DRAFT—May 28, 2008

Business Taxes and International Competitiveness

Michael S Knoll*

University of Pennsylvania

Abstract

Around the world, policymakers are obsessed with the competitiveness of their domestic companies and domestically based multinational corporations (MNCs). Such concerns frequently influence policy, especially tax policy. In this paper, I develop a theory of how taxes affect the international competitiveness of businesses. I then use that theory to evaluate basic tax policy decisions, such as the choice between residence- and source-based taxation and the level of tax rates, and to understand the impact various provisions in the U.S. Internal Revenue Code are likely to have on the competitiveness of U.S.-based corporations and MNCs.

Keywords: competitiveness, taxation, international competitiveness, international taxation, territorial taxation, worldwide taxation, foreign tax credit, source-based taxation, residence-based taxation, capital export neutrality, capital import neutrality, capital ownership neutrality.

JEL codes: F10, F30, H22, K34

* Theodore K. Warner Professor, University of Pennsylvania Law School; Professor of Real Estate, the Wharton School; Co-director, Center for Tax Law and Policy, University of Pennsylvania. I thank Reuven Avi-Yonah, Mitchell Kane, Paul De Gruuwe, and Richard Frensch for comments and suggestions and Al Dong for his assistance with the research. I have benefited from presentations made at the Universities of Connecticut, Pennsylvania, Toronto, Fordham, Columbia and Washington & Lee, the CESifo Workshop on the Many Dimensions of Competitiveness, the 2007 Law & Society meetings, and 2008 Law and Economics meetings. Copyright 2008 by Michael S. Knoll. All rights reserved. Preliminary draft. Not for quotation or attribution without the author's permission. Comments welcome. Email: mknoll@law.upenn.edu

DRAFT – May 28, 2008

Business Taxes and International Competitiveness

Michael S Knoll

I. Introduction

Competitiveness has been called a dangerous obsession.[1] It is certainly an obsession.[2] Around the world, competitiveness considerations frequently inform policy and the law. One place where this obsession is evident is in the tax laws. Governments often find it hard to reject claims from their constituents that local businesses are at a competitive disadvantage relative to foreign firms. Frequently, the claim is made that tax laws are one – if not the leading source – of a lack of competitiveness. Often, the response has been to amend the tax laws with the goal of improving the competitiveness of domestic firms. There is much evidence for that practice in U.S. tax law.

For example, the Foreign Investment in Real Property Tax Act was aimed at eliminating a perceived tax advantage enjoyed by Japanese investors who purchased U.S. real estate at "fire sale" prices in the late 1970's. A similar concern with a perceived tax-induced disadvantage in competitiveness motivated the 1986 branch profit tax provisions and the 1989 earning stripping limitations. More recently, even the names that Congress gives to its tax bills, such as the American Jobs Creation Act of 2004, evidence Congress's intention to use the tax system to improve U.S. competitiveness.[3]

One impetus for that concern is the increasingly important role played by cross-border transactions in the U.S. economy. In 1960, international trade in goods represented 6 percent of gross domestic product (GDP). In 2006, it accounted for 20 percent of GDP.[4] In 1960, annual cross-border investment flows represented 1 percent of GDP. In 2006, it was 18 percent of GDP. By 2006, the aggregate ownership of foreign capital by U.S. investors and of U.S. capital by foreign investors totaled $26 trillion – about two years' GDP. Given the large size and dramatic growth in cross-border capital flows, it is no wonder that there is such widespread interest in the impact taxes can have on U.S. competitiveness.[5]

Yet, in spite of the persistent claims that the U.S. tax laws are handicapping domestic companies and the government's recurrent attempts to use the tax laws to improve the competitive position of domestic firms, little academic attention has been given to the

---

[1] Paul Krugman, *Competitiveness: A Dangerous Obsession*, FOREIGN AFF., Mar.-Apr. 1994, at 28.
[2] *See* Samuel Brittan, *'Competitiveness' Rears Its Ugly Head* FIN. TIMES, Aug. 31, 2007, at 11.
[3] *See* Reuven Avi-Yonah, *All of a Peace Throughout: The Four Ages of U.S. International Taxation*, 25 VA. TAX. REV. 313, 334 (2005).
[4] Trade in services, which was not counted in 1960, represented another 5 percent of GDP.
[5] *See* Office of Tax Policy, U.S. Department of the Treasury, *Approaches to Improve the Competitiveness of the U.S. Business Tax System for the 21st Century* 2 (Dec. 20, 2007).

connection between competitiveness and taxes. There are several reasons for that inattention. First, many economists are uncomfortable with the idea of competitiveness, which is not a well defined concept in economics, and so eschew writing about it. Second, international economists are mostly interested in the welfare implication of various, alternative tax policies, and it is possible to talk about welfare without using the language of competitiveness.

Accordingly, this essay is an attempt to begin to fill that gap by improving our understanding of how taxes affect competitiveness.[6] In this essay, I develop a simple model to illustrate how various tax policy decisions can affect international competitiveness. I, then, apply that model to various provisions in the U.S. Internal Revenue Code.[7] However, before any of that, I provide a definition for competitiveness.

II. What is Meant by Competitiveness

What is meant by competitiveness? It is not a term that economists traditionally use.[8] Economists often speak of efficiency, or comparative advantage, or more narrowly of (an advantage in) marginal production costs or the cost of capital, but rarely do they speak of competitiveness. Yet the press, the public and policymakers regularly use the language of competitiveness.

In recent years, a few economists have begun writing about competitiveness.[9] And one conclusion that is clear from that work is that there is no single universally accepted definition of competitiveness. Because it has never been defined rigorously in the economic literature, the term "competitiveness" is an ambiguous concept that has been given many different meanings.[10] Frequently, the term "competitiveness" is applied at the macroeconomic level in order to make statements about whole nations.[11] For example, the World Economic Forum and Institute of Management Development (WEF/IMD) annually publish their World Competitiveness Index.[12] Like all such indexes, the World Competitiveness Index summarizes a range of indicators into a single number. Such a number is a weighted average of all the factors that go into the index. Of course, with any such method, the choice of weights is suspect. More fundamentally,

---

[6] This essay is part of a larger project on taxes and competitiveness. The first paper in that series is Michael S. Knoll, *Taxes and Competitiveness (*Univ. of Penn., Inst. for Law & Econ. Research, Paper No. 06-28, 2006), and is available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=953074. The second paper in that series is Michael S. Knoll, *The UBIT: Leveling an Uneven Playing Field or Tilting a Level One?* 76 FORDHAM L. REV. 857 (2007).

[7] Unless otherwise stated, all statutory references are to the U.S. Internal Revenue Code of 1986, as amended ("IRC").

[8] *See* Brittan, *supra* note [2].

[9] For a thoughtful review of the literature on competitiveness, with an emphasis on the various different definitions employed in the literature, see Eckhard Siggel, *International Competitiveness and Comparative Advantage: A Survey and a Proposal for Measurement*, 6 J. INDUS. COMPET. TRADE 137, 140-48 (2006).

[10] *Id.* at 140.

[11] *Id.* at 141-42.

[12] The most recent WEF/IMD Global Competitiveness Report, with Index, is for 2007-2008, and is *available at* http://www.gcr.weforum.org/.

is the absence of a theoretical basis for the choice of factors. Other scholars attempt to measure the competitiveness of nations by their real exchange rates (or real effective exchange rates).[13] Such methods measure the deviation from purchasing power parity. Accordingly, such measures of competitiveness are better indicators of the extent of distortions in the currency markets than they are of anything on the real side of the economy. As such, they are a poor choice for modeling the impact of tax policy on competitiveness.[14]

In contrast with macroeconomic concepts of competitiveness, microeconomic concepts focus on producers competing in product markets. Microeconomic measures of competitiveness include delivered market price, total cost in domestic prices,[15] marginal and average cost of production, unit labor cost,[16] and market share.[17] Microeconomic definitions have several advantages over macroeconomic definitions. First, because they apply to industries or firms, rather than to whole economies, microeconomic measures are more closely aligned with our intuitions about competitiveness. Second, microeconomic measures are capable of being given a more solid theoretical foundation because they can be integrated into standard economic models.

There is a wide variety of microeconomic indicators of competitiveness. That diversity is in part a response to widespread and divergent demand for such information. The principal users of broad macroeconomic indexes, such as the WEF/IMD World Competitiveness Index, are investors and lenders. They use the index to help them make decisions about investments and loans, to set hurdle rates and loan rates, to decide where to allocate their money, and to assess the risk of their portfolios. In contrast, microeconomic indicators are generally developed with an eye towards government policy. Governments regularly take action under the rubrics of trade policy, industrial policy and tax policy. Such actions affect both domestic companies and foreign companies and are frequently informed by considerations of competitiveness. That is clearly the case with tax policy. Accordingly, any definition of competitiveness that will be useful for evaluating tax policy must have the potential to be affected by tax policy.

