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Corporate Taxation and US MNCs: Ensuring a Competitive Economy

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BACKGROUND

The debate about "tax reform," a focus of the 2012 presidential race and the congressional budget battles this year, has centered on closing loopholes, creating new incentives for growth, and of course raising revenue through higher personal taxation of well-off Americans. This emphasis is understandable in light of the need to close the federal deficit and the fact that a majority of federal revenue comes from personal taxes. But the debate overlooks an important priority for future US economic growth: the urgent need to reform the corporate tax. Without reform, US-based multinational corporations (MNCs) will continue to be hobbled by an outmoded tax structure as they compete in the age of globalization. Reform would not only make American MNCs stronger competitors in markets abroad but also enable them to expand and invest more at home. This policy brief proposes that tax rates should be lowered, both on profits earned in the United States and profits earned abroad. These reforms will encourage greater, not less, investment at home, as well as expanded foreign direct investment abroad by American MNCs. This is the best path toward more employment, investment, exports and R&D in the United States. Yes, this proposal might seem counterintuitive to some. Indeed the Obama administration has suggested that taxes should be used to *discourage* outward FDI by American MNCs, on the ground that such investment hinders US prosperity. We present evidence that the administration's concern is the wrong starting point for launching corporate tax reforms. This policy brief first summarizes research that shows a complementary relationship between outward foreign direct investment by US MNCs and positive effects in the US economy, and then proceeds to suggest constructive corporate tax reforms. The policy brief argues that fears of lost revenues from lowering taxes on corporate profits earned at home and abroad are exaggerated, and that MNCs which engage in FDI are in the best position to create jobs and promote prosperity at home.

COMPLEMENTARITIES ARE THE KEY

The central message from our new research, and the prior research of others, is simple and powerful: Outward FDI is not a *substitute*, but rather a *complement* to good things in the US economy. Better jobs, higher investment, larger exports, and more research and development (R&D) at home go hand in hand with greater outward FDI. Unfortunately, and contrary to these research findings, much of the recent debate over corporate tax policy reflects a zero-sum view of MNC activity.[1] According to this view, more investment abroad means less

1. A leading proponent of the zero-sum view, especially when unemployment is high, is Clausing (2012a, 2012b). See the response and rejoinder by Hufbauer (2012a, 2012b).

Table 1 Statutory, average, and marginal effective corporate tax rates for systemically important countries
(in percent)

Countries	Statutory corporate tax rates, 2010[a]	Average effective corporate tax rates[q]		Marginal effective corporate tax rates, 2010[b]	
	OECD Tax Database (2011)	World Bank (2009)	Hassett and Mathur (2011, 2010)	Chen and Mintz (2011)	Hassett and Mathur (2011)
Australia[c]	30.0	25.9	22.2	26.0	17.0
Brazil[d]	34.0	21.4	n.a.	35.1	n.a.
Canada	29.5	9.8	25.5	20.5	23.4
China, P.R.[e]	25.0	6.0	n.a.	16.6	n.a.
France[f]	34.4	8.2	27.5	34.0	23.8
Germany[g]	30.2	22.9	24.2	23.8	20.7
India[h]	34.0	24.0	n.a.	33.6	n.a.
Italy[i]	27.5	22.8	24.3	26.9	22.6
Japan	39.5	27.9	33.0	29.5	30.5
Korea, Republic of	24.2	15.3	18.1	29.5	13.6
Mexico	30.0	23.1	28.4	17.5	27.7
Netherlands[j]	25.5	20.9	19.4	16.8	15.1
Poland[k]	19.0	17.7	16.2	14.3	14.1
Russian Federation[l]	20.0	9.0	n.a.	31.9	n.a.
South Africa[m]	34.6	24.3	n.a.	14.5	n.a.
Spain	30.0	20.9	27.5	25.4	26.3
Sweden	26.3	16.4	18.5	18.9	12.6
Switzerland[n]	21.2	8.9	15.4	17.6	10.9
Turkey	20.0	17.0	13.1	5.6	7.3
United Kingdom[o]	28.0	23.2	22.3	27.9	18.8
United States[p]	39.2	27.6	29.0	34.6	23.6
Unweighted average, excluding United States[r]	28.1	18.3	21.0	23.3	20.8

(continued on next page)

investment in the United States. More jobs abroad mean fewer jobs at home, a view precisely opposite of what the data show.

Building on a zero-sum view, some observers call for tightening US tax rules on the foreign earnings of US MNCs, even to the extent of taxing all foreign earnings currently at the US statutory rate.[2] This "reform" is supposed to prompt MNCs to ramp up US investment and create more jobs at home. Our analysis suggests that the prescription is exactly wrong. Congress has so far declined to enact proposed "reforms" of this nature, so we cannot be absolutely certain that imposing higher US taxes on the foreign earnings of US MNCs would diminish their appetite for investment abroad or curtail their R&D, investment, and employment at home. But strong complementarities between outward FDI and jobs, investment, and R&D in the US economy suggest that such "reforms" would undermine US prosperity.

EXCESSIVE CORPORATE TAXATION

The backdrop of the debate over MNC taxation is a US corporate tax rate that has gotten completely out of line with world practice. During the 1990s, the US corporate tax position steadily worsened among its Organization for Economic Cooperation and Development (OECD) competi-

2. This would amount to repealing the long-standing practice of taxing the earnings of foreign subsidiaries of US MNCs only when the earnings are repatriated as dividends to the US parent corporation. This long-standing practice is commonly known as "deferral."

