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**MULTINATIONAL ENTERPRISES (MNES) AND ALLOCATION OF INCOME IN
NATIONAL ACCOUNTS**

**THE IMPACT OF MULTI-NATIONAL COMPANIES ON BALANCE OF PAYMENTS AND
NATIONAL ACCOUNTS**

Note by the Bureau of Economic Analysis, United States¹

Summary

Multinational Companies (MNCs) present special measurement challenges for national and balance of payments accounts. MNCs allocate resources, price intra-company transactions, and bill transactions in a manner that is designed to maximize global net profits and their accounting of activities and transactions may not align well with the underlying economic behavior that ideally should be captured in the national accounts of each of the countries where they operate. These accounting issues are a significant problem because of the growing size of MNC activities.

¹ This paper has been prepared by Steve Landefeld, Brent R. Moulton and Obie Whichard (Bureau of Economic Analysis, U.S. Department of Commerce) at the invitation of the UNECE secretariat.

1. Multinational Companies (MNCs) present special measurement challenges for national and balance of payments accounts. This is in part because MNC's are in the business of maximizing their company-wide global after-tax profits. As a result, they allocate resources, price intra-company transactions, and bill transactions in a manner that is designed to maximize global net profits and their accounting of activities and transactions may not align well with the underlying economic behavior that ideally should be captured in the national accounts of each of the countries where they operate. These accounting issues are a significant problem because of the growing size of MNC activities. For the United States, MNC's account for nearly 30 percent of value added, over 60 percent of exports, and over 50 percent of imports (Chart 1).

I. MULTINATIONAL COMPANIES AND THE GLOBAL ALLOCATION OF INCOME

2. A growing number of large MNC's are transferring their intangible assets to foreign affiliates (which when the affiliate is a special purpose entity are called royalty and license companies).² Often the transfer is to a country with lower tax rates than the country of the parent, which is important in high tax countries such as the United States. Between 1977 and 2005 the share of U.S. parent companies' receipts for the sale or use of intangible assets and for royalties and license fees with "tax-haven" countries increased from 13 percent to 37 percent (Table 1).

3. In the case of U.S. parents, they are either able to immediately write off the expense of research and development for tax purposes or, in some cases, take a direct tax credit. The parent can then sell the intangible asset to a subsidiary in a low-tax country at a relatively low price, or transfer the asset through a contract that charges the subsidiary a relatively low royalty. The parent is able to lower its global tax burden by: a) reducing its U.S. taxes during the development period by booking expenses in the United States, and b) by shifting the income from the intangible to a low-tax country, where it can be shielded from U.S. taxes until it is repatriated.

4. MNC's can also reduce their global taxes through a number of other devices, including interposing a finance or holding company affiliate in a low-tax country between themselves and their foreign operating affiliates; structuring transfer prices between parents and their subsidiaries to shift net income toward subsidiaries in lower cost countries; establishing offshore factoring corporations in low tax countries that bill and collect for the parent's worldwide sales; and inverting the corporate ownership structure, with an overseas affiliate in a low-tax country becoming the parent that collects net income for the multinational's worldwide corporate structure.

5. The effect of all these practices is to lower recorded GDP in high-tax countries and raise recorded income in lower tax countries relative to the actual levels of economic activity occurring in those countries. Similar recording issues are of course also present in the affected components of the national accounts and balance of payments accounts. One observer has

² For example, see Glenn R. Simpson, "Irish Subsidiary Lets Microsoft Slash Taxes in U.S. and Europe," *Wall Street Journal* (November 7, 2005).

contended that “this ability of firms to shift the location of assets and profits by paper transactions internal to the firm makes the location of production ambiguous.”³

6. The challenges associated with these practices are highlighted by Table 2, which shows the increasing share of U.S. direct investment in “tax haven” countries. Between 1977 and 2005, the share of U.S. direct investment in tax havens increased from 19 percent to 34 percent.