In the fields of antitrust and industrial organization, competitiveness is sometimes conceptualized in terms of the minimum price that a competitor is willing to charge. A

---

[13] *E.g.*, Leslie Lipschitz & Donogh McDonald, *Real Exchange Rates and Competitiveness: A Clarification of Concepts, and Some Measurements for Europe* (IMF, Working Paper No. 91/25, 1991), *available at* http://ssrn.com/abstract=884671; Ian W. Marsh & Stephen Tokarick, *Competitiveness Indicators: A Theoretical and Empirical Assessment* (IMF, Working Paper No. 94/29, 1994), *available at* http://ssrn.com/abstract=883467.

[14] Siggel, *supra* note [9] at 151-52.

[15] *See id.* at 150-53.

[16] *See* INTERNATIONAL PRODUCTIVITY & COMPETITIVENESS 3-10 (Bert G. Hickman ed., 1992) (providing an overview on productivity and competitiveness); Anthony G. Turner & Stephen S. Golub, *Towards a System of Unit Labor Cost-Based Competitiveness Indicators for Advanced, Developing and Transition Countries* (IMF, Working Paper No. 97/151, 1997), *available at* http://ssrn.com/abstract=882726 (Staff studies for the World Economic Outlook).

[17] Ousmane J. Mandeng, *International Competitiveness and Specialization*, 45 CEPAL REV. 39-52 (1991); Paul Krugman & George N. Hatsopolous, *The Problem of Competitiveness in U.S. Manufacturing*, NEW ENG. ECON. REV. Jan. 1987, at 18.

seller, thus, is more competitive if it can sell a product for less than its competitors. Various cost-type definitions of competitiveness include the following: revealed comparative advantage,[18] domestic resource cost,[19] unit labor cost,[20] full unit cost,[21] relative unit labor cost,[22] and total unit labor cost at domestic prices.[23]

There is much to say on behalf of such cost-based definitions of competitiveness. They are inconsistent with many of our intuitions. They also match up well with antitrust law and industrial organization views of competitiveness, which focus on price competition and view cost as one of the key determinants of price.

There are, however, also problems with any cost-based definition of competitiveness. First, we do not have a convincing theory of competition over prices. Although there are theories of competition in imperfect markets, none of those theories does a convincing job of capturing reality. Accordingly, any attempt to develop a theory of how taxes affect competitiveness by affecting prices is problematic since we do not have a good theory of competition among parties with different costs. Second, taxes are likely to impact costs both directly and indirectly in a variety of ways. Disentangling the various indirect effects of taxes upon costs and prices is likely to be very complicated.

Accordingly, I will use a different, but closely related definition. I define competitiveness in terms of the maximum price that a competitor will bid for an asset (the "candidate investment"). Thus, the higher that value, the more competitive is a party.[24] This definition is consistent with many of our intuitions.[25] For example, the lower are other costs of production, the higher one is willing to bid for a scare and necessary input. It also captures some real world economic activity. For example, it does an especially good job of capturing one vivid form of competition – when companies compete to purchase existing assets or an extant firm. It also applies more generally because anyone who owns assets can – and often will – sell those assets if there is someone who values those assets more highly. In addition, defining competitiveness in terms of the maximum bid price is relatively easy to model.

In order to focus on how taxes affect competition, I assume that in the absence of taxes all competitors would value the investment at the same amount. That is to say, I assume that all competitors would earn the same cash flow from a given investment and have the same cost of capital.[26] I make that assumption not because it accurately describes the real

---

[18] Bela Balassa, *Trade Liberalization and "Revealed" Comparative Advantage*, 33 MANCHESTER SCH. 99 (1965).
[19] Michael Bruno, *Domestic Resource Cost and Effective Protection: Clarification and Synthesis*, 80 J. POLITICAL ECON. 16 (1972).
[20] *See International Productivity & Competitiveness*, *supra* note [16].
[21] Eckhard Siggel & John Cockburn, *International Competitiveness and Its Sources: A Method of Development Policy Analysis* (Concordia Univ. Dep't of Econ., Discussion Paper No. 9517, 1995).
[22] Turner & Golub, *supra* note [16].
[23] Siggel & Cockburn, *supra* note [21].
[24] *Cf.* Mitchell A. Kane, *Ownership Neutrality, Ownership Distortions, and International Tax Welfare Benchmarks*, 26 VA. TAX REV. 53 (2006).
[25] *See* Knoll, *supra* note [6].
[26] Assuming the cash flow is the same, the cost of capital for that investment will usually be the same.

world (firms are not all equally efficient), but in order to isolate the consequences of different tax treatments. Accordingly, if there is a difference in valuation, it must be a result of taxes.

Following that approach, I define a competitively neutral tax system as one where equally efficient competitors place the same value on the candidate investment. More generally, a competitively neutral tax system is one where the tax system does not change relative bid prices across potential investors. Accordingly, tax considerations can affect competitiveness when they cause relative bid prices to change.[27]

Tax neutrality is likely to have substantial welfare benefits. As economists have recognized for some time, the identity of the party who owns an asset – and especially who controls an asset –can affect how that asset is used. Thus, when ownership and control are not in the hands of the party that can best use an asset, there is a costly distortion and welfare is not at a maximum.[28]

III. Firms as Conduits

Much of the recent attention being paid to competitiveness focuses on the competitiveness of multinational corporations (MNCs) and of domestic competitors to foreign MNCs. One important feature of firms is that they do not have a fixed quantity of capital to invest. Instead, firms are conduits. They pool money from people who have it and they invest that money in various projects.[29]

Because firms are conduits, there are two sets of tax consequences from an investment by a firm. First, there are tax consequences on the investment side. Second, there are tax consequences on the financing side. The latter includes the tax consequences to the firm of its financing choices. It also includes any tax imposed on the investors. Understanding the impact of taxes on competitiveness requires an examination of both the investment and financing sides. Expressed somewhat differently, a proper

---

[27] There are some similarities between competitiveness neutrality and capital ownership neutrality (CON). The latter idea is closely associated with Desai and Hines. *E.g.*, Mihir A. Desai & James R. Hines, Jr., *Evaluating International Tax Reform*, 56 NAT'L TAX J. 487 (2003). There are also significant differences between competitiveness neutrality and CON. The most salient difference is that competitiveness neutrality is not being offered as a normative benchmark. Accordingly, my emphasis is on the conditions necessary to achieve competitiveness neutrality, and not on whether a competitively neutral tax system should be a goal of cross border tax systems. I take it as a given that states are concerned with the competitiveness of their local firms and are interested in understanding how tax systems affect that competitiveness. A second difference is that competitiveness recognizes that there are other ways to exercise control over an asset without owning the asset. Another difference is that competitiveness applies to both firms and investors, as developed by Desai & Hines CON ignores firms and applies to the ultimate beneficial owners. In addition, I arrive at different conclusions than Desai & Hines and Kane for the conditions under which either competitiveness neutrality or CON will be achieved.

[28] For discussions of some of the welfare costs from distorting ownership patterns, see Desai & Hines, *supra* note [27]; Kane, *supra* note [24], and Knoll, *Taxes and Competitiveness*, *supra* note [6].

[29] See Kane, *supra* note [24].

examination of the impact of taxes on competitiveness requires consideration of the tax consequences for the firm and for investors in the firm.

In this essay, I look at how taxes affect competitiveness of both firms and investors.[30] Although I look at both firms and their investors, the focus is on competitiveness at the level of the firm. That is because most of the efficiency benefits from owning and controlling assets are likely to arise at the firm level. The benefits are likely smaller at the investor level. Even so, I also look at the effect of taxes on competitiveness at the investor level. I do this for several reasons. First, some investments are made directly by individuals, not through firms. Second, there can be efficiency costs from distortions in direct ownership, especially when such investments provide some measure of control.[31] Third, individual investors can suffer a welfare loss in the form of bearing nonsystematic risk when tax consideration cause them to avoid the securities of corporations from other countries.[32]

IV. Territorial and Worldwide Taxation

In this Part, I develop a model of how taxes affect the international competitiveness of firms and investors. The focus in this Part is on the broadest questions of tax policy. Specifically, I look to see whether territorial or worldwide tax systems can be competitively neutral. A territorial tax system taxes each taxpayer only at the source. Income earned in one country is not taxed in any other country. Thus, with a territorial tax system, investment income is taxed at the rate applied in the source jurisdiction to local investments. In contrast, with a worldwide tax system, income is taxed both in the country where it is earned and in the country where the taxpayer resides. To prevent double taxation, the country of residence grants a foreign tax credit to its taxpayer for the taxes it pays to foreign governments on foreign-source income. In theory, a worldwide tax system requires an unlimited foreign tax credit.[33] With contemporaneous taxation at home and abroad, and an unlimited foreign tax credit, the effect of worldwide taxation is to tax the investor at his residence country tax rate on any investment.[34]

Throughout this essay, I use a simple example with three countries: A, B and C. Assume that the rate of return on riskless, alternative assets (the "benchmark asset") in a world

---

[30] In this essay, I do not look at home taxes affects the competitiveness, the salaries or productivity of those who work. *See generally* Office of Tax Policy, U.S. Department of the Treasury, *supra* note [5] at 1 (referring to the competitiveness of U.S. workers). Those issues are important, but beyond the scope of this current essay.