Table 1 Statutory, average, and marginal effective corporate tax rates for systemically important countries (in percent) *(continued)*

n.a. means that the data is not available.

a. The statutory corporate tax rates for OECD countries (all countries except Brazil, China, India, Russia, and South Africa) show the combined central and subcentral corporate income tax rates. The subcentral coverage of statutory corporate tax rates for non-OECD countries is not necessarily consistent.
b. The marginal effective corporate tax rate measures the tax liability incurred on an additional dollar of investment and informs scaling choices, conditional on the location. The Chen and Mintz (2011) marginal effective rates do not include the effects of the 100 percent temporary capital expensing or "bonus depreciation" rules recently passed by Congress in December 2010 in the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010. This rule increased the current 50 percent bonus depreciation in the tax code's section 168(k) to 100 percent for qualified property placed in service before December 2011. Chen and Mintz calculated that this provision reduces the US effective tax rate to as low as 17.5 percent, but only for a single year; it does not provide certainty for firms in their capital planning decisions, and it may simply accelerate investment outlays. For these reasons, Chen and Mintz (2011) excluded bonus depreciation effects in their marginal effective tax rate calculation. Hassett and Mathur (2011) calculated their marginal effective tax rates based on the approach outlined by Devereux and Griffith (1999).
c. Australia has a non-calendar tax year. Its statutory rates are in effect as of July 1.
d. The Brazilian statutory corporate income tax rate is 25 percent. In addition, social contribution on net profits at a rate of 9 percent are levied, leading to an overall rate of 34 percent. The 25 percent corporate income tax rate includes a 15 percent basic rate on net profits with tax adjustments and an additional income tax of 10 percent on the net profit which excess BRL240,000 per year.
e. For statutory rates, from January 2008, foreign and domestic entities are subject to a single enterprise corporate income tax at a rate of 25 percent. However, the rate for a low profit enterprise is 20 percent, and for a hi-tech enterprises the rate is 15 percent if certain conditions are met.
f. The French statutory rate includes a surcharge, but does not include the local business tax (*Taxe professionnelle*) or the turnover based solidarity tax (*Contribution de Solidarite*).
g. The German statutory rate includes the regional trade tax (*Gewerbesteuer*) and the surcharge.
h. For statutory rates, domestic companies are generally taxed at the rate of 30 percent; however profits from life insurance business in India are taxed at a rate of 12.5 percent. Foreign companies are taxed at a rate of 40 percent. A Minimum Alternate Tax (MAT) is levied at 15 percent of the adjusted profits of companies where the tax payable is less than 15 percent of their book profits. Dividend distribution tax (DDT) is levied at 15 percent on dividends distributed by a domestic company. Surcharge and education cess is applicable on the above taxes. A 10 percent surcharge in case of domestic companies and a 2.5 percent surcharge in case of foreign companies is applicable if total income is in excess of INR10 million. Education cess of 3 percent is applicable on income tax plus surcharge, if any. Wealth tax is imposed at a rate of 1 percent on the value of specified assets held by the taxpayer in excess of the basic exemption of INR3 million. Securities transaction tax (STT) is levied on the value of taxable securities transactions in equity shares and units of equity oriented funds.
i. The Italian statutory rates do not include the regional business tax (*Imposta Regionale sulle Attività Produttive*; IRAP).
j. The Dutch statutory corporate tax rate applies to taxable income over EUR200,000.
k. There is no Polish subcentral government statutory tax. However, local authorities (at each level) participate in tax revenue at a specified percentage for each level of local authority.
l. The statutory corporate income tax is split into the federal tax (2 percent) and the regional tax (18 percent, which can be reduced to 13.5 percent for some categories of taxpayers). Dividends distributed can be subject to a 9 percent or 0 percent withholding tax. Interest income on state securities can be subject to a 15 percent or 0 percent withholding tax percent.
m. The statutory corporate income tax rate is 28 percent. However, South Africa imposes an additional secondary tax on companies (STC) at 10 percent on any net dividends declared by them. Therefore, if a company distributes 100 percent of its after-tax earnings as a dividend, an effective tax rate of 34.55 percent will apply. This does not apply to gold mining companies (which are taxed on a formula basis) or to South African branches of foreign entities which are taxed at a rate of 33 percent. The STC may be replaced by a withholding tax in the future.
n. In Switzerland, church taxes cannot be avoided by enterprises. They are included in the statutory rates.
o. The United Kingdom has a non-calendar tax year. Its statutory rates are in effect as of April 1.
p. The US subcentral statutory corporate rate is a weighted average of state corporate marginal income tax rates. The US effective corporate rate excludes bonus depreciation.
q. The average effective corporate income rate measures the average rate a firm might expect to face on an investment project over the possible range of profitability outcomes. Hassett and Mathur (2011) calculated their average effective tax rates based on the approach outlined by Devereux and Griffith (1999).
r. Hassett and Mathur (2011) do not have the data for some countries in the table. Hence, the unweighted average calculated from their numbers supplements the missing cells with data from either Chen and Mintz (2011) or the World Bank (2011) to enable a guesstimate.

Source: Corporate tax rates for OECD countries are from OECD Tax Database (2011); corporate tax rates for non-OECD countries are from KPMG's Corporate and Indirect Tax Rate Survey (2010); marginal effective corporate tax rates are from Chen and Mintz (2011); average effective corporate income taxes are from *Paying Taxes 2011: The Global Picture*, World Bank and PricewaterhouseCoopers (2011); marginal and average effective corporate income taxes are from Hassett and Mathur (2011); and authors' calculations.

tors. In 1985, the United States ranked ninth highest among 19 countries (meaning US rates were higher than eight other OECD countries and lower than 10 others). By 1995, despite the Reagan reforms of 1986, the United States ranked 12th, because other countries cut their corporate rates more. By 2003, the United States ranked 17th (Hufbauer and Grieco 2005). By 2012, Japan and Germany had cut their statutory corporate tax rates, leaving the United States as the highest corporate tax country within the OECD, and thereby earning the lowest ranking. Meanwhile, the 2000s saw the ascent of the BRICS (Brazil, Russian, India, China, South Africa) as industrial powerhouses, sometimes spurred by special concessions leading to very low effective corporate tax rates.

The US statutory corporate tax rate (federal and state combined) is now 39 percent. This is 11 percentage points higher than the unweighted average of competing countries. However, it is not just the statutory tax rate that makes the United States unfriendly to business. The US average effective tax rate (again federal and state) and the US marginal effective corporate tax rate are also among highest worldwide. As shown in table 1, the US average effective tax rate is 8 to 9 percentage points higher than the unweighted average of

competing countries, and the US marginal effective tax rate is 3 to 11 percentage points higher.

The fact that the US Treasury does not collect a particularly large share of revenue from corporate taxation (typically under 3 percent of GDP) reflects the reality that around half of US business activity is conducted by "pass-through" entities that do not pay corporate tax (partnerships, limited liability companies, Subchapter S corporations, etc.).[3] On the other hand, large firms, including US MNCs, are fully subject to high US corporate tax rates, however measured.

For decades, the safe haven character of the US dollar has attracted a seemingly unlimited inflow of capital from foreign central banks and private investors, which in turn has long kept the dollar overvalued relative to other key currencies.

