

The US Current Account, New Economy Services, and Implications for Sustainability

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Abstract

This essay considers the implications for sustainability of the US current account of widespread uptake of new economy services around the world. The main contribution of this paper is to estimate new income elasticities for US exports and imports of services that have become increasingly internationally tradable on account of the networked information technologies characteristic of the new economy. These elasticity estimates are then incorporated into a simple model of the US current account. Assumptions on the increase in global growth coming from widespread uptake of new economy services around the world are taken from other sources. The new estimates of income elasticities and the assumptions on global growth yield a trajectory for the US current account deficit that is compared to a base case without increased integration of new economy services in international trade and around the world. The paper concludes that although new economy services reduce the asymmetry in estimated income elasticities and contribute to raising global growth, reasonable estimates of these two structural improvements are not sufficient to stabilize the US current account deficit, in part because the share of new economy services in trade is still small.

Overview

This paper considers the implications for sustainability of the US current account of widespread uptake of “new economy” services around the world. New economy services are those that are increasingly internationally tradable on account of the advance of network information technology.

The paper first discusses concepts of sustainability of external balance, which includes the measures of current account as a share of GDP and net capital flows as a share of the change in global wealth. For examination of structural change, an assessment based on real-side measures such as the CA/GDP ratio is more appropriate and is used here.

The paper then considers new economy services. First, as is well known, as economies develop, services as a share of GDP rises, and regardless of the level of development, services are income-elastic. Second, in recent years, a number of technological factors, including the Internet, cheaper and more powerful computers, and standardized software programs have made services more tradable internationally, including for example, data transcription, engineering blueprints, and call centers. Third, there is ample room for improvement in the efficiency of the service sector in most economies. Research shows that a more efficient service sector in an economy, coming in part from intensive use of information technology in services and in part from globalization of services, raises productivity and growth of the economy.

The evolution toward more international trade in services could have profound implications for US external balance and sustainability. Based on revealed comparative advantage, US service producers are globally competitive. Deeper integration of new economy services into economies around the world could engender an upward structural change in the income elasticity of US trade as well as promote more rapid growth in our trading partners. Since income growth and income elasticities are important determinants of US trade and the current account balance, the question is how much these changes might affect the medium-term trajectory of the US current account.

Defining and Benchmarking Sustainability of the Current Account

A sustainable external balance can be defined and examined several ways. Most commonly, external sustainability is judged against a country’s own data. For example, the current account (CA) as a share of GDP, net international investment position (NIIP) as a share of GDP, or net service payments as a share of GDP all consider only an individual country’s data. An alternative approach to assessing sustainability defines and examines the issue from the standpoint of a global financial model, considering net capital inflows as compared to the change in global portfolio of wealth (Mann 2002).

Of course, the two concepts of sustainability are linked. From the standpoint of the US economy, sustainability is about how much the US economy can afford to borrow from the rest of the world by running a current account deficit and building up a negative net international investment position which it ultimately must pay back with interest. Sustainability from the standpoint of the rest of the world (which is the global financial model) is about how much those investors are willing to buy and hold US assets in their portfolios, considering issues of risk, return, and diversification.

In either concept, a sustainable situation is one where the stock or flow imbalance generates no economic force *of its own* to change its trajectory. For example, a sustainable current account trajectory is one where the feedback effects from the current account or net international investment position through net service payments to consumption or business investment spending are relatively weak in comparison to other macroeconomic forces that affect these spending categories. A sustainable global portfolio allocation is one where the feedback effects from global wealth allocation to the dollar is relatively weak in comparison to other macroeconomic forces that affect asset prices and portfolio choices.

For near-term analysis, particularly for pressures on a currency, the definition of sustainability based on financial markets, portfolio allocation decisions, and the like makes sense (Mann 2003). However, for examination of longer-term structural change, such as that presumed by the transition to the new economy and to services, the real side measures based on the current account is more appropriate. So, the focus here is on assessing sustainability using the measures of CA/GDP, NIIP/GDP, and net service payments.

Regardless of the model of sustainability, data analysis is necessary to determine analytical benchmarks. The US current account deficit in 2002 was about \$500 billion, larger than any other country's experience, and at 4.9 percent of GDP the highest share ever for the US. For industrial countries, a CA/GDP ratio of somewhere between 4 and 5 percent appears to be associated with the onset of economic forces (including a monetary policy response, a reduction in income and, in some cases, a real depreciation of the currency) that narrow the current account deficit. (Chinn and Prasad 2000, Freund 2000, Mann 1999)

Similarly, econometric analysis finds that a large negative net international investment position is associated with a depreciation of the relevant exchange rate, although the magnitude of net international investment that is associated with the exchange rate change is less clear (Gagnon 1996). But, for many OECD countries NIIP/GDP is 40 to 50 percent without appearing to generate downward pressure on their exchange rates; the figure for the United States in 2002 was about 25 percent. Finally, net financing on the US NIIP remains very small. In fact, although the NIIP has been negative since 1986, the net service only turned from receipt to payment in 2002.

Comparing the US to industrial-country benchmarks, by at least two of the three measures, the US current account was not unsustainable in 2002, even though the deficit was very large. What about going forward?

New Economy, Productivity, and International Tradability of Services

The 'new economy' has come to mean many different things, and indeed the terminology has lost a bit of its luster after the dot.com debacle of 2000. Nevertheless, at the core of most generalized discussions of the new economy is the relationship between investment in and effective use of information technology, and faster productivity growth, which in the United States has continued unabated.