[31] Many private equity firms claim that they have expertise in improving underperforming businesses. If so, that would be an example where the identity of the investors – at least of the fund manager rather than the passive financial investors – mattered.

[32] *See* Mihir Desai & Dhammika Dharmapala, *Taxes, Institutions and Foreign Diversification Opportunities* (May 2007), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=986322.

[33] A country with an unlimited foreign tax credit will refund taxes on domestic income if the source country tax on foreign income exceeds the residence country tax on that income. No country offers a truly unlimited foreign tax credit.

[34] Throughout this essay, I largely ignore the possibility of deferring residence country taxation with a worldwide tax system.

without taxes is 10 percent.[35] In the absence of taxes, the rate of return is the same everywhere regardless of where an asset is located or its holder resides. In such a world, consider a simple, one-period, riskless direct investment.[36] The project, which is located in Country B, will pay $1100 in one year (the "candidate investment").

Assume that competition for the candidate investment occurs across firms located in the three countries.[37] Each company operates by raising capital from outside the firm and investing that capital. Equally efficient firms from the three countries compete for the candidate investment. Thus, each firm will earn the same $1100 from the investment with the same inputs. The candidate investment, which is sold through an auction, is acquired by the firm that places the highest value on it.

Using the assumptions given above, each firm will be able to raise the capital to undertake the candidate investment by going out into the marketplace and paying a 10 percent return. Thus, each firm will discount the cash flows from the project using a 10 percent hurdle rate. Accordingly, each firm will be willing to pay up to $1000 for the candidate investment.[38] Because in a world without taxes no company values the candidate investment more than another, any difference in a world with taxes must be due to taxes.

A. Territorial Taxation

Now introduce the possibility of taxes. Assume that there are three countries and each country imposes an income tax. The three countries, however, have different (flat) tax rates. Country A imposes tax at a rate of 25 percent, Country B at 40 percent, and Country C at 50 percent. Initially, assume that all countries have territorial tax systems. Assume further that investors from Country B set market interest rates everywhere. Let the before-tax interest rate in Country B be 10 percent. Thus, the after-tax return in Country B will be 6 percent.

Throughout this essay, I assume that capital is highly mobile globally. Because of that mobility, the after-tax return in a world where every country has a territorial tax system will be equal everywhere. Hence, the before-tax return will be 8 percent in Country A and 12 percent in Country C. That yields an after-tax return of 6 percent for investments in Countries A and C as well. Thus, the after-tax return is equal everywhere at 6 percent, but the before-tax return varies across countries with their national tax rates. That is illustrated in Table 1.

---

[35] The idea of a benchmark asset is that additional funds can be readily invested in such an asset. Accordingly, the after-tax return on alternative assets will tend to move towards the after-tax rate on the benchmark asset.

[36] I use a riskless investment throughout this essay in order to keep the example simple so as not to bury the intuition.

[37] In a world without taxes, the value that competitors place on the candidate investment will be independent of the nature of the competition. Specifically, when there are no taxes the value will be the same whether the competition is among individuals or firms.

[38] The value of the candidate investment to any firm is calculated as $1000 = $1100/1.1.

Table 1
Territorial Taxation
Before- and After-Tax Rates of Return in Each Country

	Country A	Country B	Country C
Tax Rate	25%	40%	50%
Before-Tax Return	8%	10%	12%
After-Tax Return	6%	6%	6%

Consider first the possibility that competition for the candidate investment is across firms, but that the firms are not taxable entities. All entities, including corporations, are subject to pass-through tax treatment: all items of revenue, expense, basis or credit pass through the entity to the investor. That includes the source of any item. Thus, all investors are taxed as if each one earned his proportionate share of the firm's income. From a tax perspective, that is equivalent to assuming that that the competition occurs across individuals, not firms.

Because the market for capital is global, a company based in one country can raise capital from investors in any country and can invest that capital in any country.[39] The candidate investment is located in Country B and all income generated by the candidate investment will be taxed in Country B as Country B source income. Because the tax system of every country is assumed to be territorial, no other country will tax that income, and so the tax rates in other countries do not affect the cash flow from the candidate investment.[40] Thus, regardless of who finances the candidate investment, and irrespective of through which country the investment is channeled, the candidate investment will be subject to tax at the 40 percent tax rate imposed by Country B.

Consider three investors – one located in each country. With global adoption of a territorial tax system, each investor earns an after-tax return of 6 percent at home and in every other country. Thus, in country B where all income from the candidate investment is sourced and subject to tax at 40 percent, each investor must earn 10 percent before tax in order to earn 6 percent after tax. Thus, firms can raise the capital to undertake investment from individuals from every country by paying them a 10 percent before-tax return. Accordingly, the value of the candidate investment is $1000 to any firm regardless of its residence (or the residence of its investors).[41] That is shown in Table 2.

---

[39] The assumption that there is a global capital market implies that there is no advantage in either raising capital locally or investing capital locally.

[40] If sales from products or services produced from using that asset occur elsewhere, then there is income from another country that is taxed at the proper rate for that country. Because that rate applies regardless of where the company is based, there is no impact on competitiveness, which is a relative concept not an absolute one, because all competitors are affected in the same way.

[41] The present value of the candidate investment, $1000, is calculated as follows. Let the investment's present value be V. If the investor purchases the candidate investment (through a firm) for V, he will receive $1100 in one year. Upon realization, the investor will pay tax at 40 percent on his gain of ($1100-V). Denote the personal tax rate by t. Thus, the investor's tax is ($1100-V)t. And so the amount remaining after payment of tax is $1100(1-t) – Vt. Denote the required after-tax return by r, the investor must receive (1+r)V in one year. Equilibrium, thus, requires that (1+r)V = $1100(1-t) + Vt. Rearranging

Table 2
Territorial Taxation
Individual Income Sourced at Candidate Investment's Location
Value of Candidate Investment in Country B to Firms Located in Each Country

	Country A	Country B	Country C
Tax[42]	40%	40%	40%
Value	$1000 = $1060/1.06	$1000 = $1060/1.06	$1000 = $1060/1.06

It, thus, follows that global adoption of a territorial tax system leads to competitiveness neutrality when businesses are not themselves taxed, but are instead treated as pass-through entities. Moreover, such neutrality can be achieved with different tax rates across countries. Thus, in the example, there is competitiveness neutrality at both the firm and investor levels in spite of each country assessing tax at a different rate.

Assume now that firms are taxed separately from the individuals who invest in them. Moreover, as in the classical corporate tax system used in the United States, assume there are two levels of taxation – both the corporation and individual investors in the corporation are taxed. To keep the arithmetic simple, I assume that individual and corporate tax rates are flat and equal in each country. Thus, in Country A, both the individual tax rate and the corporate tax rate are 25 percent. Similarly, in Country C, both the individual and corporate tax rates are 50 percent. Finally, in Country B, which is still considered to set global market prices, the individual and corporate tax rates are 40 percent.

I further assume that projects undertaken by corporations are only feasible to undertake through corporations. That is to say, corporations compete only against other corporations and not against individuals for projects.[43] In addition, although I assume that Country B is the price setter for global markets, I assume that each country's corporate market is dominated by domestic corporations. Thus, in each country, the before-tax rate of return on corporate investments is just sufficient to provide local investors with an after-tax return of 6 percent.[44] The following table gives the

---

terms and solving for V yields V= $1100(1-t)/(1+r-t). Substituting 6 percent for r and 40 percent for t yields V=$1100(.6)/(.66)=$1000.

[42] The row labeled 'Tax' gives the tax rate that applies to the investment. Because the investment takes place in Country B where the tax rate is 40 percent and because the tax system is territorial, all investors (regardless of their country of residence) will pay tax at 40 percent on their income from the project. Thus, the tax rate in each column is 40 percent.

[43] Because investments through corporations are taxed more heavily than those made directly by individuals, tax considerations lead corporations to abandon those investments individuals can undertake to individual investors in favor of those investments that are not feasible for individuals to make for reasons other than tax.

