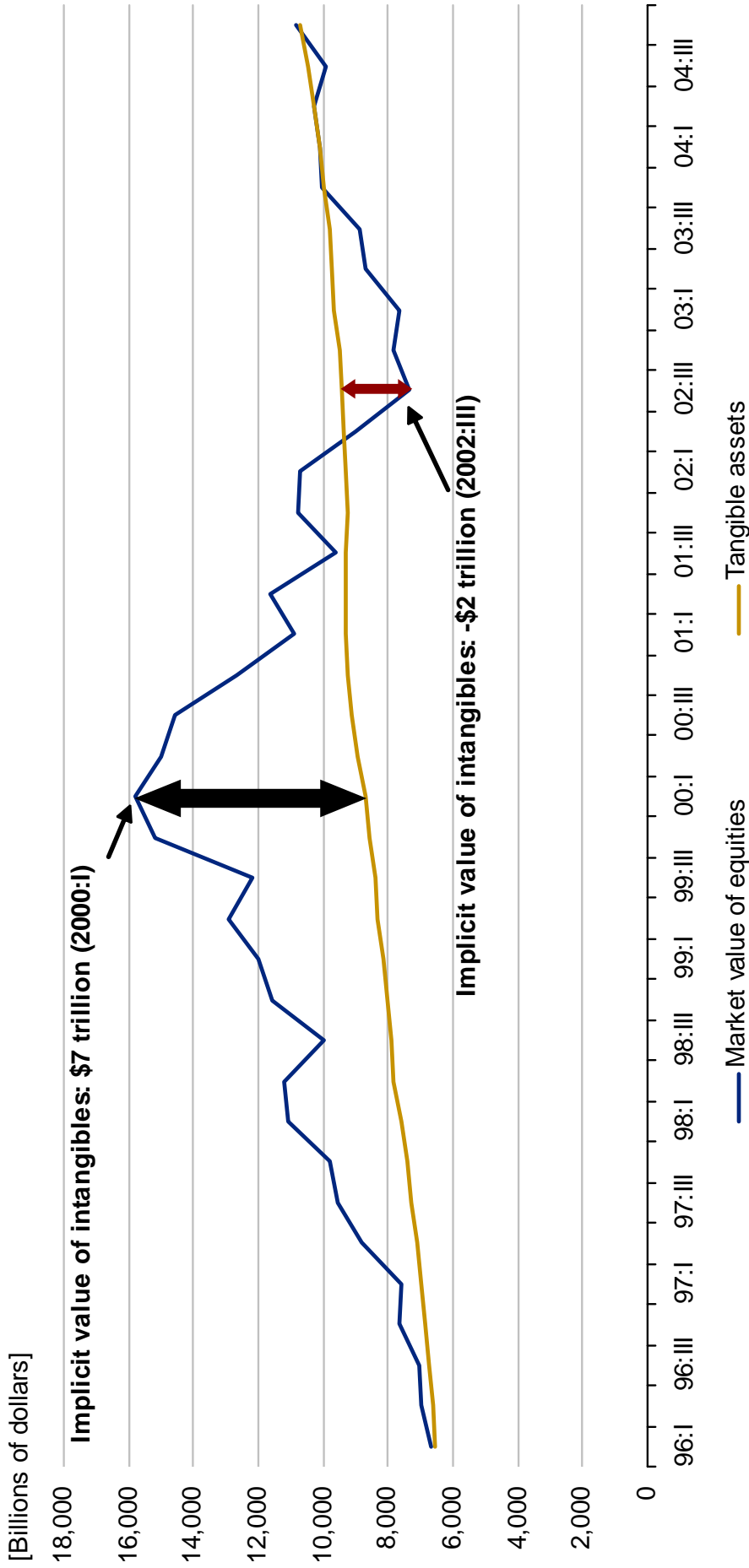
International Transactions and Alternative Measures



Source: BEA international transactions and international investment data. See appendix for calculations of alternative measures.

Chart 4

Potential Volatility Involved in Measuring Intangibles



Source: FRB Flow of Funds (L.102 and B.102) release March 9, 2006. Data based on nonfarm nonfinancial corporate business.

Note: A number of analysts attributed the large difference between equity values and the replacement value of plant and equipment to intangibles during the market run-up in the late 1990s.