As we discuss in a moment, research by Grubert (2012) strongly indicates that US MNCs are able to lower the rate of return on domestic sales and raise the rate of return on foreign sales by creative transfer pricing between related affiliates. By shifting reported profits to jurisdictions that impose lower corporate tax rates, Grubert's research indicates that MNCs reduce their US tax payments. Contrary to other scholars, however, we regard this phenomenon as a useful escape valve from the burdensome US corporate tax system.

The United States still insists on the formal structure of worldwide taxation, meaning that US MNCs are theoretically subject to US taxation, at the high statutory rate, on the worldwide income of all their foreign affiliates. In practice, flexible features of the complex international tax law allow MNCs to pay lower rates (in line with their foreign competitors). Most important, US parent companies of MNC groups can defer the repatriation of earnings from their subsidiaries abroad and thereby delay—perhaps permanently—the payment of high US corporate taxes. However, the formal structure of worldwide taxation is often used as the springboard for proposed "reforms" that would sharply increase the tax burden on foreign earnings. By contrast, most other countries practice territorial taxation, meaning that the active business income of foreign affiliates pays a sharply reduced (or zero) rate of taxation to the home country.

In the words of the Simpson-Bowles Commission (The White House 2010):

> The corporate income tax, meanwhile, hurts America's ability to compete. On the one hand, statutory rates in the U.S. are significantly higher than the average for industrialized countries (even as revenue collection is low), and our method of taxing foreign income is outside the norm. The U.S. is one of the only industrialized countries with a hybrid system of taxing active foreign-source income. The current system puts U.S. corporations at a competitive disadvantage against their foreign competitors. A territorial tax system should be adopted to help put the U.S. system in line with other countries, leveling the playing field.

Two decades ago, when Hufbauer and van Rooij (1992) first advocated a territorial tax system for the United States, theirs were lonely voices. Under a territorial system, profits earned by foreign subsidiaries abroad are not taxed at all by the home country, or are taxed at a reduced rate (e.g., 10 percent). Today a majority of knowledgeable commentators, like the Simpson-Bowles Commission, favor some form of territorial tax system. To be sure, not everyone agrees. In his first campaign for the presidency, Senator Obama declared: "When I am President, I will end the tax giveaways to companies that ship our jobs overseas, and I will put the money in the pockets of working Americans, and seniors, and homeowners who deserve a break."[4] Consistently since that campaign, the Obama Administration has advocated higher taxation of foreign income so that MNCs don't use tax breaks "to ship jobs overseas."[5] On balance, however, other arguments have drawn informed opinion to territorial systems. These arguments emphasize competitive neutrality in world markets as between US MNCs and MNCs based elsewhere, and the importance of preserving the US role as a headquarters location for MNCs.

In years past, defenders of high corporate tax rates appealed to flexible exchange rates as the answer to international competition. According to this story, offsetting movements in exchange rates will wash away business tax differences, leaving "fundamental forces" to determine national investment, production and exports. But for decades, the safe haven character of the

3. See Auerbach (2006) for a detailed examination of the forces, including the rise of pass-through entities, that explain the modest share of GDP collected in corporate taxes.

4. Remarks of Senator Barack Obama, "A Change We Can Believe In," Spartanburg, SC, November 3, 2007, www.barackobama.com (accessed on February 15, 2011).

5. For the extensive record of Obama's views on the taxation of MNCs, see Hufbauer and Vieiro (2011) and Hufbauer and Wong (2011).

US dollar has attracted a seemingly unlimited inflow of capital from foreign central banks and private investors, which in turn has long kept the dollar overvalued relative to other key currencies. Meanwhile corporate decisions are cumulative in fostering human skills and innovation, and preparing the ground for future investments. Such decisions shape "fundamental forces"—in other words, the competitive structure of the US economy is path-determined by prior corporate investment, research, and on-the-job worker training patterns. Long before dollar depreciation will convincingly offset high corporate tax rates, mobile MNCs may choose to invest elsewhere—and permanently disadvantage the United States.

Underlying this danger, a large and expanding share of production is mobile, thanks to the internet, rapid transportation, and the growing importance of high-tech goods and services, with elevated value-to-weight ratios. Based on J. Bradford Jensen's (2011) calculations explained in box 1, we estimate that 66 percent of US manufactured goods and 72 percent of US services are mobile. Together, these amount to 69 percent of the private US economy. Additionally, we estimate that nearly half (46.5 percent) of US private sector jobs are tradable. Meanwhile, since the 1970s, numerous countries have entered the "comfort zone" of market capitalism, where "other things" are much more equal than they were four decades ago. Today, countries such as Malaysia, the UAE, Thailand, Indonesia, Chile, and Panama—not to mention China and India—offer production conditions within sight of (and sometimes better than) Europe, North America, Japan, and Oceania (see table 2).

WHAT ABOUT REVENUE?

At a time when future deficits are at the top of the policy agenda, it may seem odd to cut corporate taxes and sacrifice tax revenue—no matter what the long-term payoff in US jobs and living standards. Estimates published by the Joint Committee on Taxation and used by the Congressional Budget Office (CBO) customarily project that cutting the corporate tax rate would reduce corporate tax receipts if nothing else changed (i.e., the static view).[6] In real life, other magnitudes do change when tax rates are lowered or raised. Static "no other change" estimates ignore the logic behind cutting the corporate tax rate in the first place: a positive boost to US business activity.

In light of the static bias in official estimates, it is worth reporting research that supports a dynamic view: namely, that cutting the corporate tax rate would reduce revenue much less than supposed by static estimates. For example, the Institute for Research on the Economics of Taxation (IRET) constructed a model of the US economy to examine a variety of tax policy reforms. Using this model, IRET ran simulations to estimate the potential economic impact of a 10 percentage point cut in the corporate tax rate.[7] Cutting the corporate tax rate would prompt a jump of 6.3 percent in the private business capital stock, raise the average wage rate by 1.9 percent, and boost GDP by over 2 percent. Federal receipts from corporate taxation would drop by $52 billion. On net, however, federal receipts would rise by $19 billion, or 0.8 percent, due to offsetting rises in individual income taxes, Social Security taxes, and Medicare taxes (see table 2 for results from the model).

Table 3 reports a panel regression of corporate tax revenue expressed as a percent of GDP in OECD countries. In this exercise, tax revenues are regressed against the corporate statutory tax rate (federal, state, and local combined), controlling for country fixed effects. The very small, though statistically significant, coefficient—a negative value of 0.04—indicates that a 1 percentage point increase in the corporate tax rate may slightly decrease corporate tax revenue expressed as a percentage of GDP. In other words, there is a very small but negative connection between tax revenue and statutory tax rates within the range of rates implemented by OECD countries over the past quarter century—a range that covers statutory rates between roughly 20 and 40 percent.