[44] Throughout this essay, I assume that the marginal source of equity funds is new shares. That is often referred to as the "old" view of dividends. In contrast, the "new" view assumes that the marginal source of investment funds is exclusively retained earnings. The latter view, also called the "trapped equity" view, typically implies that market values for assets held in corporations are below replacement cost. In this

equilibrium before-tax rate of rate, which is also the hurdle rate for new investment, for corporations based in each country. The hurdle rate is the before-tax return a corporate investment must earn in each country in order to provide shareholders with a 6 percent return after paying both corporate and personal taxes.

Table 3
Territorial Taxation
Before- and After-Tax Rates of Return for Corporate Investments in Each Country

	Country A	Country B	Country C
Personal Tax Rate	25%	40%	50%
Corporate Tax Rate	25%	40%	50%
Before-Tax Return	10.67%	16.67%	24%

As is clear from Table 3, the hurdle rate in each country is an increasing function of that country's tax rates. The higher are local tax rates, the higher will be the return on corporate investments at the margin. In equilibrium, then, corporate investments in Country A will earn 10.67 percent, in Country B, 16.67 percent, and in Country C, 24 percent.

Consider now the possibility that corporations from different countries are competing for a candidate investment in Country B. If a territorial tax system taxes both individual equityholders and corporate investors in Country B where the project is located, then all investors who are indirect owners of the candidate investment would be subject to two levels of tax at 40 percent. That is equivalent to an effective tax rate of 64 percent[45] and so all firms and all individual investors would value the project at $943.[46] In effect, the only difference in results when individuals make the investment either directly or indirectly through firms that are not separately taxed and when individuals invest through separately taxed corporations is the effective tax rate in Country B. It is now 64 percent instead of 40 percent. That is not, however, how territorial tax systems currently operate. The individual investors in a corporation are not taxed as if the source of their income is the same as the source of the corporation's income. In other words, source does not pass through to the investor when corporations are separately taxed..

---

essay, I do not examine how taxes impact the competitiveness of corporations located in different jurisdictions assuming that the "new" view is accurate.

[45] The effective tax rate of 64 percent is calculated as follows: 1-(1-.4)(1-.4)=.64.

[46] The present value of the candidate investment, $943, is calculated as follows. If the investor purchases the candidate investment (through a firm) for V, its present value, he will receive $1100 in one year. Upon realization, the firm will pay tax at 40 percent on its gain, ($1100-V). Denote the corporate tax rate by T. Thus, the corporate tax is ($1100-V)T. And so the amount remaining after payment of corporate tax is $1100(1-T) – VT. The personal tax, assessed at rate t, on the amount remaining after payment of the corporate tax is $1100(1-T)t-VTt + Vt. Thus, the amount remaining after the payment of all taxes is $1100-($1100-V)(T+t-Tt). Because the required after-tax return is r, the investor must receive (1+r)V in one year. Equilibrium, thus, requires that (1+r)V = $1100-($1100-V)(T+t-Tt). Rearranging terms and solving for V yields V= $1100(1-T-t+Tt)/(1+r-T-t+Tt). Substituting 6 percent for r and 40 percent for T and t yields V=$1100(.36)/(.42)=$943.

Instead, the individual investor has income from holding shares in a corporation. The source of that income does not generally depend upon where the corporation earned that income. Instead, it depends upon where the corporation is located and where the individual resides.[47] Assume then – as is the current U.S. source rule for dividends – that the individual investor's income is sourced where the corporation is located. That income is then taxed at the local tax rate in the country where the corporation is located. The resulting tax rates that apply to investments made through corporations in each country and the maximum amount that corporations based in each country would be willing to bid for the candidate investment are given in the following table.

Table 4
Territorial Taxation
Individual Income Sourced at Corporation's Location
Value Placed on Candidate Investment for Corporations Located in Each Country

	Country A	Country B	Country C
Personal Tax Rate	25%	40%	50%
Corporate Tax Rate	40%	40%	40%
Value	$971	$943	$917

As is clear from a quick perusal of Table 4, the candidate investment is worth the most to corporations based in Country A and the least to corporations based in Country C.[48] The reason is also clear from Table 4. The personal tax rate paid by investors depends upon where the corporation through which they invest is based – it does not depend upon where the investor resides or the real investment is made. Thus, the personal tax can be thought of as a differential toll charge for using different corporations. The toll charge is lowest for corporations located in Country A – only 25 percent – and highest for those located in Country C – 50 percent. In such circumstances, the tax system is not competitively neutral with respect to firms. Instead, corporations based in Country A have a tax-induced advantage and those based in Country C have a tax-induced disadvantage.[49]

As for the individual investors, the tax system does not encourage or discourage investors from any country. Because such investors pay personal tax at the rate imposed by the country in which the corporation through which they invest is located, they are all willing to offer capital at an after-tax return of 6 percent. Thus, because the total tax is lower when the investment in country B is made through a firm based in Country A, the tax system encourages investors from all countries to invest through firms located in Country A

[47] Where the corporation is located can be a simple matter of where it is incorporated or a complicated facts-and-circumstances determination. Throughout this essay, I assume that a corporation's location is clear.
[48] The values in Table 4 can be calculated using the formula for present value in note [46] *supra* and substituting into that formula the values for the personal and corporate tax rate in Table 4.
[49] In many cases, the toll charge is in the form of a dividend withholding tax.

The discussion above – including the calculations in Table 4 – assumed that the individual investors were taxed on the personal level at the individual tax rate of the country where the corporation through which they invest is located. There is an alternative under current law. The investors might be taxed where they reside. If, for example, the investors' incomes were capital gains instead of dividends, that income under current U.S. law would be sourced where the investor resides, not where the corporation is located.[50] Accordingly, such income would be taxed at the tax rate where the investor resides. Assuming that Country B continues to set market prices, Country A investors will want to invest in such equities (because they earn 7.5 percent, not 6 percent) and Country C investors will want to avoid them (because they earn 5 percent, not 6 percent). In such circumstances, there is not competitiveness neutrality with respect to individual investors. Tax considerations will affect who will be the beneficial or indirect owners of corporate investments. The most likely owners of such securities will be the residents of low-taxed countries because those investors will get the benefit of their low personal home tax rate on investments in foreign securities. However, investors are indifferent to where the corporation in which they invest is located. That is because the corporation's location does not affect the individual investor's tax liability. The resulting valuations for the candidate investment are given in the following table.

Table 5
Territorial Taxation
Individual Income Sourced at Investor's Residence
Value Placed on Candidate Investment for Corporations Located in Each Country

	Country A	Country B	Country C
Personal Tax Rate[51]	40%	40%	40%
Corporate Tax Rate	40%	40%	40%
Value	$943	$943	$943

As can be seen from Table 5, the tax system is competitively neutral with respect to the corporations that directly compete for the candidate investment. No corporation is advantaged or disadvantaged relative to its peers based on its location because of taxes. (In other words, there are no differential taxes based on the corporation's location.) That is because corporations are all taxed based on where the real investment occurs and individuals are all taxed based on where they reside. There is, then, no toll charge based on where the firm is located and so the competitiveness of firms is not affected by where they are located. However, in such a system, the beneficial ownership of investments made through corporations is not competitively neutral. Investors located in low-tax

[50] If the investment is through a derivative – such as a swap – the current U.S. rule is that the income is sourced at the residence of the investor. The connection between the tax rules for derivatives (especially the sourcing rules) and competitiveness warrants further attention.

[51] At the margin, the individual tax rate is 40 percent because investors from Country B are assumed to set market prices. Investors from Country A receive a windfall (an after-tax return of 7.5 percent – 1.5 percent more than they can earn elsewhere) because they are the tax clientele for such investments. Any Country C investors who invest in corporations have a shortfall (an after-tax return of 5 percent – 1.5 percent less than they can earn elsewhere).

jurisdictions have an advantage in investing through corporations whereas those that live in high-tax jurisdictions are at a disadvantage.

In summary, a territorial tax system is competitively neutral with respect to both firms and investors when firms are not taxed separately from their investors, but are instead treated for tax purposes as pass-through entities that pass all tax attributes, including source, through to their investors. In contrast, when firms are taxed separately, and the source of the firm's income is not passed through to the investors in the firm, then a pure territorial tax system will not be competitively neutral with respect to either or both firms and investors. If investors' incomes are sourced where the firms are located (e.g., dividends), then the tax system is competitively neutral with respect to individual investors, but not with respect to firms. In that event, firms located in jurisdictions with a low personal tax rate will have a tax-induced advantage over firms located in jurisdictions with a high personal tax rate. Alternatively, if investors' incomes are sourced where they reside (e.g., capital gains[52]), then the tax system is competitively neutral with respect to firms, but not with respect to individuals. Those individuals who reside in low-tax jurisdictions will enjoy windfalls when they invest in corporate equities, whereas those individuals who reside in high-tax jurisdictions will experience shortfalls.