7. Recently, analysts have called the investment figures themselves into question. In 2006, Ricardo Hausmann and Federico Sturzenegger of the Harvard University Center for International Development argued that estimates of direct investment derived from company accounting records fail to take into account the value of a variety of intangible assets that tend to be most abundant in multinational firms.⁴ Proceeding from the observation that the United States regularly runs a surplus on investment income notwithstanding a sizable negative international investment position, they concluded that sources of value must exist that were not being fully captured in the estimates. The most important of these, in their view, was knowledge—“the notion that FDI investments abroad are a vehicle for the dissemination of ideas, blueprints, knowledge and that they are the vehicle for unaccounted exports of services produced by headquarters and used by affiliates around the world.”

8. Hausmann and Sturzenegger suggested that alternative investment estimates capturing such unmeasured “Dark Matter” might be constructed by capitalizing the earnings generated by the investments. However, there is little basis for selecting an appropriate rate of return to use in the calculation, inasmuch as returns on direct investment are affected by a wide variety of factors and may differ markedly across countries and over time. Short of trying to shadow price a wide range of MNC’s rather unique internal transactions at market prices, there is probably little that can be done to address these problems in the misallocation of MNC’s income and production.

9. On the other hand, there are a number of recording and reporting practices for measuring and recording income by MNC’s that are inconsistent with the international guidelines that may be amenable to respondent outreach efforts, clarification of instructions, and cognitive work on survey design to promote improved reporting. For example, many BOP compilers have reported difficulties in collecting statistics on reinvested earnings, indicating this as part of a more general problem of obtaining data on activities located wholly outside the country. Some respondents may fail to distinguish properly between the domestic and foreign parts of the firm, which may result in such errors as counting as cross-border exports foreign affiliates’ local sales in host countries. Such mistakes are understandable, since MNCs often view themselves from the perspective of their worldwide operations and place little importance on national boundaries. Nonetheless, they impair the accuracy of the allocation of output and incomes across countries and geographic regions.

³ Robert E. Lipsey, “Measuring International Trade in Services,” NBER Working Paper 02138, May 2006, p. 26.

⁴ Ricardo Hausmann and Federico Sturzenegger, “Global Balances or Bad Accounting? The Missing Dark Matter in the Wealth of Nations,” Center for International Development at Harvard University Working Paper 124, January 2006.

10. In the case of intellectual property, international standards have changed and evolved in ways that probably would not have occurred were the concepts involved simpler and easier to understand. The three most recent editions of the IMF *Balance of Payments Manual*, for example, present three fundamentally different methods for recording the sale of a patent. The fourth edition—BPM4—released in 1977, took the view that “a foreigner . . . cannot be said to purchase such assets outright from a resident of the economy whose government issued them” (para. 323). Instead, “he can only be considered to have a financial claim on a resident entity—actual or notional—that must be construed as being the owner” (para. 363). Thus, payments for the use of the property would give rise to services payments to the “resident entity,” which in turn would generate property income for the “purchaser” of the asset that would be deemed to own that entity. In BPM5, released in 1993, the view that a patent could not be owned outright by a nonresident was dropped, and the sale was recorded in the capital account, as the sale of a “nonproduced” asset. In the near-final version of BPM6, still another view is reflected, under which the results of R&D are regarded as produced assets, and sales of patents are recorded as trade in services. Each of these methods can be justified from a certain perspective, but none of them manages to solve all the problems at once. For example, the latest recommendation has the virtue of recognizing that R&D is a form of production, but including the sales of patents in trade in services creates something of an anomaly, as the sole type of “service” transaction for which the underlying productive activity may have occurred in earlier periods.