In the context of this paper on the sustainability of the US current account, the relationship between technology, productivity, and services is important for two reasons. First, research shows that effective use of information technology raises productivity and growth. Second, information technology has raised the international tradability of services. The United States is at the forefront both of the productivity and income effects of the new economy and is

the leader in the internationally traded services. The question of interest is, as the rest of the world increasingly takes up the new economy, how will that affect global growth and US trade?

First, what evidence relates information technology, services, and economic growth? Triplett and Bosworth (2002) and van Ark, Inklaar, McGuckin, and Timmer (2003) show that US service producers that use information technology intensively have higher productivity growth than those that do not. Because of the size of the services sector in GDP, higher productivity growth there is a key ingredient to the sustained higher rate of productivity growth in the US. Comparing US and European service producers, van Ark, Inklaar, and McGuckin (2002) show that European services providers have lagged in their uptake of information technology and have therefore had lower productivity growth. Moving beyond services to the overall economy, Peneder, Saniovski, and Dachs (2001) and Peneder (this volume) show that manufacturing competitiveness is enhanced by intensive use of knowledge-based services. Thus, there is a lot of upward potential for growth in Europe from increased intensiveness in the use of information technology, particularly in services.

This research does not just pertain to other industrial countries. Consistent with the stages of development theory, services as a share of GDP rises along with GDP per capita. The services sector in many developing countries has tended to remain less developed, even as countries have pursued export opportunities in manufactured goods. Various rounds of trade liberalization have barely touched services. Research by Brown, Deardorff, and Stern (2001) as well as by Dee and Hanslow (2001) show that GDP gains from increasing the efficiency of services in developing countries through liberalization of trade and investment can be quite large, mostly because better services enhances the competitiveness of manufactured goods and agricultural products. Thus, increased economic development abroad should tend to increase GDP generally as well as disproportionately enhance the prospects of US exporters of services.

Second, how are technology and the international tradability of services related? New-economy (or knowledge-based or IT-enabled) services are taken to mean, broadly, those services beyond the traditional notion of internationally traded services such as transportation, travel, and tourism. Heretofore professional services were usually considered nontraded or required foreign direct investment or physical presence for delivery abroad. For example, architects, engineers, and consultants needed to cross the border to deliver their services. Financial intermediaries needed to set up branches to serve their clients. Lawyers and doctors stayed in their local licensing jurisdiction. Green visors illuminated paperwork in the back-offices of enterprises. Customer assistance meant bagging groceries.

Information technology has radically changed this picture, and US producers are at the forefront of these changes, being both globally competitive (as evidenced by revealed comparative advantage, discussed next) and having already incorporated technology to great affect in their operations (as documented by McKinsey Global Institute and analyzed in Triplett and Bosworth; and van Ark, Inklaar, McGuckin, and Timmer).

What do the US data suggest for the relationship between economic development and US trade in services? (table 1). As expected, comparing the regions by GDP per capita shows that the more industrial region of Europe has a higher fraction of services in GDP. Because the European markets are more open as well as more similar to the US markets, the services share of US trade with Europe is also highest. Further integration of new economy services in Europe will likely cement US trading relationships.

Coming from both a lower level of development and more closed markets, the place of greatest potential for US services trade will be the developing world. Here, both domestic and international markets for services are less well developed, as indicated by the lower shares of services in GDP and the lower shares of services in US exports to the regions (the service sector share of GDP appears relatively high for Latin America in part because the performance of the manufactured sector was poor in 2001).

In sum, deeper integration of new economy services into economies around the world can raise productivity and GDP growth there. In addition, increased intensity in the use of information technology associated with the new economy can lead to more widespread international trade in services. Thus, the pace at which Europe and the developing countries integrate the new economy matters both for their growth as well as for US trade and the current account.

Table 1: US services exports and income
(select economies, 2001)

	Services share of GDP (value added, percent)	Private services/total US exports to region/country (percent)	Income per capita (US\$, 1995)
Europe ¹	69	53	26,579
Asia Pacific ²	44	26	5,446
Latin America ³	60	22	3,821
China	34	27	878

¹ For services share of GDP and income per capita, Europe defined as euro zone. For US services exports, Europe defined as Belgium, France, Germany, Luxembourg, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom.

² Asia Pacific defined as China, Indonesia, South Korea, Malaysia, Philippines, Taiwan, and Thailand. Countries GDP weighted according to 1995 US\$ GDP for aggregate number for services share of GDP and income per capita. Services share of GDP for Thailand 2000 figure, rather than 2001. Service share of GDP for Taiwan by activity, rather than value added.

³ For services share of GDP and income per capita, Latin America defined as per World Bank definition of Latin America and Caribbean. For US services exports, Latin America defined as Argentina, Brazil, Chile, Mexico, and Venezuela.

Sources: World Bank WDI On-line; US Department of Commerce/BEA, U.S. International Trade in Goods and Services: Annual Revision for 2001, exhibit 13; U.S. International Services: Cross-Border Trade and Sales Through Affiliates, Summary data for cross-border trade services by area and country, 1986-2001; National Statistical Agency, Taiwan.