B. Worldwide Taxation

Assume now that all countries adopt worldwide taxation with unlimited foreign tax credits. In that case, equilibrium requires that the before-tax rate of return in each country is the same. Assume that the before-tax rate of return on noncorporate investments is 10 percent everywhere – the before-tax return in country B with a territorial tax system[53] Investors in Country B will earn 6 percent at home, as with a territorial tax system. They will also earn 6 percent everywhere else. For example, a one-year investment in Country A will earn 10 percent before tax. The investor will pay tax on that return at 25 percent to Country A. With a worldwide tax system, the investor from Country B will report the entire 10 percent before-tax return to Country B, which implies a total tax liability of 40 percent on that income. The investor receives a credit equal to 25 percent of that income for the tax paid to Country A, and so the investor owes an additional tax to the tax authorities in Country B equal to 15 percent of the total before-tax return earned in Country A. That yields a total tax liability of 40 percent on that income, which leaves the investor with an after-tax return of 6 percent on that investment.

Consider a similar investment in Country C. The investor from Country B pays 50 percent tax to the government of Country C. The investor reports the full 10 percent before-tax return to Country B, which yields a tax liability of 40 percent. The investor gets a credit of 50 percent of the before-tax return and so receives a refund equal to 10 percent of the before-tax income earned in Country B (or an offset to other taxes) from

[52] Also, ownership through derivatives gives residence source income.
[53] That was not the case with territorial taxation. With territorial taxation, the after-tax return was 6 percent everywhere.

the tax authorities of Country B. Thus, the investor's net tax liability is again 40 percent and so the after-tax return is again 6 percent. In other words, the Country B investor earns 6 percent after tax wherever it invests.

In contrast, consider an investor from Country A. An investor from Country A will also earn 10 percent on a one-year investment in A. However, such an investor will pay only the 25 percent Country A tax. Thus, such an investor will be left with an after-tax return of 7.5 percent. If that investor makes a similar investment in Country B or Country C, the after-tax return is again 7.5 percent. The higher tax in Countries B and C is offset by tax credit refunds from Country A. The result is similar for an investor located in Country C, except the after-tax return is smaller. It is only 5 percent. See Table 6.

Table 6
Worldwide Taxation
Before- and After-Tax Rates of Return for Investor's from Each Country

	Country A	Country B	Country C
Tax Rate	25%	40%	50%
Before-Tax Return	10%	10%	10%
After-Tax Return	7.5%	6%	5%

As before, I assume that competition for the candidate investment, which is assumed to be located in country B, is among equally efficient business entities located in the three different countries. Once again, these entities compete for that investment by raising funds in a global capital market and by bidding for the right to acquire the investment.[54]

First, consider the possibility that the business entities are not themselves taxed. Instead, the firms are taxed as pass-through entities with all tax consequences (including gross income and the tax paid) passed through to the investors. In that case, because the entities are untaxed, each entity is willing to pay up to 10 percent – the entire gross return – to outside investors in order to obtain the funds to make the investment. That 10 percent rate of return is also the discount rate that each firm will use in evaluating the candidate investment. Thus, each firm will be willing to bid up to $1000 for the investment, as in the following table.

Table 7
Worldwide Taxation
Value of Candidate Investment in Country B to Firms Located in Each Country

	Country A	Country B	Country C
Value	$1000 = $1100/1.1	$1000 = $1100/1.1	$1000 = $1100/1.1

[54] The discussion below assumes that the candidate investment is taxed in the same manner as an investment made with marginal funds. Differentially taxed assets can produce clientele effects and thus interfere with competitive neutrality in a worldwide tax system. Those problems, however, can be avoided if the foreign tax credit applies to implicit as well as explicit taxes. See Knoll, *Taxes and Competitiveness*, *supra* note [6].

Moreover, all investors will be willing to advance funds to any firm, regardless of where it is based, in order to fund the investment at 10 percent. That is because each investor's ultimate tax rate on any investment is a function solely of where that taxpayer resides and does not depend on the location of the investment or the conduit.[55]

Thus, as with a territorial tax system, global adoption of a worldwide tax system is competitively neutral when firms are not taxed directly and the investors are taxed on a pass-through basis. In those circumstances, the different tax rates in each country do not affect the competition to acquire the candidate investment. In effect, the tax rate in the country where the company is located is irrelevant. It does not affect the after-tax cash flow from the candidate investment, and so it does not influence which company will acquire the candidate investment.

Second, consider the possibility that the entities themselves are taxed. That is a realistic assumption for large domestic firms and MNCs, which are usually taxed as Subchapter C corporations or their equivalent. As long as the investor includes the entire before-tax income of the project in income and gets credit for the taxes paid to Country B and any taxes paid to the country where the corporate intermediary is located, then the investor is still willing to accept a 10 percent before-tax return. The corporation will, therefore, use a 10 percent discount rate and so the project is still worth $1000 to all companies. In effect, the firm does not pay taxes inasmuch as the investor's total tax liability, including taxes paid by the firm on his behalf is determined by the investor's home country tax rate. Because that tax rate is invariant with respect to the location of the entity through which the investment is made, all entities are equally competitive. Thus, once again, as long as all tax paid directly by the investor or indirectly by the firm on behalf of the investor is credited to the investor by his country of residence, a worldwide tax system (with an unlimited foreign tax credit) is competitively neutral even with corporate taxes and different tax rates across countries.[56]

That neutrality, however, breaks down once the tax treatment of the investor is separated from that of the corporation. If the tax paid by the corporation is not fully credited by the investor's home country, then the tax system will not be competitively neutral. Thus, continue to assume that there has been global adoption of a worldwide tax system, but now assume that the investor in the corporation does not get credit for the tax paid by the corporation.[57] Instead, the investor gets credit only for the taxes that the investor pays to the country through which the investment is made. The most common form of such a tax would be a dividend withholding tax.

---

[55] Each investor's after-tax return is as in Table 6 regardless of where the firm through which the investment is made is located.

[56] I thank Richard Frensch for pointing this out to me.

[57] This is how the U.S. tax system works unless the investor is a U.S. corporation that owns at least 10 percent of a foreign corporation that pays a dividend. In that case, the U.S. corporation includes the foreign tax paid by the foreign corporation in income and receives a foreign tax credit. This is sometimes called the "indirect" or "deemed paid" foreign credit. See IRC Sections 78 (including tax paid by foreign corporation within dividend) and 902 (extending foreign tax credit to deemed paid taxes.)

Such dividend withholding taxes do not threaten competitiveness neutrality in a world in which every country has adopted worldwide taxation as long as those taxes are fully creditable. In such a regime, it is the non-creditable taxes imposed at the corporate level that prevent competitiveness neutrality. That can be seen through the example.

Assume that a corporate level tax at the corporate level tax is imposed by the country where the corporation through which the investment is made is located. Also, assume that the country in which the investor resides imposes an individual level tax. The investor level tax is invariant with respect to the location of the corporation through which the investment is made, but the corporate level tax is not. Recall that I have assumed that investor- and corporate-level tax rates in each country are the same (although such rates differ across countries). Thus, the corporate and personal tax rates in Country A are both 25 percent. Similarly, those rates are 40 percent in Country B and 50 percent in Country C. Accordingly, an investor from Country A who invests through a corporation resident in Country B will pay personal tax at a rate of 25 percent and corporate tax at a rate of 40 percent. In the example, I assume corporate investments will return 10 percent after payment of the corporate tax, but before payment of the individual tax.[58]

I further assume that the corporate market in each country is dominated by corporations from that country. Thus, corporate investments in Country B will yield 16.7 percent. Similarly, corporate investments in Country A will yield 13.3 percent, while those in Country C will yield 20 percent.[59]

Consider a candidate investment in Country B that companies from all 3 countries are vying to purchase. Assuming every country has a worldwide corporate tax system with unlimited foreign tax credits, then each company's hurdle rate for such an investment is its before corporate tax return given above. Such a return ensures that the investors will earn 10 percent after paying corporate tax (and before paying individual tax). The corresponding values for the candidate investment to corporations located in the three different countries are given in Table 8.

Table 8
Worldwide Taxation
Value of Candidate Investment in Country B to Firms Located in Each Country

	Country A	Country B	Country C
Corporate Tax Rate	25%	40%	50%
Value	$971	$943	$917

As is clear from Table 8, the candidate investment is worth different amounts to different firms depending upon where each firm is located. The candidate investment is worth the most to firms located in Country A and the least to firms located in Country C. The intuition is that the corporate tax operates as a toll charge that investors incur when they

[58] The only investments made through corporations are investments that are not feasible for individuals to make directly.
[59] The equilibrium returns on corporate investments in each country are given in Table 3.

invest in the candidate investment. That toll charge differs depending upon the location of the corporation through which the investment is made.