11. Difficulties in the attribution of investment and income also can occur when the immediate owners of the investments differ from the ultimate owners at the top of the ownership chain. To the extent that companies can and will report the information, there is significant value to reporting investments in MNC’s on an “ultimate beneficial owner” (UBO) basis, in addition to the immediate counterparty basis required for conventional balance of payments accounts. In some cases, the differences on the two bases are striking. For example, on an immediate counterparty basis, the book value of the direct investment position of Luxembourg in the United States was \$131 billion in 2006, but on a UBO basis, it was much smaller—only \$14 billion. For the Middle East, in contrast, the position on an immediate counterparty basis was \$18 billion, but on a UBO basis, it was considerably larger—\$30 billion. These divergent patterns reflect the fact that many investments whose ultimate origins are in other countries, such as those in the Middle East, are routed through countries of convenience such as Luxembourg.

12. The forthcoming fourth edition of the OECD *Benchmark Definition of Foreign Direct Investment* has addressed the need to follow investments to their ultimate origins and destinations. It includes specific recommendations for identification of ultimate investing countries. However, following investments to ultimate host countries has been placed on the research agenda, due to a variety of conceptual and practical issues that could not be resolved in the time available. Included among them are issues related to the fungibility of money and to the fact that additional funding may be added to those of the direct investor at each link in the ownership chain.

II. MULTINATIONAL COMPANIES AND GAPS IN THE STATISTICAL SYSTEM

A. Multinational Companies and the Measurement of GDP and GNI at Current Prices

13. *Offshoring of Royalties and Licenses.* In the previous section, we discussed the transfer of intangible assets to royalty and license companies. Suppose that an intangible asset (for example, software) was developed in country A, which is also the location of the parent corporation, and that a subsidiary royalty and license company is established in country B to book revenue from license sales. The GDP of country A declines and the GDP of country B increases, though because of the SNA's special treatment of reinvested earnings on direct foreign investment, the GNI of countries A and B should be unaffected by where the license sales are booked. Economic theory may suggest that economic ownership of the intangible asset may more appropriately reside with the parent corporation, which undertook the risks associated with the development of the intangible asset and is the final beneficiary of the rewards associated with its use. If we can agree that the economic ownership conceptually belongs in country A, then the booking of the sales to the royalty and license company in country B implies that GDP in country A is understated and GDP in country B is overstated.

14. *Outsourcing and Offshoring of Intermediate Services.* The offshoring of intermediate services has also received considerable attention. There are two major measurement issues: 1) How well do the data on trade in services capture the imports of intermediate services? Traditional services and sampling frames may fall behind in their ability to capture fast-changing services, and to the extent that they are missed, imports may be understated, causing GDP to be overstated. 2) Many statistical offices use extrapolators that are based on fixed ratios, for example ratios of sales to value added. Rapid movement from in-house production of services to domestic or foreign sources would cause these ratios to change, implying bias in the extrapolators of GDP. This problem can be addressed by regularly benchmarking the national accounts to comprehensive and reliable source data that, in particular, cover the domestic and foreign suppliers of intermediate services.

15. *Misleading Transfer Prices.* As we've noted, MNCs may have incentives to raise or lower transfer prices on exports and imports moving to or from affiliated entities, though tax authorities will attempt to enforce economically appropriate transfer prices. To the extent that they are successful in booking transfer prices that overstate or understate the true economic value of the transaction, GDP will be misstated. Assuming that the transfer prices are consistently reflected in the company's books, all three approaches to measuring GDP (the production approach, expenditure approach, and income approach) will be in error. However, because of the SNA's special treatment of reinvested earnings on foreign direct investment, GNI should be invariant to use of incorrect or misleading transfer prices (because GNI reflects the offsetting income of the foreign subsidiaries). Unfortunately, statistical offices have very little ability to adjust for erroneous transfer prices. Consequently, these types of errors may permanently affect our measures of GDP.