Another empirical study (Mertens and O'Ravn 2011) supports the claim that cutting the corporate tax rate would not reduce revenues, indicating that the current corporate tax rate is positioned on the right-hand side of the Laffer curve.[8] Using US data from 1950 to 2006, Mertens and O'Ravn find the "increase in the tax base is sufficiently large that the corporate income tax cut leads to a small decline in corporate tax revenues only after the first quarter and a surplus thereafter." They conclude that "cuts in corporate income taxes are approximately self-financing." They further find that "a one percentage point cut in the [average effective corporate tax

6. In the same static spirit, the Committee for a Responsible Federal Budget estimates that cutting the corporate tax rate to 25 percent would add $1 trillion to the federal debt through 2021. See page 4 of *Reforming the Corporate Tax Code*. Available at: http://crfb.org/sites/default/files/Reforming_the_Corporate_Tax_Code.pdf.

7. These estimates are pegged off the CBO's 2008 baseline projections and assume a continuation of 100 percent bonus depreciation.

8. Arthur Laffer famously claimed that, after a certain level, high tax rates diminish tax revenue owning to evasion, avoidance, and a decrease in economic activity. See, for example, Laffer (2004). Research by Mertens and O'Ravn (2011) did *not* support a Laffer curve effect for personal income taxes, but it did support the effect for US corporate taxes given the rates in effect over the period 1950 to 2006.

Box 1 Mobility of US private economic activity

Not long ago, virtually any banking service required a visit to the local bank. Now, telebanking and websites allow banking customers to conduct many of these transactions from any location. In other words, banking has become much more mobile. Technology is continually increasing the range of goods and services that are mobile, in the sense that sellers and buyers can do business at a distance. International trade data provides a barometer of which goods and services are currently mobile; however, trade figures understate the true degree of mobility that would exist if we lived in a "frictionless" world (meaning no tariffs or nontariff barriers, and no border obstacles). Moreover, data on services trade is notoriously poor. To address these measurement problems, Jensen (2011) pioneered an ingenious method for estimating the extent to which US services are mobile. Applying Jensen's approach, we estimate that 66 percent of US production of goods is mobile and 72 percent of US production of all services is mobile. Taken together, we conclude that 69 percent of private GDP is mobile (see table A.1 in the appendix). Additionally, we conclude that 46 percent of private sector employment is mobile (see table A.2 in the appendix). Below we outline Jensen's method as well as our extension.

The Original Jensen-Kletzer Approach

Jensen and Kletzer (2005) developed an empirical approach to identify tradable services activity, described as "tradability." Later, Jensen (2011) applied the approach to a wide range of service industries and occupations. We equate "tradability" with "mobility." The concept of tradability is based on the mismatch between the location of production and the location of consumption within the United States. For example, there is a close correspondence between the geographic location of population and the number of barber shops and beauty salons. These services are difficult to deliver at a distance—they are classic nontradable services. In contrast, there are significant concentrations of software production in the Seattle metropolitan area and in Silicon Valley. Most of the software produced in these regions is not consumed locally; instead, most is sold to users in other regions.

When production is concentrated at a distance from consumption, Jensen infers that the output of services production is traded within the United States. Using tradability within the United States as an indicator of international trade potential, we can identify at a detailed level which service activities "ought" to be traded internationally.

Jensen finds that many service activities—movie and music recording production, software production, research and development services, and engineering services, to cite a few examples—appear to be "traded" (that is, transacted across distances) within the United States and thus are potentially tradable across international borders.

Applying his methodology, Jenson calculates a locational Gini coefficient for each North American Industry Classification System (NAICS) code. The coefficient measures the degree of dispersion between production and consumption across the United States. A locational Gini coefficient of 1.0 would indicate that production of that good or service is concentrated in a single location while consumption totally "traded" across the United States. A locational Gini coefficient of 0.0 would indicate that the good or service is entirely produced in the same geographic location where it is consumed.

Jensen considers that activity is 'tradable' when its locational Gini coefficient exceeds 0.1, based a qualitative assessment of industry activity. For example, this threshold characterizes retail trade services (such as groceries, clothing stores, etc.) as nontradable. It classifies transportation services as tradable. We adopt Jensen's threshold for our analysis.

Extension of the Jensen-Kletzer Approach

While Jensen limited his focus to services, he calculated locational Gini coefficients for all NAICS codes, covering both goods and services. For our purposes, we gathered data on US GDP and employment for each two-digit NAICS code. Since Jensen's locational Gini coefficients refer to the disaggregated four-digit level, we calculated the average locational Gini coefficient for each two-digit NAICS code by weighting the four-digit coefficients by employment in each four-digit sector. These averages are reported in table A.1 and A.2. By this measure, government services score as "'tradable," but for international commerce that designation conflicts with political feasibility. Hence our estimates are limited to "private GDP," excluding government spending. Similarly, public sector employment is excluded from the estimate as well. We then calculate the share of private GDP and employment which is tradable or mobile. The results make intuitive sense! Construction and utilities, for example, are not mobile, but information technology and management service are.

Table 2 Top ranked non-OECD member countries WEF's *The Global Competitiveness* Index 2011–12

Country	Rank	Score
Hong Kong	11	4.58
Taiwan	13	5.26
Qatar	14	5.24
Saudi Arabia	17	5.17
Malaysia	21	5.08
China	26	4.9
UAE	27	4.43
Brunei Darussalam	28	4.78
Oman	32	4.64
Kuwait	34	4.62
Bahrain	37	4.54
Thailand	39	4.52
Tunisia	40	4.47
Barbados	42	4.44
Lithuania	44	4.41
Indonesia	46	4.38
Cyprus	47	4.36
Panama	49	4.35
South Africa	50	4.34

OECD = Organization for Economic Cooperation and Development

Source: World Economic Forum's *The Global Competitiveness Report* 2011–2012. Avaliable at: http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf.

rate] raises real GDP per capita on impact by 0.5 percent and by 0.7 percent after five quarters."