New Economy Services and International Trade Elasticities: The US Example

An empirical assessment of how new economy services might affect sustainability starts with the work-horse model of the empirical trade literature: The income and relative prices model of trade flows (Marquez and Ericsson 1993). As is well known, an empirical regularity emerges from

estimating these equations. The US income elasticity for imports is significantly greater than the foreign income elasticity for US exports (familiarily known as the Houthakker-Magee asymmetry for the authors who first documented this regularity. Mann 1999 documents additional research on the topic). The Houthakker-Magee (H-M) asymmetry has well-known consequences for the sustainability of the current account: If the US economy and the rest of the world grow at the same rate, then the US current account deficit will widen, unless the exchange value of the dollar persistently depreciates (Krugman 1985, Marris 1985, Krugman and Baldwin 1987, Obstfeld and Rogoff 2000).

The question for this section of the paper is whether estimation of and systematic incorporation of services into the income elasticities in the work-horse model will change the asymmetry and its implication for the current account trajectory. First, we estimate the income elasticity of trade in new economy services. Then we use these estimates in combination with estimates by other researchers of other components of US trade to build-up new income elasticities for US exports and imports. The rationale for building-up income elasticities from components of trade, rather than estimate a single elasticity for total exports and imports is that the structural changes that are taking place with trade in new economy services may not be captured by time series estimation over long time periods and using the aggregate trade data.

What do we know about US trade in new economy services? In 2002, US total exports stood at \$1 trillion split roughly 70-30 between goods and services, whereas the US imported a total of \$1.4 trillion of which only \$246 billion was services. But services itself is an amalgam of several different categories. Military transactions, miscellaneous services' transactions by the US government, and royalties and license fees are not likely driven by the economic fundamentals of income and relative prices characteristic of the work-horse model, and will not be modeled here.¹ Other sub-sectors of the overall services category include the traditional internationally traded services (travel, passenger fares, and transportation), which have been modeled using the income and relative price framework (Stern et al). The final category of "other private services" (OPS) is of particular interest for further economic analysis because it is the best match for the concept of new economy services, and also because the category is increasingly important in US trade. Estimating income elasticities for exports and imports of OPS is the focus of this section.

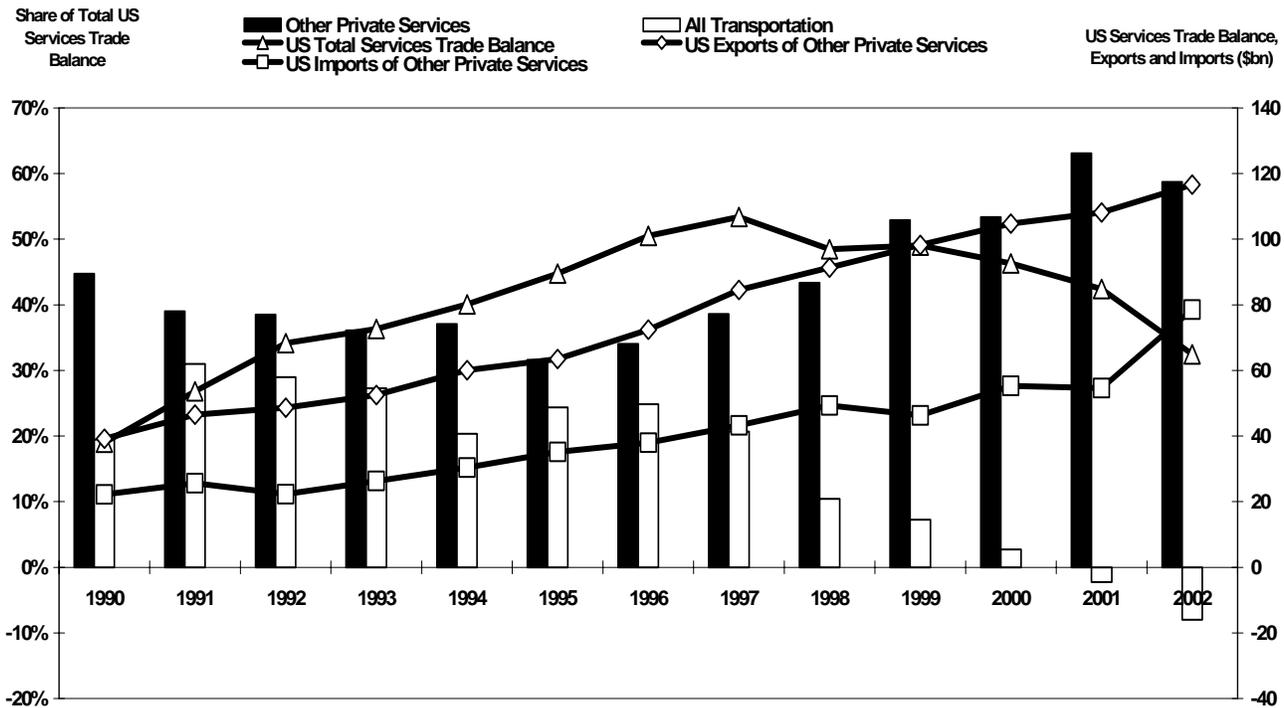
Of total services, OPS accounted for just \$116 billion in exports and \$78.5 billion of imports. But value has tripled since 1990.² Moreover, OPS accounts for an increasing share of

¹ According to the definitions in the Bureau of Economic Analysis, which compiles the data, the US services trade consist of the following seven categories: Military transactions covers non-commercial transactions involving US government military agencies' participation. Travel covers purchases of goods and services by US travelers abroad and by foreign travelers to the US. Passenger fares covers international transactions in fares paid by residents of one country to carriers resident in other countries. Transportation covers US international transactions arising from the transportation of goods by ocean, air, waterway, rail and pipeline carriers to and from the US. Royalties and license fees covers transactions with foreign residents involving intangible assets and proprietary rights. Other Private Services covers transactions with foreign residents in services not specifically covered in sub-categories 1-5. US Government Miscellaneous Services covers transactions of US government non-military agencies with foreign residents

