

NEW YORK UNIVERSITY SCHOOL OF LAW
COLLOQUIUM ON TAX POLICY
AND PUBLIC FINANCE
SPRING 2009

“Investor Taxation in Open Economies”

Mihir Desai
Harvard Business and NYU Law

April 9, 2009
NYU School of Law
Furman 120
Time: 4:00-6:00pm
Number 12

SPRING 2009
NYU TAX POLICY COLLOQUIUM

(All sessions meet Thursday 4:00-6:00 pm, Furman-120, NYU Law School)

1. January 15 – Daniel Shaviro, NYU Law School. “The Long-Term Fiscal Gap: Is the Main Problem Generational Inequity?”
2. January 22 – Alan Auerbach, Berkeley Economics Department and NYU Law School. “Understanding U.S. Corporate Tax Losses.”
<http://www.nber.org/papers/w14405.pdf>
3. January 29 – Edward Kleinbard, Joint Committee on Taxation. “A Reconsideration of Tax Expenditure Analysis.”
4. February 5 – Amy Finkelstein, MIT Economics Department, “EZ-Tax: Tax Salience and Tax Rates.”
5. February 12 – Dorothy Brown, Emory Law School. “Shades of the American Dream.”
6. February 19 – Yoram Margalioth, Tel Aviv University Law School and NYU Law School. “Employing Statistical Stigma As a Welfare Ordeal.”
7. February 26 – Leslie McCall, Northwestern University Sociology Department. “Americans’ Social Policy Preferences in the Era of Rising Inequality.”
8. March 5 – Michael Doran, University of Virginia Law School. “Managers, Shareholders, and the Corporate Double Tax.”
9. March 12 – David Duff, University of Toronto Law School. “Tax Fairness and the Tax Mix.”
10. March 26 – Emmanuel Saez, Berkeley Economics Department. “Details Matter: The Impact of Presentation and Information on the Take-Up of Financial Incentives for Retirement Saving.”
11. April 2 – Lily Batchelder, NYU Law School. “Savings Incentives with Insurance Objectives: A Bankrupt Approach?”
12. **April 9 – Mihir Desai, Harvard Business School and NYU Law School. “Investor Taxation in Open Economies.”**
13. April 16 – Mitchell Kane, NYU Law School. “Taxation and Global Cap and Trade.”
14. April 23 – Thomas Brennan, Northwestern Law School.

Investor Taxation in Open Economies

Mihir A. Desai
Harvard University and NBER
mdesai@hbs.edu

Dharmika Dharmapala
University of Connecticut
dharmika.dharmapala@uconn.edu

March 2009

**PRELIMINARY AND INCOMPLETE: PLEASE DO NOT CITE WITHOUT AUTHORS'
PERMISSION**

COMMENTS WELCOME

Abstract

In recent years, the world has experienced an unprecedented degree of global financial integration. Increasingly, these cross-border investment flows take the form of foreign portfolio investment (FPI) by individuals and institutions, rather than foreign direct investment (FDI) by multinational firms. Yet, existing international tax policy norms are largely focused on the taxation of FDI. This paper proposes a new principle - global portfolio neutrality (GPN) - for assessing the efficiency of tax policy towards FPI. Unlike existing principles of international taxation that address FDI and worldwide welfare, GPN explicitly addresses national welfare maximization and is derived from a framework that emphasizes risk considerations and portfolio diversification as central motivations for FPI. With respect to outbound FPI, GPN entails imposing the same tax rate on domestic and foreign investment income. With respect to inbound FPI, GPN entails imposing the same tax rate on foreign portfolio investors that they face at home. Examples where this principle is violated in practice are discussed, and possible remedies are proposed. Lessons are drawn for various policy questions, including the much-debated issue of the appropriate taxation of sovereign wealth funds.

Acknowledgments: We thank Mike Devereux, Clemens Fuest, Michael Knoll, Ruth Mason, Richard Sansing, Alfons Weichenrieder, and David Weisbach for helpful discussions on issues related to this paper. Any remaining errors are of course our own.

I. Introduction

In recent years, the world has experienced an unprecedented degree of global financial integration. At the same time, the legal and economic form of international capital flows has undergone a transformation. For decades, the dominant form of capital flows between countries was the acquisition of controlling stakes in foreign firms by multinational firms – known as foreign direct investment (FDI). Accordingly, much attention has been paid to the consequences of these flows on host and home economies and to the appropriate tax policy towards them. In the last decade, the overwhelming attention on FDI appears to be in tension with the increasing dominance of an alternative form of investment - foreign portfolio investment (FPI) – which involves the acquisitions of non-controlling stakes in foreign companies by individual and institutional investors.¹ The growth of FPI indicates that global financial integration has substantially affected the behavior of ordinary individuals and households: today, the typical American family's retirement savings may be invested around the world through vehicles such as pension and mutual funds.