Judging from their revenue estimates, neither the CBO nor the Office of Management and Budget (OMB) subscribes to the research just cited. But others do. So here's a suggestion: Enact a corporate rate cut of 10 percentage points, phased in at 2 percentage points a year, starting in 2013. If the revenue yield predicted by dynamic scoring (adjusted for the business cycle) fails to materialize, then postpone the next phase in the rate cut. To complement the rate cut, close a few genuine loopholes, and take measures to arrest and even rollback the migration of large firms from the corporate tax system.

Whatever changes are made to the corporate tax system, it seems unlikely that corporate tax revenue will play a significant role in addressing the revenue side of a future compromise to the problem of excessive public deficits and debt. Higher corporate rates will not raise much money because many corporations will transform themselves into pass-through entities and find other means of avoidance. Lower corporate tax rates will not lose much revenue, but neither will the dynamic effects be strong enough to raise much revenue. For significant new revenue, the United States should look to sources that are less distortive than corporate taxation. We recommend following the path of all other advanced countries by enacting a federal consumption tax.[9]

GRUBERT'S CHALLENGE

Later, we survey econometric findings that document the importance of corporate taxation as a factor affecting the location of production. But we start by reprising a recent econometric study that challenges conventional wisdom. Based on corporate tax return data for 754 large nonfinancial corporations (MNCs) for the years 1996 to 2004, Harry Grubert (2012) reached two noteworthy findings. The first is that corporate tax differentials between the United States and foreign countries make little difference to the shares of production that take place at home or abroad, measured by the geographic origin of sales. Since Grubert did not have investment data, the production origin of sales stands as a proxy for the location of investment. Grubert's second noteworthy finding is that the location of pre-tax profit margins on sales responds sharply to tax differentials. Thus the relative pre-tax profit margin on sales originating in the United States (a high-tax location) is much lower than the pre-tax profit margin on sales originating abroad (low-tax on average).

The starting point for Grubert's investigation was the expanding share of aggregate pre-tax worldwide income earned abroad by these 754 MNCs—rising from 37.1 percent in 1996 to 51.1 percent in 2004, a 14 percentage point shift in the share of worldwide income. [10]

Grubert finds that the declining percentage of worldwide income reported in the United States largely reflects a decline in the profit margin earned on US sales and a corresponding rise in the profit margin on foreign sales—not, he stresses, a change in the national location of production.[11]

Among US tax law features that facilitate the decline of reported profits on US sales, Grubert highlights two: the difficulty of ascertaining market prices for intellectual property transferred from parent MNCs to their foreign subsidiaries; and the "check the box" feature that enables parent MNCs to

9. For more details on what this type of tax would look like and why we consider it to be the best option, please see Hufbauer and Vieiro (2012a).

10. In Grubert's calculation, domestic income earned by the MNCs was defined to exclude dividends received from foreign subsidiaries but to include interest and royalties received from foreign affiliates.

11. For the purpose of defining production origin, US exports are included in US sales while US imports are included in foreign sales. The core statistical analysis was carried out for 415 MNCs that had positive profits both in 1996 and 2004.

Table 3 IRET model: 10 percentage point cut in corporate tax rate

Items	2008 level (billions of dollars)		Change between baseline and simulation	
	Baseline	Simulations	Billions of dollars	Percent
Gross domestic product	14,441	14,767	326	2.3
Private business output	10,728	10,979	251	2.3
Private business capital stock	27,608	29,357	1,749	6.3
Wage rate (dollars per hour)	33	34	1	1.9
Private business hours of work (billion hours)	192	193	1	0.4
Federal tax receipts, of which:	2,503	2,522	19	0.8
Federal personal income taxes	1,102	1146	43	3.9
Federal corporate profits tax (accruals)	181	129	–52	–28.7
Federal Social Security and Medicare receipts	974	997	22	2.3
State and local tax receipts, of which:	2,036	2,085	48	2.4
State and local personal income taxes	302	314	11	3.8
State and local corporate profits tax (accruals)	51	51	–0	–0.1

IRET = Institute for Research on the Economics of Taxation

Note: The baseline and simulation scenarios both assume continuation of the expensing rule in place since 2008 (50 percent bonus expensing).

Source: Institute for Research on the Economics of Taxation (IRET), 2010.

characterize a foreign subsidiary as a branch for US tax law purposes even though foreign tax authorities characterize the same subsidiary as a separate corporate entity.

In 1996, the average foreign effective tax rate for Grubert's corporate sample was 21.3 percent.[12] This is the rate on foreign earnings and profits (E&P), a corporate income concept approximating US taxable income. The effective US rate on repatriated earnings was the US statutory corporate rate, namely 35 percent.[13] In 2004, the average foreign effective rate had declined to 15.9 percent, while the effective US rate on repatriated earnings was still 35 percent. In other words, the differential between the US tax on repatriated earnings and the foreign tax on earnings not repatriated widened from 13.7 percentage points to 19.1 percentage points.

Grubert's statistical analysis indicates that a 10 percentage point increase in the differential between US and foreign tax rates prompts a 9.0 percentage point rise in the average foreign profit margin on sales, and a 7.5 percentage point fall in the average US profit margin. This finding leads him to argue that the initial 1996 tax differential (13.7 percentage points) plus the widening between 1996 and 2004 (another 5.4 percentage points), were together responsible for 12 percentage points of the 14 percentage shift in worldwide corporate income from domestic sources to foreign sources. Most of the shifting occurred because the US tax law is flexible as to the location (domestic or foreign "source") of income arising from intangible property—trade secrets, trade names, patents, and copyrights. Given this flexibility, MNCs take steps to ensure that intangible property income is largely earned in low tax jurisdictions abroad.

According to JP Morgan (2012), the stock of earnings held by affiliates abroad rose from $1.4 trillion in 2010 to $1.7 trillion in 2012, a gain of about $150 billion per year. Grubert's calculations indicate a 19 percentage point differential between the average foreign tax rate on affiliate earnings (around 16 percent) and the US statutory rate (35 percent). Hence a purely static revenue calculation—a calculation that assumes nothing changes in the real world when firms are subjected to higher taxes—indicates that applying the US statutory rate to un-repatriated foreign earnings would bring $29 billion annually to the US Treasury.[14] Such calculations

12. The average effective foreign tax rate for each MNC is calculated by combining taxes paid and income earned in all the foreign countries where the MNC does business.

13. As a general rule, foreign source income is taxed at the US statutory rate, less the applicable foreign tax credit. Since the foreign tax credit corresponds to foreign taxes paid, the combined effective US-plus-foreign tax rate is 35 percent on foreign income when remitted to the United States. However, remitted foreign income usually brings with it a foreign tax credit above 30 percent, so the additional tax paid to the US Treasury is ordinarily less than 5 percent.

