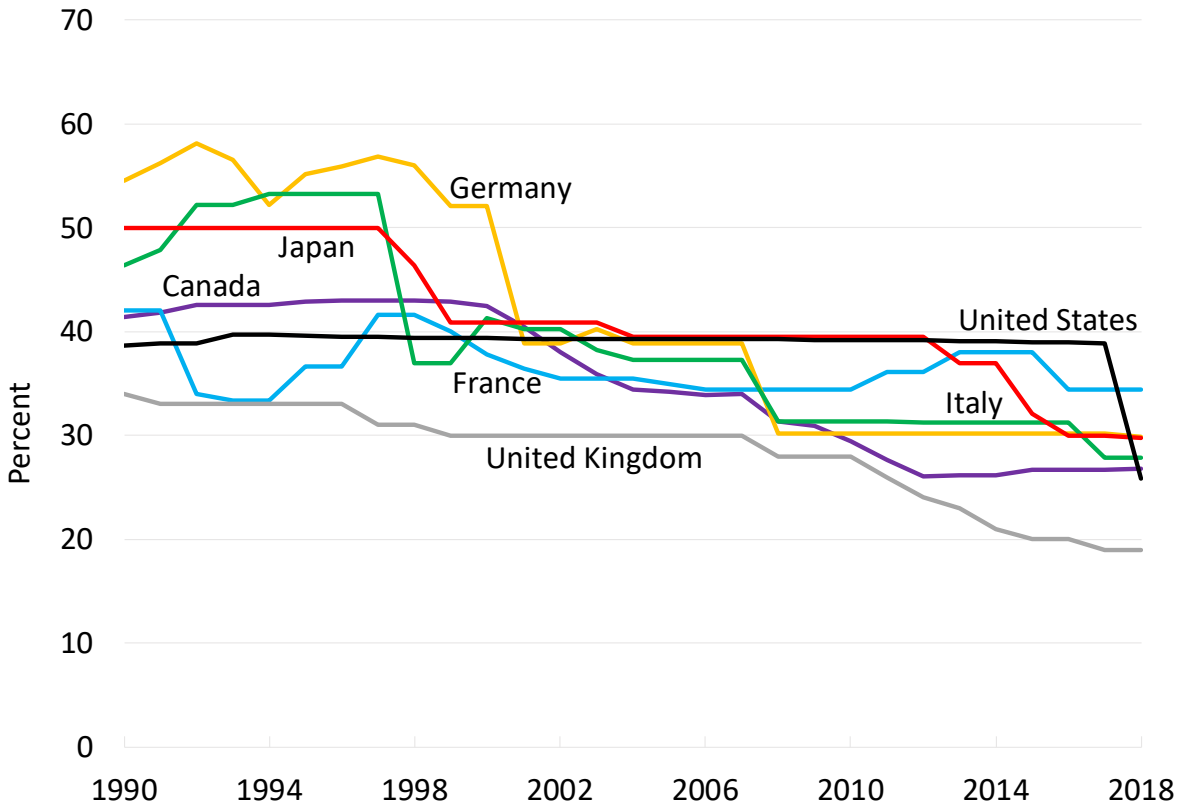
Economics 230a, Fall 2018
Lecture Note 13: Introduction to International Taxation

It is useful to begin a discussion of international taxation with a look at the evolution of corporate tax rates over the past few decades. Here are the rates (for all levels of government combined) for the G-7 countries since 1990, from the OECD Tax Database:



There is a pretty clear downward trend, with rates ranging from 33%-58% in the early '90s and 19%-34% in 2018. Of note is that the highest tax rate in recent years, until 2018, was for the United States. A similar trend exists for other developed countries as well. Also, there are many countries, typically quite small in population and GDP, where corporate tax rates are close to or equal to zero. Such countries are commonly known as "tax havens." In between tax havens and the G-7 countries, in both size and tax rates, are countries like Ireland, where the tax rate is 12.5%. Even Ireland, though, has made a transition to this low tax rate, having begun the period with a tax rate of 43%.

The trend toward lower tax rates is sometimes characterized as a "race to the bottom" resulting from tax competition among governments, but such a description fails to explain why competition might have become more intense over time, as the falling rates would suggest. We will discuss the tax competition literature, but it is first necessary to explore in more detail the important attributes of international tax systems.