B. MNC's, Offshoring, and the Understatement of Real GDP and Productivity

16. *Non-comparable imports.* When a domestic parent switches from a domestic supplier of inputs to a foreign subsidiary supplying those inputs, the difference in price between the

suppliers generally does not appear in the deflators that are used for domestic and foreign prices in the final expenditure approach or in the deflators for intermediate consumption in the production approach. The reason that this difference in price is not recorded is that for most countries, prices are collected from sellers rather than purchasers, and the indexes for domestic prices (PPIs) are compiled in a separate data collection from those for import prices. A recent article by Michael Mandel in *Business Week* argues that the failure to record the price declines that occur with the switch to foreign suppliers causes the growth of real GDP to be overstated during periods of increased outsourcing.⁵

17. Mandel suggests that the solution to the problem would be to modify the procedure for compiling the import price index when new imports appear by directly comparing the price of the imported good to the domestic good that it replaces. However, it may be difficult to make a direct comparison of the costs of the domestic vs. the foreign made goods (imports). If, for example, a golf club company switches from a domestic supplier to a foreign supplier it is likely to be at the end of the existing contract for the old model “driver” and at the introduction of the new model. Now while to many the differences in models appear cosmetic, to the many golfers that believe a new model will cure all their problems, they are willing to pay a significant premium for the new club. As a result, price statisticians deem the older and newer models “non-comparable” and simply link the old index to a new index for the imported good at the same level and then extrapolate forward using period-to-period changes in the new imported good’s price. To the extent that the imported goods is on a quality-adjusted basis cheaper, real imports will be understated, and real GDP and productivity will be overstated. In addition, import prices will be overstated and overall inflation will be understated.

18. At some level, this problem is similar to either the old “new goods” problem that occurs whenever new generations of goods and services replace earlier generations: how much of the price difference represents the improved quality of the new good and how much is price?

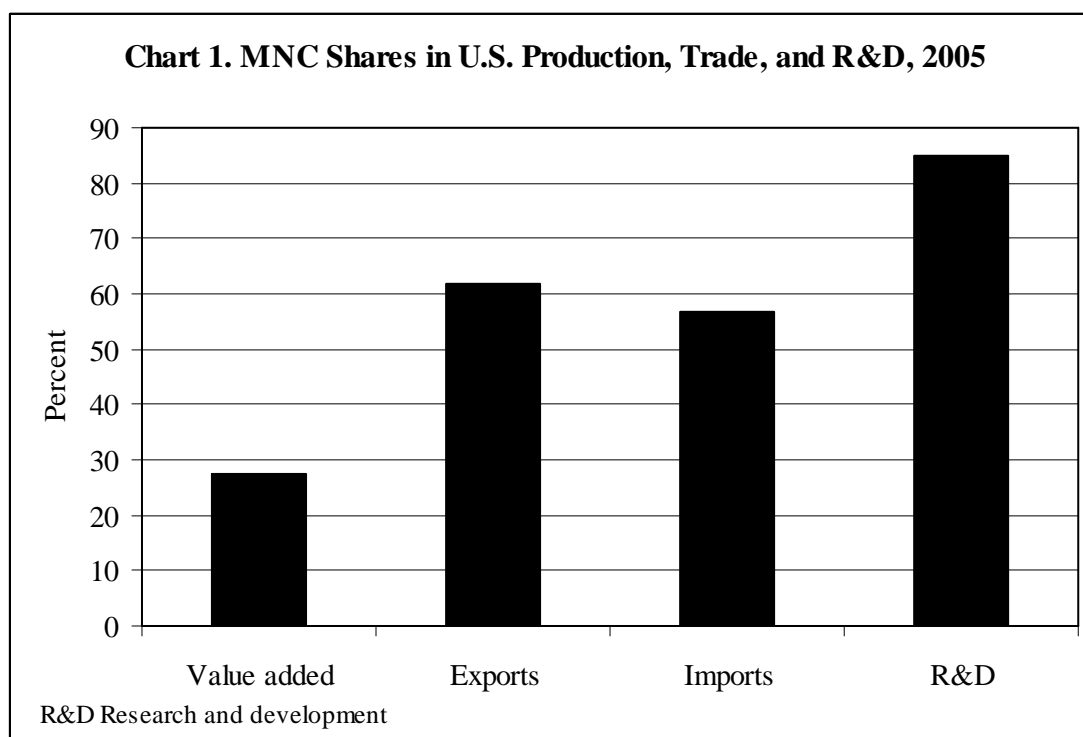
19. One method used for computers is to observe the drop in the price of the previous generation computer that is required to keep it competitive with the newer generation computer. Presumably this difference is the value consumers place on the improved characteristics embodied in the new computer. Alternatively, where lots of data is available on prices, sales, and characteristics of the good – as there is with computers – the hedonic regressions can separate out the value consumers place on the next generation computers’ characteristics from the pure price difference between the models.