Chart 5 China Statistics Comparison

FDI Flows to China, 2000-2002 Total Flows

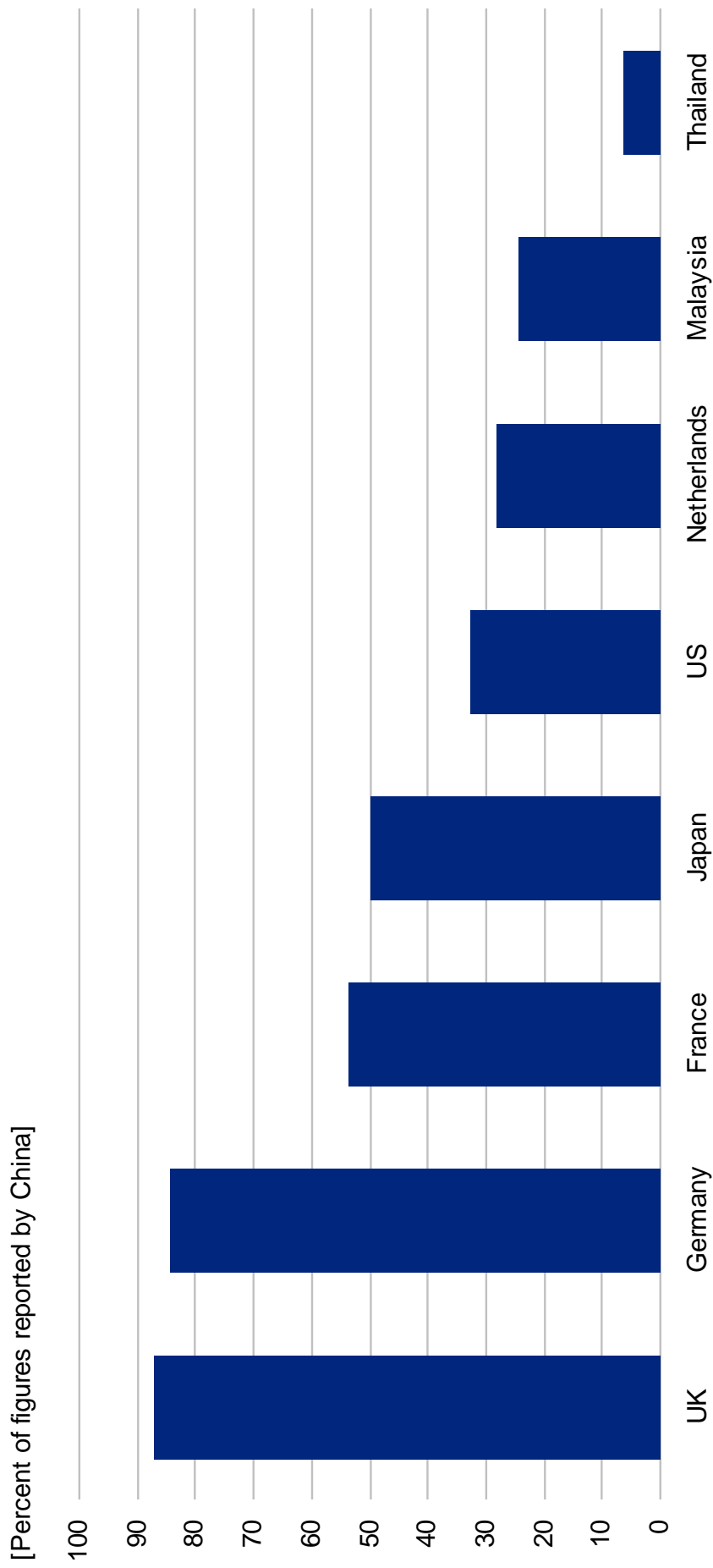
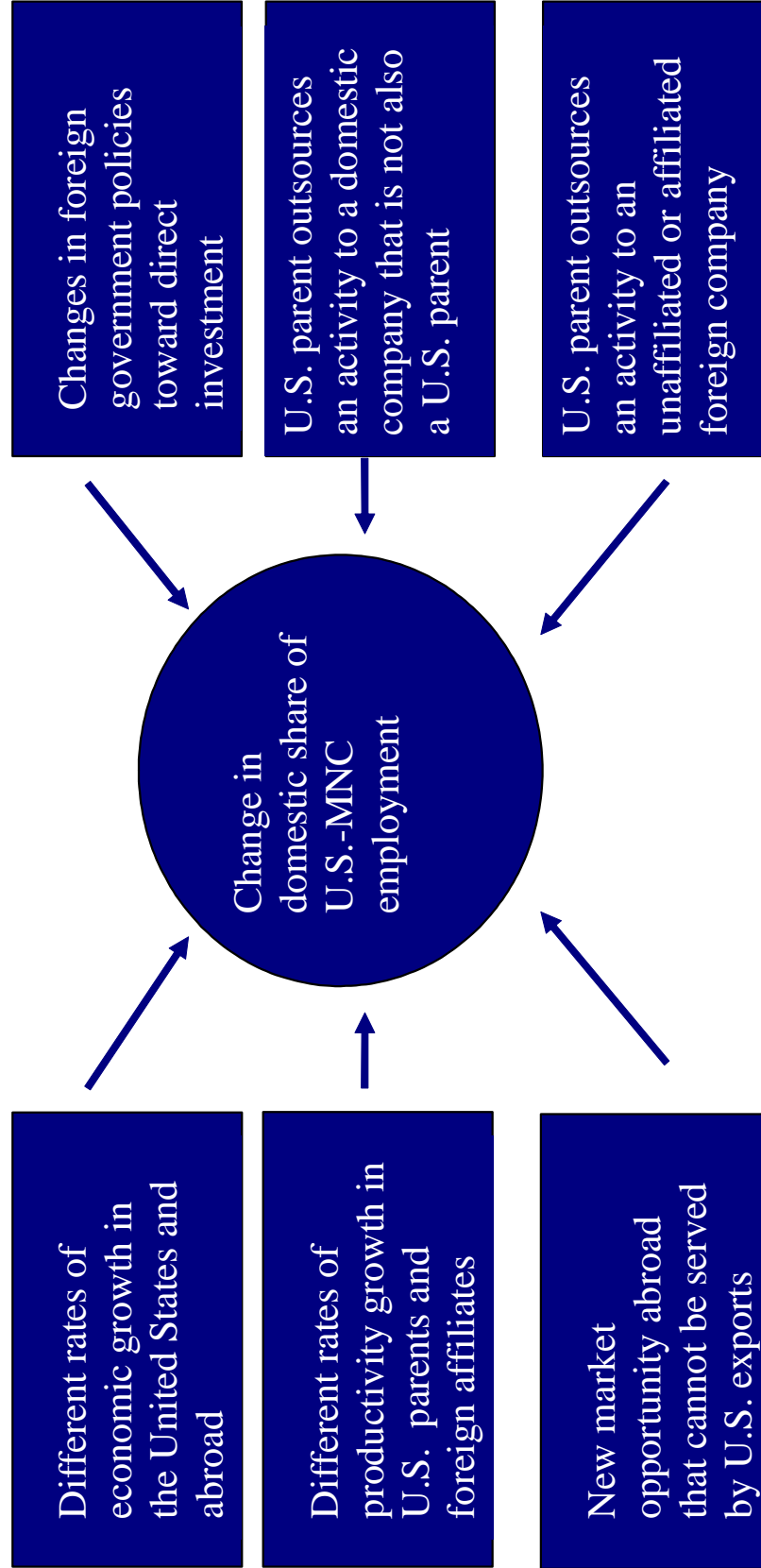