The Basic Structure of International Tax Systems

International tax systems differ not only in their rates and their bases (e.g., what expenses are deductible, etc.), but also, very importantly, in the principles countries use to determine which income to tax. While it may at first seem straightforward for a country to tax "its" income, there is no clear definition of the income of any particular country. One obvious distinction, as in the national income accounting distinction between GDP and GNP, is between income earned *in* a country and income earned *by* a country, which in the international tax context amounts to the difference between taxing income according to its source, i.e., where production occurs, and taxing income according to residence, i.e., the location of those earning it. Until 2018, the United States was sometimes said to have a residence-based tax system (also known as a worldwide tax system) rather than a source-based system (also known as a territorial tax system), but the former US system (and indeed the new US system) is better understood as a hybrid, with some characteristics of a residence-based tax system, some characteristics of a source-based tax system, and still other characteristics that are present under neither the source nor residence approach.

The United States, through 2017, imposed a source-based tax, i.e., a tax on all income generated in the United States. But it also imposed some tax on the foreign-source income of US companies, imposing the US tax rate on such income but (1) providing a tax credit against foreign taxes; and (2) taxing such foreign-source income only when it was repatriated. These two provisions meant that that US system imposed an effective tax rate on foreign-source income that somewhere between 0 and the US rate, depending on the rate of foreign taxation and the extent to which repatriations were deferred. This deferral incentive has been called the lock-out effect, as, in contrast to the induced behavior under capital gains taxation discussed in Lecture 10, funds are kept *out* of US investments, rather than kept in them. Dharmapala, Foley and Forbes (*JF* 2011) studied the impact on repatriations of an interesting 2004 natural experiment in which the United States offered a substantial one-year reduction in the tax rate on repatriations. There was a huge surge in repatriations during that period, although the effects on domestic US investment were small, suggesting that the repatriating companies had sufficient capital market access without the repatriated funds.

As a result of the Tax Cuts and Jobs Act, passed in 2017, the US tax system still follows the approach of taxing foreign-source income subject to a foreign tax credit, but it has replaced the previous approach of taxing foreign source income upon realization with one of taxing foreign source income immediately, but at a lower tax rate, and providing only a partial foreign tax credit. This change maintains many of the characteristics of the previous system but has eliminated the lock-out effect.

Optimal Taxation in an International Setting

In thinking about what a particular country's tax system should look like (and leaving aside the potential reactions of other governments, which will be covered in the next lecture on Tax Competition), it is useful to consider the three potential tax rates on capital income that the home country might impose in the above-two country model: the tax rate on domestic investment undertaken by domestic residents, say τ, the tax rate on domestic investment undertaken by foreign residents, say ϕ, and the tax rate on foreign investment undertaken by domestic residents,

say τ^f. (We assume, realistically, that the home country can't impose tax on the fourth combination of investor residence and investment location, investment abroad by foreign investors.) Under a pure source-based system, $\tau = \phi$, and $\tau^f = 0$. Under the pure residence-based system, $\tau = \tau^f$ and $\phi = 0$. Under a hybrid system like that of the United States, $\tau = \phi$, and $0 < \tau^f < \tau$, the last result reflecting the impact of lower rate of tax on foreign-source earnings and the foreign tax credit. The same effect of reducing τ^f could, of course, be accomplished in a more straightforward manner simply by eliminating the foreign tax credit and imposing a lower statutory rate on foreign-source income, and we can think of the problem of optimal policy design as one of choosing the three tax rates, τ, ϕ, and τ^f.

This problem was first analyzed by Feldstein and Hartman (*QJE* 1979), and we can distinguish the cases of a small country and a large one. It is also helpful to think about special cases in which only home companies invest abroad and in which only foreign companies invest abroad.

For a small, capital exporting country, the operative tax rates are τ and τ^f, and a simple corollary of the Diamond-Mirrlees production efficiency theorem is that capital invested at home and abroad by domestic residents should face the same domestic tax rate in order for domestic and foreign uses of capital to be efficient, from the home country's perspective. (Note that from a *worldwide* perspective this won't result in efficient capital allocation if the foreign country's tax rate is positive, but we are considering what is optimal from the home country's perspective, taking foreign taxes as given.) Hence τ and τ^f should be equal. For a small, capital importing country, there is no benefit to taxing capital imports, so ϕ should be zero. This result (as discussed in Gordon, *AER* 1986) follows from the fact that the elasticity of supply of capital to a small country is effectively infinite, so that a tax on capital imports falls on workers, just like a labor income tax. But the tax on capital also distorts domestic production, making it too labor intensive. Together, these results lead to the conclusion that small countries should adopt a pure residence-based tax on capital income ($\tau = \tau^f$ and $\phi = 0$), to the extent that capital income is taxed (which we considered in Lecture 8). See the Gordon-Hines *Handbook* chapter for discussion.