In the late 1970s, FDI constituted over eighty percent of the foreign exposure of American investors and debt instruments constituted nearly eighty percent of the outbound FPI of American investors. As depicted in Figure 1, these ratios have changed dramatically over the last two decades. More recently, FPI has become the dominant vehicle for foreign exposure and equity instruments now constitute nearly eighty percent of FPI.²

Despite the increasing importance of FPI, the principles of international taxation that guide scholars and policymakers were developed in this earlier era, when cross-border investment was much less extensive and almost exclusively took the form of FDI by multinational firms.³ In particular, the notions of capital export neutrality (CEN), national neutrality (NN) and capital import neutrality (CIN) were extremely influential and emerged as guiding lights for taxing capital

¹ Unlike FDI, FPI typically involves the acquisition of only a small interest in the foreign issuer of the security. Under US tax rules (see IRC § 902), the ownership of over 10% of the stock of a foreign corporation is classified as FDI, while ownership of less than 10% is classified as FPI. In practice, however, FDI typically involves much higher levels of ownership than the 10% threshold (often 100% ownership), while FPI typically involves much lower levels of ownership than the 10% threshold.

² That FPI is quantitatively larger does not necessarily imply that tax policy towards FPI is necessarily *more* important than tax policy towards FDI – for instance, it could be the case that multinational firms are more sensitive to taxes than are portfolio investors. However, it does at the very least establish that the taxation of FPI is of considerable importance in its own right.

³ See e.g. Michael J. Graetz “The David R. Tillinghast Lecture: Taxing International Income – Inadequate Principles, Outdated Concepts, and Unsatisfactory Policies” *54 Tax Law Review* 261 (2001).

income in open economies.⁴ Each of these principles seeks to establish a norm of “neutrality,” under which international taxation is structured so that the decisions of firms undertaking international investment mimic as closely as possible along some relevant dimension those decisions that they would have made in the absence of taxes. These norms have recently come under criticism for failing to capture much of what is central to multinational investment decisions. New efficiency benchmarks - capital ownership neutrality (CON) and national ownership neutrality (NON) – have been proposed, placing productivity differences among multinational owners, and the transfers of control induced by tax rules, in the foreground in analyzing the efficiency of tax policy towards multinational firms.⁵ These newer principles, however, are also primarily preoccupied with designing the appropriate taxation of multinational firms.

This paper develops a new framework to analyze policies employed by countries to tax the growing amounts of income generated by foreign portfolio investment (FPI). Surprisingly, there has been relatively little discussion of FPI among scholars of tax policy. Graetz and Grinberg were the first to draw attention to this oversight and have put forward the most comprehensive proposal to adapt international tax rules to these new realities.⁶ They begin with the premise that the appropriate aim of tax policy towards FPI is to maximize national, rather than global, welfare: “U.S. international tax policy should be fashioned to advance the interests of the American people.”⁷ Furthermore, they point out that the taxation of FPI has no consequences for the location of “real” investment – for instance, where factories end up being built – and that the identity of a

⁴ This framework was originally developed in Peggy Brewer Richman *Taxation of Foreign Investment Income: An Economic Analysis*, Johns Hopkins Press, Baltimore (1963) and Peggy Musgrave *United States Taxation of Foreign Investment Income: Issues and Arguments*, Cambridge MA: International Tax Program, Harvard Law School (1969). CEN is the doctrine that the income generated by international investment should be taxed at the same rate regardless of investment location. For example, under CEN, a US-based multinational firm should face the same tax rate whether it builds a factory in the US or in Canada. A system of worldwide taxation with unlimited foreign tax credits satisfies CEN, since then foreign and domestic investments are all effectively subject to the same (home country) tax rate, and firms that maximize after-tax returns under such a system thereby also maximize pretax returns. The principle of CEN was developed with the intention of promoting global welfare, rather than the welfare of any individual country. In contrast, NN is the doctrine that foreign investment income should be subject to home country taxation with only a deduction for foreign taxes paid. The idea behind NN is that home countries promote their own welfare by subjecting foreign income to double taxation, thereby discouraging all but the most productive foreign investments, and retaining investment capital for use at home. Finally, CIN emphasizes that investment income should be taxed at the same rate regardless of the residence of the investor. Pure source-based taxation is consistent with CIN, as long as individual income tax rates are harmonized to ensure that the combined tax burden on saving and investment does not differ among investors residing in different countries.

⁵ See Mihir A. Desai and James R. Hines, Jr. “Evaluating International Tax Reform” 56 *National Tax Journal* 487 (2003).

⁶ Michael J. Graetz and Itai Grinberg “Taxing International Portfolio Income” 56 *Tax L. Rev.* 537 (2003).