14. Some static calculations reach even more extravagant results, on the assumption that applying the US statutory rate worldwide would eliminate income shifting, and thus avoid foreign taxation (and the foreign tax credit) on a very large chunk of corporate earnings. Clausing (2009), for example, asserts

assume that US production and sales would chug right along as if nothing had happened. MNCs, whether headquartered in the United States or abroad, would continue to view the United States as a fine investment and production location, despite the gap of 19 percentage points in US and foreign effective tax rates.

REALITY CHECK

Few observers believe that the United States could impose corporate taxes at an effective rate 19 percentage points higher than the average of its foreign competitors without adversely impacting investment, production, and employment decisions. The high and rising mobility of economic activity (box 1) argues otherwise.

What does the econometric evidence say about taxes and investment? Fortunately for our purposes, Mooij and Ederveen (2008) surveyed and distilled a vast body of econometric analysis. To do this, they created a "meta sample" of 427 observations. Each observation is an independent study which estimated the impact of corporate taxation—measured in different ways (statutory tax rates, effective marginal tax rates, approximate average tax rate, etc.)—on investment decisions and the tax base.

Combining these studies allowed the authors to formulate a "consensus estimate" of –3.1 for the semi-tax elasticity of the tax base. [15] The semi-tax elasticity measures the percent change in the corporate tax base for each 1 percentage point change in the tax rate. The consensus estimate says that a 1 percentage point increase in the tax rate results in a 3.1 percent decline in the tax base. The authors break this impact into five "decision margins" (channels that managers use in making decisions): organization form; financial policy; profit-shifting; investment-intensive; investment-extensive.[16] The respective semi-elasticities are: –0.70, –0.15, –1.20, –0.40, and –0.65.

Each "decision margin" represents choices made by companies in determining where and how to invest. For example, "organization form" reflects a company's decision between incorporation, branch, partnership, or other business structure. Higher corporate taxes discourage firms from incorporating; instead they opt for other business forms, especially pass-through entities. The "meta-analysis" suggests that an increase in the corporate tax rate by 1 percentage point decreases the corporate tax base on average by 0.7 percent via a shift from corporate organization to pass-through entity organization. "Profit shifting," another name for income shifting, shows the largest semi-elasticity—a 1 percentage point increase in the corporate tax rate decreases the tax base by 1.2 percent. This finding accords with Grubert's subsequent research.

According to the Mooij and Ederveen meta-analysis, the adverse impact on the tax base of an increase in the corporate tax rate is quite large through the investment channel: A 1 percentage point increase in the tax rate leads to a 1.05 percent decrease in the tax base through lower investment, combining the intensive and extensive semi-elasticity values. Since many of the studies collected in meta-analysis are dated, and since economic activity is increasingly mobile (again see box 1) it seems likely that the adverse investment impact of higher taxation is greater now than the reported combined semi-elasticity of –1.05. In fact, from its own meta-analysis, the OECD (2007) concluded "that the share of FDI that comprises real investment in physical capital is more responsive to taxes than other components of FDI."

RECONCILING THE RESEARCH

As Mooij and Ederveen (2008) tell us, multiple studies conducted over the past two decades conclude that corporate tax rates make a difference to investment and production location. But Grubert reports that effective tax differences between the United States and the foreign average have little impact on production in the United States (measured by sales) and by inference investment in the United States. Can these findings be reconciled?

Yes. But reconciliation requires a completely different mindset than the views expressed, among others, by President Obama.[17] Flexibility in the US tax law is not about "using tax breaks to ship jobs overseas." Quite the contrary. Flexibility enables the United States to stay in the game. It enables MNCs (whether headquartered in the United States or abroad) to pay competitive effective rates on their worldwide income, even while producing a substantial quantity of goods and services in the United States. Accordingly the US jobs and production

that income shifting deprived the US Treasury of somewhere between $57 billion and $90 billion of revenue in 2008. Like other static estimates, this takes no account of production, jobs, and tax revenue that would be lost if the high US statutory rate were applied to the worldwide operations of US MNCs.

15. The authors regressed a vector of all the estimation elasticities on several dummy variables to control for differences between studies, for example, data characteristics (e.g., type of capital and time); the tax variable; and background characteristics (e.g., method of double-tax relief and source of financing). In the view of the authors, the resulting semi-elasticity values cited above are additive.

16. Intensive investments are typically in assets entailing fewer risks and lower returns. Extensive-investments refer to assets which are riskier and offer higher returns.

17. For the extensive record of Obama's views on the taxation of MNCs, see Hufbauer and Vieiro (2011) and Hufbauer and Wong (2011). Again at a July 2012 campaign event in Ohio, President Obama asserted: "We don't need a president who plans to ship more jobs overseas, or wants to give more tax breaks to companies that are shipping jobs overseas." (Remarks by the President at a Campaign Event," July 16, 2012, available at http://www.whitehouse.gov/the-press-office/2012/07/16/remarks-president-campaign-event.)

Box 2 Potential consequences of ending deferral

As mentioned earlier, according to JPMorgan estimates, foreign earnings not repatriated by US MNCs amount to about $150 billion annually. If these earnings were forced to pay the 35 percent US statutory rate, based on the Grubert's research, that would represent an increase of about 19 percentage points in the applicable tax rate, resulting in $29 billion extra tax payments annually (19 percent times $150 billion). This is a purely static calculation.

We can make a guess at the dynamic consequences by applying the Mooij and Ederveen "consensus" semi-elasticity of −3.1 to the 19 percentage point jump in the applicable tax rate. Arithmetic suggests that, after US MNCs adjusted their operations, the tax base of unrepatriated earnings might shrink by almost 59 percent (19 percent times −3.1). Instead of $150 billion of annual earnings not repatriated, the figure might be closer to $62 billion (41 percent of $150 billion). Hence, after US MNCs adjusted their operations to reflect the new tax rules, the additional tax revenue collected by the Treasury annually would likely be much smaller, perhaps $12 billion (19 percent times $62 billion) rather than $29 billion (19 percent times $150 billion).