Chart 6

Some Possible Causes of a Change in the Domestic (U.S.) Share of Employment by a U.S. Multinational Company



Appendix 1

International Transactions and Alternative Measures

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
[Billions of dollars]																						
Existing account data																						
Balance of payments																						
Exports of goods and services	266	291	289	310	349	431	487	535	578	617	643	703	794	852	935	933	966	1,071	1,007	977	1,023	1,151
Direct investment receipts	32	35	35	37	46	58	62	66	59	58	67	77	95	103	115	104	132	152	129	146	193	233
All other income receipts	58	73	63	60	62	78	99	106	90	76	69	89	115	124	141	158	162	199	160	125	117	146
Imports of goods and services	324	400	411	449	501	546	580	616	609	656	713	802	891	956	1,043	1,099	1,230	1,450	1,370	1,398	1,517	1,769
Direct investment payments	4	8	7	7	8	12	7	3	-2	2	8	22	30	33	43	38	53	57	13	46	71	105
All other payments	49	65	66	75	86	106	134	140	127	107	103	127	159	171	201	219	227	273	250	215	192	244
Balance on goods and services	-58	-109	-122	-139	-152	-115	-93	-81	-31	-39	-70	-98	-96	-104	-108	-165	-263	-378	-363	-421	-495	-618
Balance on income	36	35	26	15	14	19	20	29	24	24	25	17	21	22	13	4	14	21	25	10	46	30
Unilateral current transfers, net	-17	-20	-22	-24	-23	-25	-26	-27	10	-35	-40	-40	-38	-43	-45	-53	-51	-59	-52	-64	-71	-81
Balance on current account	-39	-94	-118	-147	-161	-121	-99	-79	3	-50	-85	-122	-114	-125	-141	-214	-300	-416	-389	-475	-520	-668
International investment position (IIP) - at market value																						
Direct investment abroad	274	271	386	530	590	692	832	732	828	799	1,061	1,115	1,364	1,608	1,879	2,280	2,840	2,694	2,315	2,023	2,718	3,287
Direct investment in the U.S.	153	172	220	273	316	392	535	540	669	696	768	758	1,006	1,229	1,637	2,179	2,798	2,783	2,560	2,027	2,457	2,687
Net IIP of direct investment	121	98	166	257	274	301	298	192	158	102	293	357	358	379	242	101	41	-89	-245	-5	261	600
Rate of return																						
Direct investment abroad	13%	13%	11%	8%	8%	9%	8%	8%	8%	7%	7%	7%	8%	7%	7%	5%	5%	5%	5%	7%	8%	8%
Direct investment in the U.S.	3%	5%	4%	3%	3%	3%	2%	1%	0%	0%	1%	3%	3%	3%	3%	2%	2%	2%	0%	2%	3%	4%
Differential (investment abroad - in U.S.)	10%	8%	7%	5%	6%	6%	7%	8%	8%	7%	6%	4%	4%	4%	4%	3%	3%	3%	5%	5%	5%	4%
Alternative measure																						
Balance of payments																						
Exports of goods and services	266	291	289	310	349	431	487	535	578	617	643	703	794	852	935	933	966	1,071	1,007	977	1,023	1,151
Plus: "Exported services" from direct investme	24	21	22	22	31	35	49	61	62	55	56	45	48	55	59	58	71	97	118	105	107	99
Adjusted exports of goods and services	290	312	311	332	380	466	536	597	640	672	699	748	843	906	994	992	1,037	1,168	1,125	1,082	1,129	1,250
Direct investment receipts (FDI return rate)	8	14	14	15	15	24	13	5	-3	3	12	32	47	48	56	46	61	55	11	40	87	134
All other income receipts	58	73	63	60	62	78	99	106	90	76	69	89	115	124	141	158	162	199	160	125	117	146
Imports of goods and services	324	400	411	449	501	546	580	616	609	656	713	802	891	956	1,043	1,099	1,230	1,450	1,370	1,398	1,517	1,769
Direct investment payments	4	8	7	7	8	12	7	3	-2	2	8	22	30	33	43	38	53	57	13	46	71	105
All other payments	49	65	66	75	86	106	134	140	127	107	103	127	159	171	201	219	227	273	250	215	192	244
Adjusted balance on goods and services	-34	-88	-100	-116	-121	-80	-44	-20	31	16	-15	-54	-48	-49	-49	-107	-193	-281	-245	-316	-388	-519
Adjusted balance on income	13	14	4	-7	-17	-16	-29	-33	-38	-31	-30	-28	-27	-33	-46	-54	-57	-76	-92	-95	-60	-68
Unilateral current transfers, net	-17	-20	-22	-24	-23	-25	-26	-27	10	-35	-40	-40	-38	-43	-45	-53	-51	-59	-52	-64	-71	-81
Balance on current account	-39	-94	-118	-147	-161	-121	-99	-79	3	-50	-85	-122	-114	-125	-141	-214	-300	-416	-389	-475	-520	-668

Source: BEA international transactions and international investment data. Note: italicized figures show changes as a result of the alternative methodology.

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