² Data on services in the US international trade accounts began to be collected systematically starting in 1986, with a significant ongoing improvement in data collection methodology in the years since. The majority of the data material is gathered through the BEA's own surveys, but data from other US government agencies, foreign countries, international organizations and private and other entities are also utilized. For additional detail on BEA

the surplus in international trade in services. Figure 1 shows both the increasing importance of OPS to the surplus in US services trade, and that trade in OPS has continued to grow despite cyclical downturns in other categories of internationally traded services. The downturn in exports of transportation, travel, passenger fares (“all transport” in the figure) on account of slower global growth was accentuated by terrorism in 2001 and 2002. But, OPS exports and imports trade has continued to rise throughout the cycle.³ This is consistent with the technological change that is fostering international trade in services, as well as the income-elastic characteristic of these new economy services. Overall, the trade surplus in OPS was \$38 billion in 2002, just a bit lower than in 2001 and accounted for the bulk of the overall trade surplus in services.⁴

Figure 1: US Services Trade Balance Components 1990-2002



Source: Department of Commerce, NIPA table 4.3

services sector data methodology see Survey of Current Business, July 2002,

<http://www.bea.doc.gov/bea/ARTICLES/2002/07July/0702%20ITARevEst.pdf> and earlier annual issues.

³ The rapid \$24 billion increase in import of other private services from 2001 to 2002 comes from increased imports from Western Europe (\$14.4 billion) and Latin America (\$9.2 billion), and does not appear to be the leading edge of the anecdotal flood of outsourced services from India.

⁴ Royalties and license fees are another important positive contributor to the overall services surplus. Of note, the US royalties and license fees surplus emanating from services sector categories represented 46 percent of the total US trade surplus in royalties and license fees in 2001, up from 24 percent in 1990. Correspondingly, the US royalties and license fees surplus emanating from the manufacturing sectors declined from 73 percent of 1990 to 48 percent in 2001. This indicates another reason why OPS, which includes nearly all service sector categories in question, play an increasingly important role in the US economy. Data, see detailed historical estimates of the US Balance of Payments, available at <http://www.bea.doc.gov/bea/di/di1fdibal.htm>

Not only are other private services a persistently positive contributor to the US trade balance, a regional decomposition of the sector reveals that the United States maintains a surplus with all regions of the world. Both observations support the notion of strong US comparative advantage in this sector. As shown in table 2, Europe is the main trading partner in OPS, while some differences in US export markets and origins of imports outside Europe exist. Based on these data, the share of imports of OPS from Latin American and Other Western Hemisphere is higher than the share of OPS exports going to the region, which points to the importance of Latin America as a target market for US OPS export expansion. On the other hand, Rest of the World, which includes non-Japan Asia and South Asia is an important recipient of US exports of OPS, and the trade balance in OPS for this region is an important contributor to the overall OPS trade surplus.

Table 2: Geographic decomposition of US trade in other private services, 2001

Region	US exports		US imports		US trade balance	
	\$US	Percent of total	\$US	Percent of total	\$US	Percent of total
Canada	11,658	11	6,481	12	5,177	9
Europe	41,784	38	20,862	38	20,922	38
Latin America and other Western Hemisphere	19,124	17	15,424	28	3,700	7
Japan	8,837	8	3,732	7	5,105	9
Rest of the world	28,363	26	8,089	15	20,274	37

Source: Department of Commerce, US International Services: Cross-border Trade and Sales through Affiliates 1986-2001⁵

Estimating the income elasticity of OPS trade faces a number of challenges. Because the length of the time series of observations on OPS as an aggregate is limited, we employ a time series panel, pooling across sub-categories within OPS and employing regional variation in dependent variables, and region fixed effects.

The time series dimension is:

- Annual frequency from 1986 to 2001 for exports and imports for the following categories and regions.⁶

The category dimension of the panel is:

- Unaffiliated⁷ other private services, from which the categories *insurance*, *telecommunications*, and *other unaffiliated services* has been subtracted. These three categories experience large fluctuations dictated by events and rules unaffected by the economic variables of income and relative prices or other economic developments.⁸

⁵ Available at <http://www.bea.doc.gov/bea/di/1001serv/intlserv.htm>

⁶ All data from the Department of Commerce/BEA US International Services Cross-border Trade. Available at <http://www.bea.doc.gov/bea/di/1001serv/intlserv.htm>

⁷ BEA reporting of OPS trade data distinguishes between intra-company affiliated trade and arms-length unaffiliated trade. However, due to concerns over undue respondent burden, different surveys are used for each type of transactions. This means that no decomposition of affiliated OPS trade is publicly available, with the exception of special BEA publications, such as the Digital Economy 2002, which included data for affiliated trade in IT services. Moreover, as a result this estimation can only be carried out on unaffiliated trade data. While the data thus represents only a part of total US trade in OPS—in 2001 52 percent of US imports and 34 percent of US exports were affiliated in nature—they will likely be more robust, as variation from intra-company idiosyncrasies in transactions are eliminated.