Although a worldwide tax system with an unlimited foreign tax credit is not competitively neutral with respect to firms, it is competitively neutral with respect to investors. Because investors are taxed at their home country tax rate regardless of the location of the firm in which they invest, all investors are willing to invest in corporate equities so long as they earn a 10 percent return.[60]

The analysis above assumed that all countries provided unlimited foreign tax credits. If the credit is limited and calculated separately for each country, then investments through a firm resident in Country A will incur a 40 percent corporate tax rate, not 25 percent. Such firms will, therefore, only be willing to bid up to $943 – the same amount as firms located in Country B. As for firms in Country C, because their home country tax is higher than the tax in Country B, their taxes and bid prices are unchanged. Thus, they will still be at a tax-induced competitiveness disadvantage.

Another possibility is that each country permits cross crediting of foreign tax credits. That is to say, it allows the income earned in one country to be offset by the tax credits earned in another country. Thus, if a corporation has excess tax credits, it can use those credits to reduce the tax on the investment. In the extreme, the tax on a foreign investment can be reduced for an investor with excess credits to the tax collected by the source country. Thus, if a corporation resident in Country C has excess foreign tax credits,[61] it might be able to reduce the tax on the candidate investment to just the tax collected by Country B – 40 percent. Thus, cross crediting can raise the bid price of such an excess credit firm located in Country C for the candidate investment to $943. Having excess credits will not help a firm based in a lower-tax country. Thus, if the Country A firm had excess foreign tax credits, it would still value the candidate investment at $943 – the value it places on the candidate investment with a limited foreign tax credit that does not permit cross crediting.

Alternatively, a company might have foreign income on which it is paying home country tax. Such companies are said to be excess income. When a country that is excess income earns income abroad that is taxed at a rate higher than its home country tax rate, then the taxes that it pays abroad on such incremental income might be offset dollar-for-dollar by reductions in taxes paid to the home country government. In the extreme, a new investment in a high-tax country can go completely untaxed because the tax paid to the foreign government is fully offset by a reduction in taxes collected by the home country government. Accordingly, assume that the companies in Countries A and C have foreign income on which they are paying home country tax.[62] The value of the candidate

[60] The conclusion that taxes do not affect the choices by investors of which firms to invest breaks down if the foreign tax credit is limited. Investors would then avoid firms based in high-tax jurisdictions.

[61] In order to have excess credits, the Country C firm would have to have earned income in a country with a higher tax rate than its home country tax rate. In the example, that would require additional countries with a tax rate above 50 percent.

[62] That would require the company resident in Country A earn foreign income in a jurisdiction with a lower tax rate than that imposed by Country A.

investment to a company that is excess income can be as high as $1000.[63] As the example makes clear, cross crediting can – but does not always – provide a company with an advantage in competitiveness relative to other firms, from the same or different countries.[64] However, cross crediting will not render a worldwide tax system competitively neutral at the firm level.

In summary, a worldwide tax system is competitively neutral with respect to both firms and individual investors when firms are not taxed, but are instead treated as pass-through entities that attribute all income and credit all taxes to the ultimate investors. In such circumstances, neutrality requires an unlimited foreign tax credit. However, a worldwide tax system (even with an unlimited foreign tax credit) is not competitively neutral with respect to firms when the income earned by the corporation and the taxes it paid are not attributed and credited to the ultimate investors. In order for such a tax system to be competitively neutral, jurisdictions must harmonize their tax rates.[65] If tax rates are not harmonized, then those firms located in low-tax jurisdictions will have tax-induced competitiveness advantages over the firms located in high-tax jurisdictions. However, a worldwide tax system (with an unlimited foreign tax credit) is competitively neutral with respect to individual investors.

C. Mixed and Other Possible Tax Systems

In this Section, I consider the impact on competitiveness of global adoption of other tax systems besides pure territorial taxation (territorial taxation at both the firm and individual level) and pure worldwide taxation (worldwide taxation at both the firm and individual level).

1. Worldwide for Passive Income and Territorial for Active Income

One criticism that is frequently leveled against territorial tax systems is that they allow passive income to escape taxation because such income can be located anywhere and so it can be given whatever source is most advantageous from a tax standpoint. Accordingly, some countries that would be inclined towards adopting a territorial tax system employ a worldwide system for passive income and a territorial system for active income. Such a mixed system can be competitively neutral with respect to both firms and individuals, but it requires certain conditions be met. What those conditions are depends upon whether foreign equity holdings are treated as passive or active income, whether corporate income is treated as passive or active income, and where such income is sourced.

---

[63] The candidate investment will be worth $1000 to a firm with $1000 or more of excess foreign income that is not offset by foreign tax credits. For such a firm, the $400 tax paid to Country B will be offset by $400 of foreign tax credits.

[64] The foreign tax credit position of a company located in Country B would not affect the value of the candidate investment to such a firm because for such a firm the income from the candidate investment is domestic income and no eligible for the foreign tax credit.

[65] It will also require harmonization of various tax rules (such as depreciation schedules) in order to equalize effective marginal tax rates.

Consider first the tax treatment of corporate business income, which is likely to be taxed as active income. If the source of that income is the corporation's location, then the corporate tax system will not be competitively neutral. In that case, each corporation will impose a different toll charge based on its location. Alternatively, if the source of income is where the investment occurs so that the taxing authority is the same regardless of the location of the firm through which the investment occurs, then the corporate tax system can be competitively neutral. That, however, depends upon how individual investors are taxed.[66]

If foreign equity holding are treated as passive (and so are subject to worldwide taxation), then the individual tax system is competitively neutral when there is an unlimited foreign tax credit. If, instead, foreign equities are treated as active (and so are subject to territorial taxation), then whether the individual tax system is competitively neutral depends upon where that income is sourced. If that income is sourced where the corporation resides, then the tax system is not competitively neutral. Companies located in countries that impose high tax rates on such income will be at a competitive disadvantage relative to those located in countries that impose low tax rates. Alternatively, if the income from foreign equities is sourced where the investor resides, then the individual tax system will be competitively neutral.

It, thus, follows that a territorial tax system for active income and a worldwide tax system for passive income can be competitively neutral with respect to both firms and investors. Such a mixed system must treat corporate business income as active and hence subject to territorial taxation. It must also treat individual investors' equity investments as passive and hence subject to worldwide taxation. Finally, the foreign tax credit on that income must be unlimited.[67]

2. Formulary Apportionment

The fifty states that constitute the United States have separate income tax systems with varying tax rates. However, within the United States, taxpayers do not attempt to calculate their income earned within each state. Instead, corporate taxpayers calculate their total U.S. income. They, then, allocate that income across states using a formula based on assets, employees, and sales in each state. The allocation system, referred to as formulary apportionment, avoids the necessity of determining transfer prices, which have long been the bane of international taxation. Of course, similar issues of competitiveness arise across states as across countries (although the tax rate differences are generally smaller). Recently, a system of formulary apportionment has been proposed for use by

[66] The above discussion assumed that all corporate income is active. However, to the extent that corporations have passive income (and the taxes they pay are not eligible for a full credit by the investor's country of residence), then there is an advantage from investing through corporations that are located in countries with a low corporate tax rate. That nonneutrality is similar to the effect from a pure worldwide tax system.

[67] Alternatively, the tax system can treat individuals' incomes from equity securities as passive and subject to territorial taxation, but only if the source of such income is where the investor resides. In that case, there is no need for a foreign tax credit because the income from equities is already domestic source income.

MNCs.[68] Accordingly, this section considers the impact on competitiveness of a system of formulary apportionment. To keep things manageable, I assume that there is no individual level tax.[69] That allows attention to focus on the corporation.

If the same formula is used everywhere, all corporate income will be taxed once and only once. If jurisdictions use different formulas, some income might be taxed twice (or more) and some income might escape tax. Obviously, if different jurisdictions use different formulas, there is ample opportunity for nonneutrality. Consider, then, a system where every jurisdiction uses the same formula. In that case, if the formula allocated all of the income from the candidate investment to the country where the firm is located, then the system would resemble worldwide corporate taxation. That would not be competitively neutral because firms located in low-tax jurisdictions would have an advantage over those located in high-tax jurisdictions.

Alternatively, if the formula allocated all of the income elsewhere, then the tax system would resemble territorial taxation.[70] It will be similar to territorial taxation in that corporate income will be taxed once at a rate other than the rate in the country where the firm is located.[71] Thus, the tax paid on the candidate investment will be independent of the tax rate in the country where the firm through which the investment is made is located. We know from the discussion of territorial tax systems above, that the global adoption of a territorial tax system is competitively neutral. Thus, a system of formulary apportionment that allocated no portion of incremental investments to the corporation's home country can be competitively neutral. It obviously follows that if the formula allocates a portion of the income from a new investment to the home of the firm and part elsewhere, then the tax system will not be competitively neutral. More generally, the more income that the formula allocates away from the home of the MNC, the closer the tax system will come to being competitively neutral.