20. Unfortunately, most imports are intermediate products and there is little available data with which to run hedonic regressions or compare market prices of domestic and foreign inputs. Indeed, the switch to foreign suppliers can occur quite quickly. In just a three- year period, most golf-club drivers in the United States went from being supplied by domestic suppliers to Chinese suppliers.

⁵ Michael Mandel, “The Real Cost of Offshoring,” *Business Week* (June 18, 2007).

21. One indirect means of estimating the extent of the problem is suggested by a study by Feenstra and Reinsdorf.⁶ In effect, they estimated the elasticity of demand for imports and then measured the change in imports' market share and used the two pieces of information to "back-out" the quality-adjusted price differential between imported and domestically supplied goods. For the United States, they found that real GDP growth was overstated by 0.1 percentage points and productivity growth, by 0.2 percentage points. They also note that this problem of "new goods" extends to virtually all goods and services. Currently, the switch to new goods and services is addressed via hedonic techniques for about 20 percent of goods and services. For the other 80 percent of goods and services in GDP, linking is often used, suggesting that the upward bias imparted to real GDP by the overstatement of import prices and understatement of real imports (imports account for about 17 percent of US GDP) is more than offset by the overstatement of domestic prices and the resulting understatement of domestically produced GDP.

22. Like the problems associated with the allocation of MNC income, it is unclear what can be done about this problem.



⁶ Robert Feenstra and Marshall Reinsdorf, "Effects of Terms of Trade Gains and Tariff Changes on the Measurement of U.S. Productivity Growth," Paper presented at NBER International Trade and Investment Program, March 28-29, 2008.

Table 1. U.S. Parents' Receipts for Royalties and License Fees from Foreign Affiliates in Tax-Haven Countries*
[Millions of dollars]

	1977	1982	1989	2005
Belgium	104	149	326	580
Ireland	10	39	255	4,285
Luxembourg	2	1	5	91
Netherlands	107	166	633	1,589
Switzerland	45	83	255	4,160
Bermuda	2	10	4	(D)
UK Islands, Caribbean	0	0	0	(D)
Hong Kong	3	14	94	393
Singapore	10	24	151	2,278
Tax haven total	283	486	1,723	13,995
Worldwide total	2,173	3,585	10,082	37,771
Tax haven share (percent)	13.0	13.6	17.1	37.1

D Suppressed to avoid disclosure of data of individual companies.

* The list of tax-haven countries is from Martin A. Sullivan, "U.S. Multinationals Move Profits to Tax Havens," *Tax Notes* (weekly newsletter of www.taxanalysts.com) February 9, 2004.

Table 2. U.S. Direct Investment Position in Tax-Haven Countries*
[Millions of dollars]

	1977	1982	1989	2005
Belgium	4,612	5,549	7,710	48,409
Ireland	986	2,031	4,665	71,255
Luxembourg	677	1,098	1,560	69,746
Netherlands	4,534	6,760	19,160	184,614
Switzerland	7,182	12,863	21,144	81,048
Bermuda	7,708	11,519	18,297	103,454
UK Islands, Caribbean	336	1,425	6,123	79,728
Hong Kong	1,328	2,854	5,412	32,577
Singapore	516	1,720	2,998	54,500
Tax haven total	27,879	45,819	87,069	725,331
Worldwide total	145,990	207,752	381,781	2,135,492
Tax haven share (percent)	19.1	22.1	22.8	34.0

* See note to table 1.

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