⁸ Insurance consists, despite being listed under unaffiliated services, of both affiliated and unaffiliated transactions. Receipts in this category are calculated by the BEA as premiums received from foreigners for primary insurance and reinsurance less claims by US insurers. Payments are calculated as premiums paid to foreigners for primary insurance and reinsurance less losses recovered from foreign insurers. Exports (receipts) of other unaffiliated services are mainly film and tape rentals and expenditures of foreign governments and international organizations in

- Unaffiliated business, professional, and technical services (excluding unaffiliated IT services).
- Unaffiliated IT services, which consists of categories *computer and data processing services* and *database and other information services* (columns two and three) from business, professional, and technical services data.

The geographic dimension of the panel consists of five categories constructed to maximize intra-regional variation while minimizing the problem of data suppression:

- Canada
- Japan
- Europe, which where required is defined as Austria, Belgium, Germany, Netherlands, Luxembourg, Spain, Portugal, France, Italy, Greece, Denmark, Norway, Sweden, Finland, UK, Ireland, and Switzerland
- Latin America, which where required is defined as Brazil, Argentina, Mexico, Chile, and Venezuela.
- Rest of the world, which where required is defined as Australia, China, Hong Kong, India, Indonesia, Israel, South Korea, Malaysia, New Zealand, Philippines, Saudi Arabia, Singapore, Taiwan,⁹ and Thailand

All regressions are OLS of the form:

$$Y_i = \beta_{Income_i} + \beta_{RelativePrice_i} + \alpha_1 D_{Canada_i} + \alpha_2 D_{Europe_i} + \alpha_3 D_{LatinAmerica_i} + \alpha_4 D_{Japan_i} + \alpha_5 D_{RestoftheWorld_i} + \mu_i$$

Regressions on Import Data:

i refers to the five regional categories.

$$Y_i = \text{Ln}(\text{category US payments, deflated by the US GDP deflator}),$$

$$\beta_{Income_i} = \text{Ln}(\text{Real US GDP})$$

the US, while imports include mainly expenditures of US residents temporarily working abroad and film and tape rentals. Cross-border trade in telecommunications data are essentially a product of the accounting rate system fashioned by European carriers in the latter half of the nineteenth century. Under this system, telecommunication carriers bilaterally negotiate fees, called accounting rates, for carrying international traffic, measured in calling minutes. Each carrier's portion of the accounting rate is referred to as the settlement rate, which in almost all cases is equal to one-half of the negotiated accounting rate. As bilateral imbalances in international calling traffic occur, the carrier whose outbound calling minutes exceed its inbound calling minutes makes a net settlement payment to its foreign counterpart. The net settlement payment is essentially calculated by multiplying the settlement rate by the number of imbalanced calling minutes. Net settlement payments are recorded as imports in the balance of payments, whereas net settlement receipts are recorded as exports. The US posts a persistent trade deficit in telecommunications, due to the large number of international calls that originate in the US. Definitions cited from SCB October 2002, p. 77 and 85; Recent Trends in US Services Trade, USITC Annual Report 2001, p. 18-1.

⁹ All Taiwan data reconstructed using data from the Central Bank of Taiwan at

<http://www.cbc.gov.tw/EngHome/eeconomic/statistics/Annual.htm> or the Taiwan National Statistical Agency at www.stat.gov.tw/

$$\beta_{Relative\ Price_i} = \text{Ln}(\text{Average annual exchange rates of country}_j \text{ in US\$}^{10} \text{ times the ratio of country}_j \text{ annual CPI}^{11} \text{ and the annual US Services Chain Type Price Index}^{12,13})$$

$$\alpha_i D_{j,i} = \text{Dummy variables for each geographic area in the panel; 1 if panel, 0 otherwise}$$

Regressions on Export Data:
j refers to the trade categories

$$Y_i = \text{Ln}(\text{category US receipts, deflated by the US GDP deflator})$$

For each category *j* a separate foreign income variable is calculated, so that

$$\beta_{Income_{j,i}} = \text{Ln}(\text{Total real GDP of geographic panel, weighted according to the two-year moving average (preceding year + year in question) trade-weight in total US exports of the geographic panel in the particular category } j)$$

$$\beta_{Relative\ Price_{i,j}} = \text{Ln}(\text{((Average annual exchange rate for Country}_j \text{ in \$US}^{14} \text{ times the US Services Export Chain Type Price Index}^{15}) \text{ divided by the annual CPI for country}_j^{16,17})$$

$$\alpha_i D_{i,j} = \text{Dummy variables for each geographic area in the panel; 1 if panel, 0 otherwise}$$

Income elasticities reported in table 3 are statistically significant at a 99 percent level. Unreported relative price elasticities for export regressions are not statistically significant at this level, and only in the case of Other Private Services and Business, Professional and Technical Services do the relative prices have the expected negative sign. Unreported relative price elasticities for import regressions were statistically significant at a 99 percent, absolute value ranging from 0.2 to 0.6, and were negative as expected.

Combining these newly estimated income elasticities with those for travel and transportation estimated by Stern et. al and for goods estimated by Wren-Lewis and Driver, and weighting each component by its share in nominal total exports and imports (year 2000) yields calculated income elasticities for total exports and imports (table 3).

Several observations on the ‘Houthakker-Magee’ asymmetry emerge from the Table. First, the asymmetry is just as pronounced for goods in the Wren-Lewis and Driver estimation over the more recent period (quarterly data 1980-1995) as it was over the H-M period (annual data 1951-1966). Second, for the traditional internationally traded services the asymmetry is

¹⁰ Available from the IMF IFS Database, converted from SDR market rates, indexed to 1995=100.