For many investments, the most likely result is that only a small portion of the income will be allocated to the corporation's home country – likely due to a small increase in employment and the value of some intangible assets – but that most of the income will be allocated elsewhere. Under those circumstances, formulary apportionment will not be competitively neutral, but it likely will come close. That, in turn, implies that a system of

---

[68] Reuven Avi-Yonah & Kimberly A. Clausing, *A Proposal to Adopt Formulary Apportionment for Corporate Income Taxation: The Hamilton Project* (Univ. of Michigan Law & Econ., Olin Working Paper No. 07-009, 2007), *available at* http://ssrn.com/abstract=995202.

[69] As described above, a worldwide tax system with an unlimited foreign tax credit will achieve competitive neutrality at the individual level. Thus, I could assume a worldwide tax system for individuals with a system of formulary apportionment for corporations and achieve the same qualitative results.

[70] I assume that the allocation would be independent of the location of the parent company. Hence, if the economics of the investment are the same with the only difference being the location of the company through which the investment is made, then the tax consequences would be largely the same. There is still some possibility for nonneutrality because the formula might allocate inframarginal income away from their current location towards that of the new investment.

[71] The manner in which the income is allocated among countries other than the residence country might differ from a standard territorial tax system. In other words, the implicit source rules embedded in the allocation formula might differ from a given set of source rules.

formulary apportionment for corporations and worldwide taxation for individuals (with an unlimited foreign tax credit) will likely come close to being competitively neutral.

D. Other Possible Structures

This section expands the analysis above to take into account two new elements of possible transactional structures. Specifically, in this section, I look at the consequences for competitiveness of corporations financing the acquisition of the candidate investment through debt or a lease.

1. Investment through Debt

In the discussion above, I assume that all investments take place through equity, which is taxable at the corporate level. Many investments can be financed in whole or in part with debt. Countries that have a classic corporate income tax allow interest on debt, but not dividends or redemptions, to be deducted from income. Accordingly, because the income from a debt-financed investment is not taxed at the corporate level, the corporate tax is not assessed on debt-financed investments. In effect, debt is a means of avoiding the corporate income tax on debt-financed income.

Whether the tax system is neutral with respect to debt-financed investments will depend on the choice between worldwide and territorial taxation and the source rules. If all countries adopt pure worldwide taxation, then the investor will be taxed at his home country tax rate regardless of where the borrower is located or the investment takes place. Similarly, the corporate borrower will be taxed at the corporate tax rate of the country in which it is located on its net income from any investment. In such circumstances, a worldwide tax system is competitively neutral with respect to 100-percent, debt-financed investments.[72] More generally, debt-financed investments tend to promote competitiveness neutrality at the firm level by stripping income out of the corporation and thus eliminating the toll charge based on the location of the corporation. That is to say, with a worldwide tax system and a classical corporate income tax, debt financing tends to promote competitiveness neutrality by converting the classical corporate tax system into a pass-through regime. And we know from above, that a worldwide tax system is competitively neutral when business entities are not separately taxed.

The analysis is more complicated if the tax system is purely territorial. For such investments the effect of debt financing on competitiveness will depend on the source rule for interest income. For the firm, the tax system is competitively neutral only if the interest paid on the debt is sourced in the same country as the revenue generated by the investment made possible by that debt.[73] If the payee's interest income is also sourced in

[72] Neutrality, however, will require either an unlimited foreign tax credit or a source rule that treated interest as earned in the residence of the payee.

[73] Determining where the income generated by debt financing arises and hence where it is sourced for tax rules is complicated and might be impractical. Tracing debt and interest does not tell you what investments were economically financed by those funds.

the country where the investment generates revenue, then the source rules will operate to pass-through to the investor the income generated by the project funded by debt financing. In that case, a territorial tax system will be competitively neutral with respect to both the firm and the investor for 100-percent, debt-financed investments. More generally, debt-financed investments tend to promote competitiveness neutrality at the firm level by stripping income out of the corporation, thereby converting the classical corporate income tax into a pass-through regime, and we know from above, that a territorial tax system is competitively neutral when business entities are not separately taxed. Conversely, if the investor's interest is sourced at either the payor's or payee's residence, then the tax system will not be competitively neutral with respect to the investor.[74] Competitiveness neutrality, then, would require a harmonization of tax rates on interest income.

2. Capital Leases

The discussion above has equated ownership with use. However, using an asset is not the same as owning that asset. Competitiveness concerns focus on who uses, controls and is exposed to the risk and rewards from an asset, and not simply on who holds title. Looked at from the perspective of modern finance, ownership is just one method of controlling an asset. There are others. One such substitute is a long-term lease, called a capital lease.

Like debt, capital leases tend to operate to remove from the firms that employ them the income on the capital that finances those investments. Because lease payments are deductible, the income generated by leased property is taxed directly to the capital providers without any tax at the firm level. Capital leases tend to operate as pass-through devices for both the firm and the corporate intermediary. Thus, with worldwide taxation, income from lease financed property is taxed at the financier's residence tax rate, which promotes competitiveness neutrality. With territorial taxation, the result depends upon the source rule. If the source is the residence of the lessee, then the arrangement promotes competitiveness neutrality at the firm level, but not at the investor level. Alternatively, if the source is where the lessor uses the property,[75] then leasing tends to promote competitiveness neutrality at both the investor and firm levels by eliminating taxation based on where the corporation is located. [76]

---

[74] The basic U.S. source rule for interest is that it is sourced where the payor resides or in the case of a corporation where it is incorporated.

[75] The basic U.S. source rule is that lease payments are sourced where the property is used.

[76] Leasing is also an effective means of transferring the tax benefits (or disadvantages, if any) from differentially taxed assets to the taxpayers who value those benefits the most (or who can at least cost incur the disadvantages). Thus, for example, aircraft leases are widely used to transfer the tax benefits of ownership, including accelerated depreciation, from tax-exempt, state-owned airlines and private airlines without sufficient taxable income to high-bracket taxpayers who can use the tax benefits, but cannot use the aircraft. Thus, leasing tends to ensure that the value of the tax benefits granted to various kinds of property is equal across users with different tax situations by equalizing the dollar value of the tax benefits across users, such techniques tend to promote competitiveness neutrality. *See* Knoll, *supra* note [4].

V. Application to U.S. Tax Law

This Part applies the analysis developed above to the U.S. tax laws that affect cross-border transactions. There are many, many provisions in the tax law that impact the competitiveness of U.S. firms relative to their foreign competitors. In this Part, I briefly discuss some of the provisions that have the most obvious and direct effects.

However, first, I address the question is the current international tax system competitively neutral. There are several reasons to believe that the current system is not competitively neutral. First, there is no broad consensus on cross-border tax systems. Countries have adopted very different regimes with different economic consequences. Thus, there is no reason to believe that the current hodgepodge of international tax systems results in a tax system that is competitively neutral.

Second, if all countries adopted the current U.S. international tax system, but imposed different rates, the tax system would still not satisfy competitiveness neutrality. There are several aspects of the U.S. international tax system, if adopted globally, that would interfere with competitiveness neutrality at either the firm or investor level. First, the United States has a system of worldwide taxation for domestic corporations. If adopted globally, that system would operate as a differential toll charge on investments through corporations with different tax rates. Second, the United States does not provide an unlimited foreign tax credit. Third, the United States does not attribute foreign corporate income to the U.S. investors who are the beneficial owners of foreign corporations nor does it credit the taxes paid by the foreign corporation to the beneficial owners. Thus, the current U.S. international tax system is a poor model if the goal is achieving competitiveness neutrality. A better model would be a mixed system that combines territorial taxation of active income and worldwide taxation of passive income.

The rest of this Part looks at the current U.S. rules to determine how these provisions affect the competitiveness of U.S. firms' foreign operations. The analysis in this Part is more tentative than above. That is because the comparison is across countries with imperfect and often very different tax regimes. I first consider provisions that tend to disadvantage U.S. firms competing abroad; I then consider provisions that tend to advantage U.S. firms or mitigate their disadvantage.[77] This is an area where much work remains to be done.

First, the United States has a worldwide tax system for taxing U.S. based MNCs. A worldwide tax system implies that U.S. businesses will pay the U.S. tax rate on foreign investments. Because many countries do not have a worldwide corporate tax system the United States' adoption of a worldwide corporate tax system imposes an additional tax on investments made through U.S. corporations that is not imposed on investments made through other entities located elsewhere.