For a large country, these results break down because tax policy can affect the terms of trade. For a capital exporting country, a higher tax on foreign source income reduces investment abroad and may therefore increase the before-tax return on such investment. For a capital importing country, a tax on income from inbound investment may drive capital out but also reduce the worldwide rate of return and the hence the cost of funds to the domestic economy.

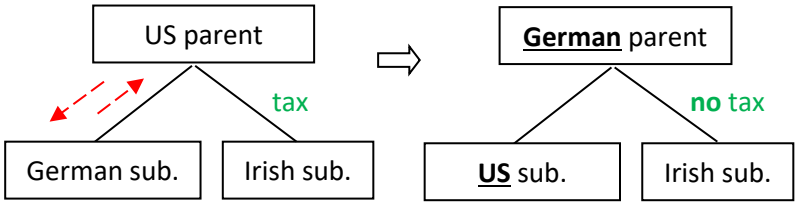
Further Margins of Behavioral Response

The discussion so far relates to a setting in which national corporations invest on behalf of their country's residents, choosing between investment at home and abroad, with the location of such income well measured. But this abstracts from key elements of reality. Two of particular importance are:

(1) Residents of a country may invest in domestic or foreign companies, domestic companies obtain funds in a world capital market, and a company's national identity is not fixed; and

(2) The actual source of production and earnings is difficult to determine when an individual company operates in more than one jurisdiction, particularly when intangible assets are used.

The first point means that taxing the income of resident *corporations* is not equivalent to taxing the income of resident *individuals*. Thus, the efficiency arguments for residence-based taxation at the *corporate* level are less apparent. Further, another margin of potential distortion arises in a company's choice of residence, which has been a major policy issue recently in the United States. Consider, for example, a case in which Germany and the United States have the same corporate tax rates, but Germany follows a territorial tax system (as it actually does) and the United States follows a hybrid tax system, with some taxation of foreign-source income. A company obtaining funds in a world capital market will face the same cost of capital regardless of its own residence and will also face the tax rate on operations in either Germany or the United States. But a German company operating in a third, low-tax country, say Ireland, will face only the low tax rate in that country (because Germany has a territorial tax system), while the US company will face Irish tax plus additional US tax. Hence, the US company faces a competitive disadvantage relative to the German company on operations in Ireland and other low-tax jurisdictions. If the company can relocate from the United States to Germany, it may do so, even if there are economic benefits to being in the United States. This change in residence is commonly called a corporate inversion because the simplest way to accomplish it (prior to 2004 legislation) was to have the US parent switch places in the corporate structure with a foreign subsidiary, as shown in the figure below.



The approach taken more recently is for a US company to merge with a foreign company and declare residence for the combined entity in the other company's country.

The second point above means that firms will engage in profit-shifting across jurisdictions in which they operate when different tax rates apply. For example, a US corporation may license intellectual property developed in the United States to a wholly owned Irish subsidiary for a very low price, meaning that the US company's profits will be understated and the Irish subsidiary's profits overstated. If the Irish subsidiary's profits were immediately subject to US tax, as under a pure residence-based tax, there would be no incentive for the US company to engage in profit shifting, which underlies arguments for a shift toward higher taxation of US profits abroad. But this shift would also increase the taxes on US companies relative to foreign companies and exacerbate incentives for US companies to engage in corporate inversions. On the other hand, a US shift toward source-based taxation would lessen incentives for US companies to engage in inversions but increase their incentives for profit shifting, because once shifted, profits would be completely free of subsequent US taxation.

Returning to the figure presented at the beginning of this lecture note, we can observe that a reduction in the corporate tax rate reduces incentives for inversions (by lowering US tax on foreign operations) and for profit shifting (by reducing the tax benefit of shifting profits from the US to other countries). This, along with the growing importance of multinational companies in the global economy, may help explain the trend toward lower corporate tax rates around the world.