¹¹ Indexed to 1995=100, available from the World Bank WDI On-line at <http://devdata.worldbank.org/dataonline/>

¹² Indexed to 1995=100, available at <http://www.bea.gov/bea/dn/nipaweb/NIPATableIndex.htm>

¹³ Multiple countries comprising a geographic panel weighted in the panel according to their real (1995) \$US denominated GDP. GDP data available at <http://devdata.worldbank.org/dataonline/>

¹⁴ Available from the IMF IFS Database, converted from SDR market rates, indexed to 1995=100.

¹⁵ Indexed to 1995=100, available at <http://www.bea.gov/bea/dn/nipaweb/NIPATableIndex.htm>

¹⁶ Indexed to 1995=100, available from the World Bank WDI On-line at <http://devdata.worldbank.org/dataonline/>

¹⁷ Multiple countries comprising a geographic panel weighted in the panel according to their real (1995) \$US denominated GDP. GDP data available at <http://devdata.worldbank.org/dataonline/>

reversed, with the export income elasticity exceeding the import income elasticity. Finally, for OPS the two income elasticities are about the same and both above 2.0 (income elastic). Overall, when weighted up, the H-M asymmetry still is present, but it is smaller than in the case of goods trade alone.

Table 3: Constructing income elasticity estimates

	Exports			Imports		
	Trade weight ¹	Estimates	Weighted estimate	Trade weight ¹	Estimates	Weighted estimate
Goods	.74	1.21 ²	1.43	.83	2.10 ²	1.99
Services, in which	.26			.17		
- Travel	.35	2.18 ³		.38	1.22 ³	
- Passenger fares	.09	3.11 ³		.12	2.09 ³	
- Other transportation	.13	1.11 ³		.28	1.06 ³	
- OPS	.44	2.00 ⁴		.23	2.12 ⁴	
Memo: H-M⁵		1.0		1.7		

¹ All weights are calculated as the average weight of the category in US trade from 1976-2000. This time series chosen, as it is the duration of the data used in Stern, Deardorff, Hymans and Xiang. In the case of the internal weights on OPS exports, the end of the period (2000) is used. Significant trending in shares during the period makes the average value for the share over the period significantly bias the calculated weight.

² Wren-Lewis and Driver

³ Stern, Deardorff, Hymans and Xiang

⁴ Author's calculation

⁵ Houthtakker and Magee

New Economy Services and Current Account Sustainability

The discussion in the two preceding sections propose two channels through which new economy services can potentially affect the US current account: First, the estimation suggests that increased trade in new economy services has improved the income-elasticity asymmetry. Second, other research as discussed, indicates that going forward, integration of new economy services in the domestic economies of US trading partners will raise economic growth there. It is likely that integration of new economy services in the rest of the world will take place in conjunction with an increase in international trade in services, so that the two structural changes to income elasticity of trade and to GDP growth would augment each other to impact the trajectory of the US current account. In the context of a simple model of the US current account however, it is useful to examine the sensitivity of the current account trajectory to the two structural changes each by itself.

The simple accounting spreadsheet for the US current account is based on the income and relative prices framework, is outlined in the appendix and is discussed in more detail in Mann 1999. Key differences from formal models designed to project the current account include: Relative price elasticities are assumed to be 1.0 and pass-through of exchange rate changes are assumed to occur without a lag (e.g. there is no J-curve). Because the focus of this exercise is differentials in the structural parameters of the income elasticities and changes in global growth rates, these issues are not germane for observations to be drawn here.

Key inputs are global growth and the income elasticities (table 4). The income elasticities are the H-M in the base case, and the new estimated elasticities in the other cases. The specific values for income growth in the *base case* are drawn from the well-known econometric forecasting firm of Macroeconomic Advisors. The *global new economy* growth scenario comes from estimates detailed in OECD World in 2020. These growth rates are derived from supply-side models of large economies and regions important to global growth and trade. The OECD growth rates used here are the ones generated from a set of structural changes in economies (both OECD and developing countries) that are consistent with deeper integration of new economy services in global economies, including fiscal rectitude, labor market reforms, reductions in trade and transport costs, and moderate oil prices. The OECD analysis also incorporates the general equilibrium changes in international trade that would result if the postulated structural changes in economies and policies take place. These OECD estimates for growth are the most realistic and thoughtful estimates of the potential improvements in global growth from substantial structural reforms that are available. Whereas other assumptions could be made for growth both for the base case and for the global new economy case, the assumptions based on Macroeconomic Advisors and the OECD tie down my growth assumptions to respected model-based analysis.

Figure 2 traces out three main scenarios in order to highlight the importance of structural change in income elasticities vs. in global growth. *Base case*: MacroAdvisors' growth and H-M elasticities; *new economy services trade only*: MacroAdvisors' growth and newly constructed income elasticities that includes new economy services trade; and *global new economy*: OECD estimates of higher growth from the new economy along with the newly estimated income elasticities.

In the *base case* with the H-M elasticities, even though the long-term growth of the US economy is lower than that for the rest of the world, the H-M asymmetry yields the familiar widening of the current account deficit. The magnitude of the CA/GDP ratio gets very large quickly, and sustainability benchmarks based on industrial-country analysis are breached very quickly.

The second scenario, *new economy services trade only*, where base case GDP growth is assumed, but the new elasticities are imposed is almost identical to the first—it is nearly impossible to separate the two lines! What this implies is that the change in income elasticities which account for the dramatic increase in the share of new economy services in US international trade over the last decade, in fact does very little to improve the current account trajectory. Why is this the case?