The shrinking foreign tax base would of course imply a smaller US business footprint abroad. Over time, this would spell a reduction in the outward FDI stock held by US MNCs. According to the latest *Survey of Current Business*, released in February 2013 by the Bureau of Economic Analysis, the average US outward FDI stock between 2008 and 2011 was $3.7 trillion. Over the same period, the average annual earnings from these investments were around $400 billion. Thus, the ratio of foreign earnings to outward FDI stock is around 10.8 percent. Assuming this relationship is more or less constant, we can make an informed guess as to the shrinkage of the outward FDI stock associated with the calculated compression of unrepatriated foreign earnings. The compression of foreign earnings, calculated at $88 billion (59 percent of $150 billion), suggests an eventual decrease in the outward FDI stock of around $800 billion.

In turn, US exports would suffer, while investment at home as well as R&D would decline, and the United States would become less important as a headquarters country. Quite likely, these indirect but highly adverse consequences would swamp any gain in Treasury revenues.

picture is not nearly so bad as it would be if US MNC activity worldwide was taxed at the high US statutory rate. More US production and jobs, despite an oppressive statutory corporate tax rate, are better national outcomes than extracting a bigger tax bite from US corporate income. If tax flexibility did not exist, a likely counterfactual scenario would find mobile production of goods and services "shipped overseas" to a far larger extent.

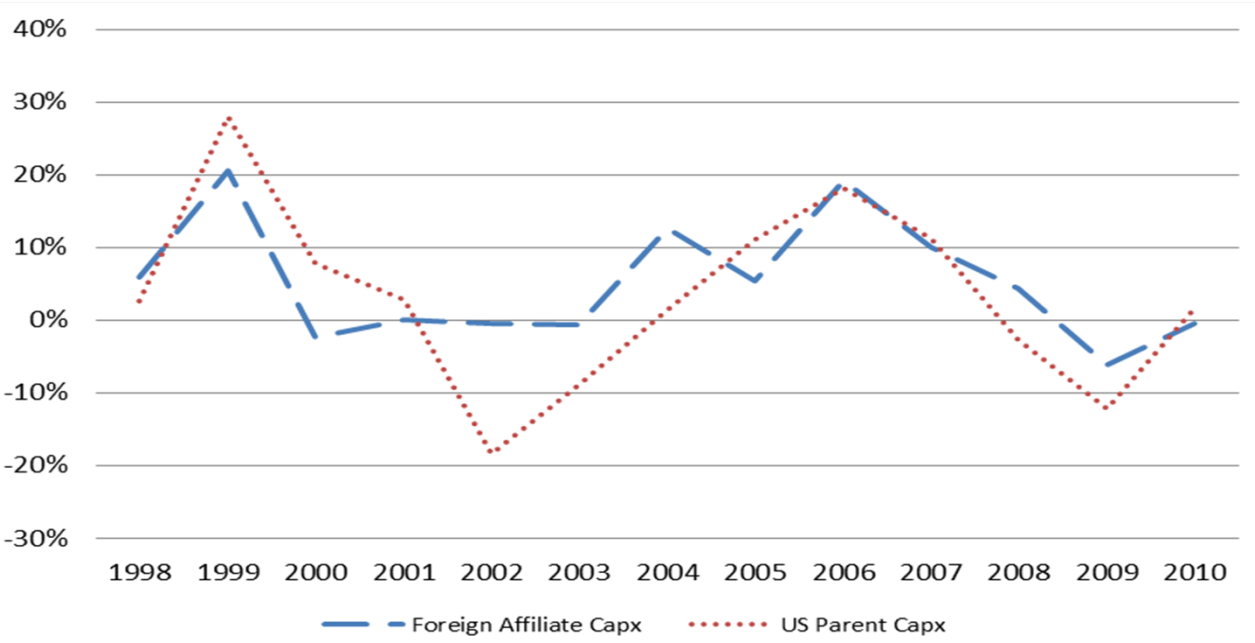
It is also important to note that the Grubert study deals only with the share of total MNC income earned at home and abroad, and not with the overall level of that income. Given the numerous studies that have documented the high level of responsiveness of firm production decisions to corporate tax rates we believe that important aggregate effects not picked up by Grubert's measures. Raising the tax rate on US MNC activity to a universally high level everywhere in the world would likely have a negative impact on how much MNCs produce, both at home and abroad.

In box 2, we present a simple "what if" scenario: What if deferral was ended and unrepatriated foreign earnings of US MNCs were taxed at the high US statutory rate of 35 percent? Our calculations suggest that, on a dynamic basis, US Treasury revenues would increase by only $12 billion annually. The revenue gain would very likely be swamped by the loss of US exports, and the decline in investment and R&D performed within the United States—reflecting the complementarity between outward FDI and economic activity within the United States.

Some scholars cite the aftermath of the Homeland Investment Act of 2004 (HIA) as an argument against any form of territorial tax system. The HIA, which was an important component of the American Jobs Creation Act of 2004 (AJCA), gave US MNCs a one-year holiday, in the year 2005, to repatriate earnings from their foreign subsidiaries at the reduced US tax rate of 5.25 percent. Congressional advocates of the HIA claimed that a burst of US investment and job creation would follow. Repatriations did indeed rise in 2005, by around $200 billion over the normal annual level of about $100 billion. In a retrospective analysis, however, Dharmapala, Foley, and Forbes (2012) found little new investment or job creation by the parent corporations. Instead, shareholder payouts increased by $0.60 to $0.92 for each $1.00 increase in repatriated earnings.[18] This outcome is consistent with the assumption that MNCs were

18. Faulkender and Petersen (2009) examined a subset of financially constrained firms and found that they did increase domestic investment but not employment. Other authors cited by Dharmapala et al. (2012) found no overall effect of the HIA on capital expenditures.

Figure 1 Year-over-year change in capital expenditures of US MNCS at home and abroad



Source: Bureau of Economic Analysis (www.bea.gov). Data are for non-bank US parents and non-bank majority-owned affiliates of US firms. 2010 figures are based on preliminary data releases.

not financially constrained in the mid-2000s, just as they are not financially constrained today. Higher shareholder payouts and an associated increase in share values are both good for the US economy,[19] but that's not the central reason for advocating a *permanent* territorial system, as opposed to a temporary holiday. A permanent system will create a level playing field for US MNCs in head-to-head competition abroad with French or Japanese or British MNCs (and indeed, MNCs based in practically all other countries). At the same time, a permanent territorial system will help the United States maintain its attractions as a headquarters country for MNCs.