[77] As a baseline to which to draw a comparison, I assume other investors and firms are subject to competitively neutral tax systems. I also assume U.S. investors and firms are price takers.

Second, and closely related to the first, the United States has a higher statutory corporate tax rate than do many other countries. Business groups make much of the high U.S. corporate tax rate relative to other OECD countries. However, usually the mechanism for that disadvantage is left unexplained. The analysis above suggests a specific mechanism. A high U.S. corporate tax rate coupled with a worldwide tax system for corporations will tend to disadvantage U.S.-based MNCs relative to their foreign competitors by raising the former's cost of capital for new equity relative to the latter's. A higher cost of capital will translate into a higher discount rate for new equity-financed investments. That higher discount rate translates into a tax-induced disadvantage for U.S. MNCs.[78] That disadvantage is generally larger, the higher is the U.S. corporate tax rate relative to foreign corporate tax rates.[79]

Third, the United States imposes a dividend withholding tax. Unless reduced by treaty, the tax is a flat 30 percent. When not fully offset by foreign tax credits, the dividend withholding tax operates as a toll charge on investing through U.S. firms and thereby raises the tax cost to foreign investors of investing through U.S. businesses. The dividend withholding tax, thus, raises the cost of capital for U.S. firms relative to that for foreign firms from jurisdictions that do not impose dividend withholding or similar taxes.

Fourth, source rules differ across countries. Inconsistent source rules can cause some kinds of income to be taxed more than once or not at all. Also, some source rules can cause income to be taxed by the United States that might otherwise escape taxation. An example of the latter is the tax source of interest. The United States considers the source of interest income to be the residence of the payor. That means that interest paid by U.S. firms is U.S. source income. Such income is, therefore, subject to taxation in the United States. Unless it fell under the exemption for portfolio interest, that income would be taxed at U.S. rates. That would raise the cost to U.S. firms of debt financing, which would leave U.S. firms at a competitive disadvantage in competition for assets that can be financed indirectly through debt.

Fifth, the United States has a complex set of interest allocation rules. These rules recognize that where an obligation to pay interest is sourced is often arbitrary. The decision by an MNC through which subsidiary it borrows money usually has few, if any, economic consequences, but that decision often has significant tax consequences. Motivated by a desire to protect the tax base, the United States has adopted interest allocation rules which determine how interest deductions will be allocated across borders. The impact of these rules is often to shift interest payments away from the United States and thus to increase U.S source income subject to the U.S. corporate tax. Thus, the effect of such rules is to raise the tax cost of debt financing for U.S. MNCs. By raising the tax cost of debt financing, the interest allocation rules raise the hurdle rate for investments financed in whole or part with debt and thereby reduce the competitiveness of U.S. MNCs.

---

[78] If other countries have territorial tax systems, then the effect is even greater.

[79] When the U.S. tax rate is equal to or lower than the foreign tax rate, then there is generally no disadvantage.

Sixth, the United States has rules that purport to separate leases that will be respected from leases that will not. In contrast with safe harbor leasing, which would treat as a lease practically any transaction called a lease, the existing rules limit the amount of risk that can be transferred from the lessor to the lessee. Because a capital lease is a technique for integrating the corporate and personal income tax and transferring tax benefits, the effect of the restriction is to increase the cost to U.S. firms of using leased assets in their business.

There are also provisions in the U.S. tax law that tend to reduce the disadvantage of the above provisions and possibly provide a competitiveness advantage in some circumstances.

First, the U.S. income tax system allows deferral of U.S. tax on income earned abroad and reinvested in active businesses. The effect of such deferral is to reduce the present value of the U.S. tax on foreign income. Accordingly, such deferral tends to move the U.S. international tax system away from a worldwide tax system and towards a territorial tax system.

Second, the U.S. international tax system is further moved in the direction of a territorial tax system by providing a reduction in taxes on repatriated dividends. The American Jobs Creation Act of 2004 provided a temporary tax deduction for U.S.-based MNCs repatriating accumulate earnings and profits from foreign subsidiaries.[80] The granting of a temporary reduction in the effective tax rate on foreign earnings will encourage U.S. firms to wait for further reductions in the future.[81]

Third, the United States allows the cross crediting of foreign tax credits. The foreign tax credit used to separate each country into a separate basket. Excess credits from one country could not be credited against income from another country. Instead, such credits would be deferred until such time as there was excess income from that same country. If there never was such income, then the excess credits would never be used. When Congress simplified operation of the foreign tax credit, one of the changes was to eliminate separate baskets for each country. As a result, a company that has excess credits from one country can use those credits to offset income from other countries. As noted above, such cross crediting can reduce the hurdle rate for new investments by allowing excess credits to be used. For an MNC with excess credits, it will have a tax-induced competitiveness advantage over competing firms in countries with low-tax rates. Such an advantage might also exist relative to foreign firms. For an MNC with excess income, it will have a tax-induced competitiveness advantage over competing firms in countries with high tax rates. It will also have an advantage over competing foreign firms

---

[80] *See* IRC Sec. 422(a).

[81] For thoughtful econometric studies of the consequences of the American Jobs Creation Act's temporary reduction in the effective tax rate on repatriated dividends, see Jennifer Blouin and Linda Krull, *Bringing It Home: A Study of the Incentives Surrounding the Repatriation of Foreign Earnings Under the American Jobs Creation Act of 2004* (Sept. 21, 2007), *available at* http://ssrn.com/abstract=925348; Thomas Brennan, *Coming Home: Cash-Flow and Market Response to Repatriation*, (May 27, 2008), *available at* http://ssrn.com/abstract=1134040.

from countries with a worldwide tax system that do not permit cross crediting or even those that use a territorial tax system.[82]

VI. Conclusion

In this essay, I have tried to provide a systematic analysis of how global adoption of different possible international tax regimes affects the competitiveness of firms located in different countries and of investors in those firms. The main results are as follows: First, when firms are not taxed separate and apart from the beneficial owners who invest through them, but are instead treated as pass-through entities that pass all tax attributes through to their owners (including the source of their income), then global adoption of either a territorial or worldwide tax system can be competitively neutral with respect to both individuals and firms. In such circumstances, there is no need to harmonize tax rates to achieve competitiveness neutrality. However, a worldwide tax system must provide unlimited foreign tax credits if it is to achieve competitiveness neutrality.[83]

Second, when corporations are taxed separately from their investors, global adoption of either a pure territorial or pure worldwide tax system will not lead to competitiveness neutrality with respect to both investors and firms. Depending on where the investor's income is sourced, pure territorial tax regimes will not be competitively neutral at the firm level (payor sourced – dividends) or the investor level (payee sourced – capital gains). In contrast, a pure worldwide tax regime is competitively neutral at the investor level (assuming unlimited foreign tax credits), but not at the firm level (even with an unlimited foreign tax credit).

Third, a mixed tax regime, similar to the one used today by many countries, that taxes corporations on a territorial basis and individuals on a worldwide basis is competitively neutral with respect to both firms and individuals. Such a tax regime is competitively neutral without the need to harmonize either corporate or investor tax rates. However, such neutrality requires that the worldwide component provide for an unlimited foreign tax credit.[84]

Finally, when viewed at the level of the forest instead of the individual trees, the main conclusion of this essay is that if we want to understand how taxes affect the incentives of businesses to own assets located in various countries and for investors to invest in different businesses, we need to combine an understanding of the economics of cross-border investments with a solid knowledge of how different tax regimes operate. As this essay has shown, the tax consequences of different tax regimes, such as territorial and

---

[82] However, the advantage over firms that are resident in countries that use a territorial tax system assumes that the firm already has other foreign investments. Before making any foreign investments, the expected tax on foreign operations with a worldwide tax system with a limited foreign tax credit cannot be lower than that on a territorial tax system.

[83] In addition, a worldwide tax system must deal with the problem caused by differentially taxed assets by providing extending the foreign tax credit to include implicit taxes as well explicit taxes.

[84] An alternative to a worldwide tax system with an unlimited foreign tax credit is the adoption of source rules that source the income from investments in corporate securities at the investor's residence.

worldwide taxation, critically depend upon whether firms are taxed separately or as pass-through entities, the operation of the source rules, and the structure of real world transactions. There is a great deal of interest today in the impact the current international tax system has on competitiveness and how to design a tax system to improve competitiveness.[85] However, improving the competitiveness of firms and investors from one nation relative to that of others has a beggar-thy-neighbor quality that invites retaliation. Accordingly, there is the potential for large welfare gains from designing and adopting an international tax system that is competitively neutral with respect to both firms and investors. There is much work to be done in that enterprise, but the rewards likely warrant the efforts.

[85] *See* Office of Tax Policy, U.S. Department of the Treasury, *supra* note [5].