First, the new estimated elasticities, implemented in the scenario starting in 2003, are operating off a difficult “initial condition.” In 2002, US imports exceed US exports by a factor of about 1.4 to 1. Thus, when the estimated income elasticities with the improved income asymmetry are integrated into the computational analysis, they are operating on a very unbalanced initial condition of trade. Second, the newly estimated income elasticities are higher both for imports and for exports. This tends to accentuate differences in assumptions for income growth relative to the initial elasticity parameters and tends to accentuate the problem of the initial condition.

The third scenario, *global new economy*, assumes the OECD’s higher growth path that comes from structural and policies changes including deeper integration of new economy services into the economies of the US’s trading partners and also incorporates the new estimated income elasticities for trade. The light line shows the intermediate scenario where only the growth assumptions are changed, but the old H-M elasticities are employed. This scenario is implausible, since it is unlikely that growth abroad will increase without an accompanying increase in services production and trade.

The key observation from these scenarios is the important synergies between growth, trade, and services, which is revealed by the fact that the overall improvements to the US current account trajectory from both higher growth through deeper integration of services and the new economy in domestic economies *and* increased income elasticities through increased trade in new economy services trade is greater than the either of these happening in alone. Without the assumed increase in foreign growth, greater international trade in services does virtually nothing to improve the US current account. But, without the increase in new economy services in domestic economies through international trade, higher growth is unlikely to occur. And, the combination of higher growth and services trade is significantly better for the current account trajectory.

In the end, structural increases in growth, both in the United States and abroad, help to slow the widening of the current account. The relatively smaller income asymmetry in conjunction with higher growth abroad slows the widening deficit even further. However, neither higher growth abroad nor the less unfavorable income elasticities are sufficient to put the US current account on a stable trajectory (that is, one that does not continue to widen).¹⁸ This

¹⁸ These results show less improvement to the current account trajectory than those presented in Mann 1999, where no new estimation of elasticities was undertaken. There, only the export income elasticity was changed on the basis of a re-weighting of the goods and services elasticities estimated by Wren-Lewis and Driver.

suggests that the new economy and increased international tradability of services are not enough to put the US current account on a sustainable path, in part because of the initial conditions of trade imbalance as of 2002.

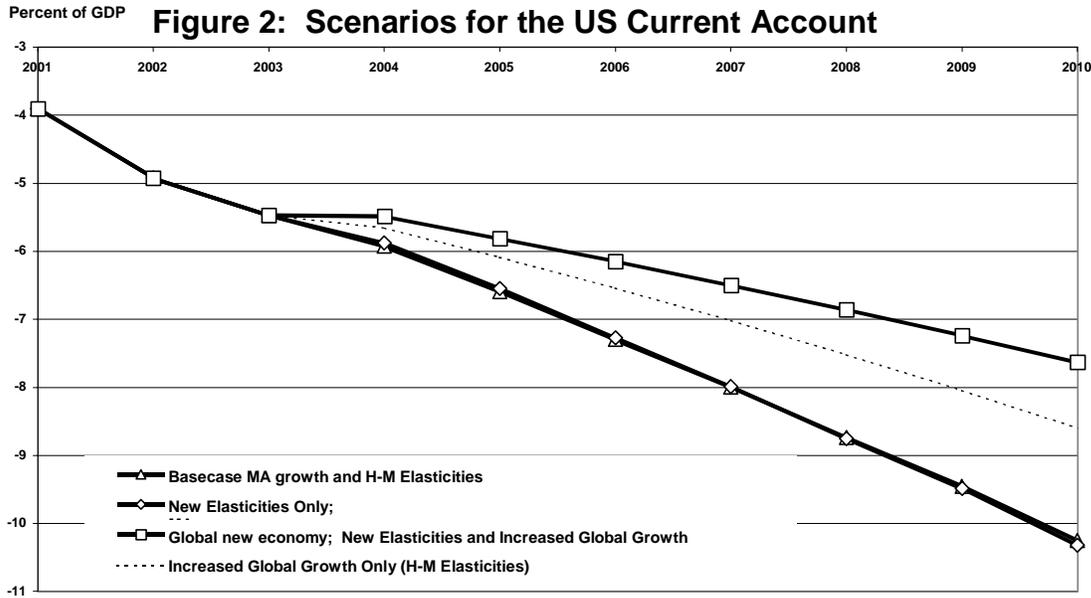


Table 4: Assumptions for US current account deficit scenarios

	Base case							
	2003	2004	2005	2006	2007	2008	2009	2010
US real GDP	2.6	4.1	3.2	2.8	2.6	2.5	2.4	2.7
World real GDP	2.3	3.5	3.3	3.3	3.2	3.1	3.1	3.2

Export income elasticity = 1.0

Import income elasticity = 1.7

Notes:

Growth: Macro Economic Advisors, Long Term Economic Outlook, March 25, 2003. World inflation macro Economic Advisors 35 country CPI index; Elasticities: Houthakker and Magee

Structural increase in growth and new estimated elasticities								
	2003	2004	2005	2006	2007	2008	2009	2010
US real GDP	2.6	4.1	3.5	3.5	3.5	3.5	3.5	3.5
World real GDP	4.7	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Export Income Elasticity = 1.43								
Import Income Elasticity = 1.99								