CONCLUSIONS

The facts summarized in this policy brief should guide policy officials. Reducing the US corporate tax rate is certainly the most efficient way to encourage domestic investment and associated gains in production and jobs. Doing so would boost outward FDI as domestic firms would invest more domestically *and* abroad—again see figure 1—a counterintuitive outcome to those who think in terms of substitution rather than complementarity. Recall that our forthcoming PIIE research shows conclusively that greater outward investment on the part of US multinationals raises—not reduces—job creation, investment, and R&D spending in the home domestic economy (Hufbauer, Moran, Oldenski forthcoming). Increasing the effective tax rate US MNCs pay on their foreign operations should not be viewed as a method of expanding economic activity within the United States. Higher taxes on foreign operations will *not* encourage US MNCs to invest more domestically. Instead higher taxes will encourage US MNCs to slow their global expansion (and hence their US expansion). And they will encourage some US MNCs to reincorporate the parent company abroad. In fact, at least 10 public companies have done so since 2009, citing the high US statutory tax rate as a primary motivation.[20] Much of the anti-MNC rhetoric is inspired by the supposed "hollowing out" of the US labor force and decline in domestic manufacturing employment. However, if the Obama administration's tax policies are enacted—eliminating or curtailing deferral[21]—politicians will soon be complaining that not only jobs are being "shipped overseas," but also corporate headquarters.

19. As Dharmapala et al. (2012) note, shareholder payouts inspire both investment and consumption. Research by Oler, Shevlin, and Wilson (2007) found that share values increased in the run-up to the HIA for firms with earnings in low-tax jurisdictions.

20. See "U.S. Firms Move Abroad to Cut Taxes," the *Wall Street Journal*, August 28, 2012. Available at: http://online.wsj.com/article_email/SB10000872396390444230504577615232602107536-lMyQjAxMTAyMDIwOTAyODk3Wj.html?mod=wsj_valetbottom_email.

21. For the extensive record of the Obama administration's views on the taxation of MNCs, see Hufbauer and Vieiro (2011) and Hufbauer and Wong (2011).

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Table A.1 Mobility estimates of US production of goods and services

Industry	NAICS code	Average locational Gini coefficient	Tradable (Y/N)*	Product	Value add to US GDP (billions of dollars)	Share of private GDP (percent)**
Agriculture, forestry, fishing, and hunting	11	0.29	Y	Goods	156.9	1.2
Mining	21	0.51	Y	Goods	239.5	1.9
Utilities	22	0.05	N	Goods	264.8	2.1
Construction	23	0.08	N	Goods	511.6	4.1
Manufacturing	31–33	0.26	Y	Goods	1,701.90	13.6
Wholesale trade	42	0.14	Y	Goods	797.3	6.3
Retail trade	44–45	0.07	N	Goods	884.8	7.0
Transportation and warehousing	48–49	0.15	Y	Goods	402.5	3.2
Information	51	0.19	Y	Services	623.4	5.0
Finance and insurance	52	0.15	Y	Services	1,241.90	9.9
Real estate and rental and leasing	53	0.13	Y	Services	1,765.20	14.0
Professional, scientific, and technical services	54	0.19	Y	Services	1,095.70	8.7
Management of companies and enterprises	55	0.23	Y	Services	263.6	2.1
Administrative and waste management services	56	0.1	N	Services	423.3	3.4
Educational services	61	0.01	N	Services	163.1	1.3
Health care and social assistance	62	0.02	N	Services	1,109.10	8.8
Arts, entertainment, and recreation	71	0.12	Y	Services	139.1	1.1
Accommodation and food services	72	0.04	N	Services	416.6	2.2
Other services, except government	81	0.14	Y	Services	356.7	2.8
Government	92	0.16	N	Services	1,968.50	15.7
				Subtotal of tradable private GDP in goods	3,298.10	26.2
				Subtotal of private GDP in goods	4,959.30	39.4
				Subtotal of tradable private GDP in services	5,485.60	43.6
				Subtotal of private GDP in services	7,597.70	60.5
				Subtotal of tradable private GDP	8,783.70	69.9
				Total private GDP	12,557.00	100.0

* *Industry is considered 'tradable' when the Gini coefficient is greater than .1*

** *Private GDP excludes government spending*

Sources: Commerce Department's Bureau of Economic Analysis (US GDP), Jensen 2011 (locational Gini coeffficient), author's own calculations.

Table A.2 Mobility estimates of US employment

Industry	NAICS Code	Average locational Gini coefficient	Tradable (Y/N)*	Product	Employment (in thousands)	Share of private sector employment (percent)**
Agriculture, forestry, fishing, and hunting	11	0.29	Y	Goods	1,271	1.1
Mining	21	0.51	Y	Goods	648	0.5
Utilities	22	0.05	N	Goods	553	0.5
Construction	23	0.08	N	Goods	5,767	5.1
Manufacturing	31-33	0.26	Y	Goods	11,529	10.3
Wholesale trade	42	0.14	Y	Goods	5,520	4.9
Retail trade	44-45	0.07	N	Goods	14,743	13.2
Transportation and warehousing	48-49	0.15	Y	Goods	4,227	3.8
Information	51	0.19	Y	Services	2,720	2.4
Finance and insurance	52	0.15	Y	Services	5,720	5.1
Real estate and rental and leasing	53	0.13	Y	Services	2,015	1.8
Professional, scientific, and technical services	54	0.19	Y	Services	7,603	6.8
Management of companies and enterprises	55	0.23	Y	Services	1,853	1.6
Administrative and waste management services	56	0.1	N	Services	7,515	6.7
Educational services	61	0.01	N	Services	3,211	2.8
Health care and social assistance	62	0.02	N	Services	16,534	14.8
Arts, entertainment, and recreation	71	0.12	Y	Services	1,944	1.7
Accommodation and food services	72	0.04	N	Services	11,262	10.1
Other services, except government	81	0.14	Y	Services	6,743	6
Government	92	0.16	N	Services	24,966	N.A.
			Subtotal of tradable private sector employment in goods		23,195.00	20.8
			Subtotal of private sector employment in goods		44,258.00	39.7
			Subtotal of tradable private sector employment in services		28,598.00	25.6
			Subtotal of private sector employment in services		67,120.00	60.2
			Total of tradable private sector employment		51,793.00	46.5
			Total private sector employment		111,378.00	0.8

** Industry is considered 'tradable' when the Gini coefficient is greater than .1*
*** Private sector employment excludes public sector employees*

Sources: Commerce Department's Bureau of Economic Analysis (employment), Jensen 2011 (locational Gini coefficient), author's own calculations.