Notes:
^a 2003, 2004 Macro Economic Advisors, Long Term Economic Outlook, March 25, 2003; 2004-2010 OECD World in 2020, 2004-2010 US inflation from World Bank Global Economic Prospects 2003, 2003-2015 Forecast
^b 2003, 2004 Macro Economic Advisors, April 17, 2003; 2004-2010 OECD World in 2020, world inflation the GDP weighted average of inflation from Japan, G-4 Europe, Non-G-7 industrial countries, other high income and low/middle income economies from World Bank Global Economic Prospects 2003, 2003-2015 Forecast.
Elasticities: Author's calculations

Policy Issues: Services in Europe and in the World Trade Organization

The scenario analysis suggests that structural change inside economies and increased trade in services will not be enough to put the US current account on a sustainable path, and that the change that has already been estimated to have taken place in income elasticities of trade, by itself, does almost nothing to change the trajectory. Since growth is the key, what are some policy approaches to promote deeper integration of services so as to support the increase in global growth so necessary for the US current account trajectory to improve even to some degree?"

With Europe, the United States already has substantial international trade in services, so the key issue for Europe is the relationship between new economy services, productivity, and growth. The European Union's Lisbon strategy aims to make the European economy the most competitive in the world by 2010. Key to this goal must be the 70 percent of the EU economy that is services. However, the European Commission's annual evaluations of the success of the Internal Market in the European Union show that the continued presence (now ten years after launch) of significant barriers to trade in services such as consulting, real estate, engineering, finance, construction, distribution, and transport. Intra-EU trade in services has also been disappointing, reaching only about 5 percent of sector GDP in 2002, as opposed to in the goods sector in which trade reached roughly 30 percent in 2002.¹⁹ As a result, there has been limited price convergence in services between EU countries, and large growth opportunities have been

¹⁹ For detailed data, see 2003 *Statistical Annex for the European Economy*, available at www.europa.eu.int/comm/economy_finance/publications/european_economy/2003/statannex0103_en.pdf

forfeited. For example, Commission research indicates potential gains of up to 1.1 percent of EU GDP from European integration in financial services alone in the ten years until 2012.

In May 2003, the European Commission hence strengthened the emphasis on the services sector in its 2003-06 Internal Market strategy, with proposals for service sector integration based on mutual recognition, legislative harmonization and EU-level codes of conduct. Gains to growth in Europe derived from increased services integration would rebound to benefit the US current account since the higher growth would occur in tandem with the higher income elasticities of trade.

Beyond Europe is the broader agenda of liberalization in the World Trade Organization. Several researchers have focused on the potential gains from on-going negotiations in the WTO for liberalizing international trade in agriculture, manufactured goods, and services. The simulations by Brown, Deardorff, and Stern (corroborated by Dee and Hanslow 2001) suggest an increase in global GDP of \$600 billion for improved market access for all three sectors. But, of that total, \$390 billion would come from opening services markets to international trade! The simulation indicates that the industrial countries (particularly the United States) enjoy the lion's share of these GDP gains, because they start by being the largest countries and largest exporters of services.

But, for many developing countries, percentage increases in GDP that come from improving the performance of the services sector are nearly as large as those obtained through increased exports of agriculture and manufactured goods. Given the generally small size of the domestic service sector in most developing economies, this means that the multiplier effects to raise GDP must be much larger from increased use of services than from increased exports of agriculture or manufactures. In other words, the productivity gains throughout an economy from improved service sector performance are particularly dramatic for developing countries.

Conclusion

New economy services are of increasing importance in international trade, and these services play an important role in raising productivity and growth in economies around the world. Europe has much to gain from further integration of services within the European Union. Developing economies would experience dramatic improvements in their GDP from increased use of services.

Examination of international trade in services for the United States indicates that trade in these services is increasing and that the trade surplus in these services continues to be robust even in the face of slow growth abroad. New estimates of the income elasticity of trade in these services for the US confirm that these services are income elastic. These estimates also suggest that the familiar asymmetry in income elasticity that favors imports over exports is significantly muted for these services in US international trade.

In the context of a model of the US current account deficit, these two factors—higher growth from increased integration of services in the domestic economy and more favorable income elasticities of trade—work to reduce the magnitude of the US current account deficit in scenarios for the trajectory for the US current account. However, plausible estimates for the effect of new economy services on GDP growth abroad and for the effect of increased trade in new economy services on income elasticities of US trade are not sufficient to put the US current account on a sustainable path. In part because of large initial condition of the US current account

deficit in 2002, additional upward adjustments to global growth, a much higher shares of services in US trade, or a depreciation of the exchange value of the dollar are necessary to put the US current account on a sustainable path.

Appendix: Simple framework to assess current account sustainability

$$EX = EX(-1) * (1 + Y_w * E_{ex} / 100 + (NEU - NEU(-1)) / NEU(-1))$$

$$IM = IM(-1) * (1 + Y_{us} * E_{im} / 100 - (NEU - NEU(-1)) / NEU(-1))$$

$$TB = EX - IM$$

$$CA = TB + NIIP(-1) * r$$

$$NIIP = NIIP(-1) + CA = NIIP(-1) + NIIP(-1) * r + TB$$

Where:

EX: Export

IM: Import

TB: Trade balance

CA: Current account

NIIP: Net International Investment Position

r: Nominal interest rate

Y_w: World growth (nominal)

Y_{us}: US growth (nominal)

NEU: Nominal effective exchange rate index

E_{EX}: Export income elasticity

E_{IM}: Import income elasticity

(-1) indicates a lag.

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