⁷ Graetz and Grinberg *supra* note 8 at 557.

corporation's portfolio investors has no impact on the productivity of its assets (unlike in the case of FDI). On this basis, they infer that tax policies that alter the location of FPI (i.e. which assets or countries portfolio investors choose to invest in) have no efficiency consequences. Thus, they argue for a policy of "national neutrality" with respect to FPI. This entails allowing US investors who engage in FPI a deduction (rather than a credit) for withholding taxes imposed by foreign governments on dividends paid out to US portfolio investors by foreign corporations. While Graetz and Grinberg concede that this reform would lead to reduced levels of US FPI, they maintain that this outcome would enhance US national welfare without adverse efficiency consequences.

This paper introduces a new framework that provides an alternative perspective on the appropriate taxation of FPI. This approach emphasizes risk considerations and portfolio diversification, and is based on the after-tax capital asset pricing model (CAPM) that has been studied in the theoretical literature in economics and finance for decades, but has to date had limited impact on discussions of tax policy.⁸ The after-tax CAPM approach is particularly germane for a globally integrated capital market. Economists have long stressed the benefits of risk reduction available through global portfolio diversification, which provides insurance against economic risks that are specific to the investor's home country. However, it is only in very recent times that this potential has begun to be realized.⁹ The framework presented below demonstrates that taxes and diversification benefits interact to determine portfolio choices and market equilibria. The central distinction between this approach and the underlying logic of existing tax policy norms is that diversification benefits and the portfolio choice problem are placed in the foreground, and the primary motivation for FPI is assumed to be risk diversification. In addition to the emphasis on risk, this paper emphasizes the maximization of national welfare, rather than worldwide welfare.

⁸ This approach was first developed by Michael J. Brennan "Taxes, Market Valuation and Corporate Financial Policy" 23 *National Tax Journal* 417 (1970), building on the capital asset pricing model (CAPM) of William F. Sharpe "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk" 19 *Journal of Finance* 425 (1964).

⁹ The benefits of global portfolio diversification arise because movements in the economies and stock markets of different countries are not perfectly correlated – see e.g. Kenneth French and James M. Poterba "Investor Diversification and International Equity Markets" 81 *American Economic Review Papers and Proceedings* 222 (1991). The failure of investors to take full advantage of global diversification opportunities is sometimes labeled the puzzle of the "home bias." While significant, this bias towards home country assets appears to have declined substantially in recent years – see e.g. Dhammika Dharmapala "The Impact of Taxes on Dividends and Capital Structure: Lessons from the 2000's" in Alan D. Viard (ed.) *Tax Policy Lessons from the 2000's*, Washington, DC: American Enterprise Press, forthcoming.

The emphasis on risk and national welfare leads to a new principle of tax policy – global portfolio neutrality (GPN). In the context of outbound FPI (i.e. foreign investment by portfolio investors resident in the US), GPN requires symmetry between the tax rates on domestic and foreign income. Tax asymmetries create incentives for investors to engage in more risk-taking (or equivalently, less portfolio diversification) than is optimal from the perspective of national welfare. Hence, moving towards symmetry will generally increase national welfare. In practice, violations of GPN can arise from a variety of sources, including the existence of tax-exempt investors who are subject to foreign withholding taxes but not to domestic taxation, and partial attempts at integrating corporate and personal taxes that treat domestic dividends more favorably than foreign-source dividends. Moreover, empirical evidence (based on portfolio investors' responses to the treatment of foreign dividends under the 2003 US tax reform) suggests that the resulting portfolio distortions from asymmetries are likely to be large in magnitude.¹⁰

With respect to inbound FPI (i.e. portfolio investment in US assets by foreign residents), GPN implies that a country can maximize its national welfare by taxing foreign portfolio investors at the same rate that they face at home. This principle holds with some caveats in the general case, but holds strictly when foreign investors have access to derivative financial instruments such as equity swaps. Violations of this principle can arise, for instance, when foreign tax-exempt entities are subject to US withholding taxes. This analysis also sheds new light on the appropriate taxation of sovereign wealth funds, a topic that has attracted considerable attention recently.¹¹

The principle of GPN thus applies to both outbound and inbound FPI. Superficially, it appears to resemble the traditional international tax policy norms of CEN and CIN noted earlier.

¹⁰ See Mihir A. Desai & Dhammika Dharmapala, *Taxes and Portfolio Choice: Evidence from JGTRRA's Treatment of International Dividends* (National Bureau of Economic Research Working Paper No. 13281), available at <http://www.nber.org/papers/w13281>.

¹¹ Sovereign wealth funds – i.e. government-owned investment vehicles – have grown rapidly in recent years. For discussions of the appropriate tax treatment of these funds, see Victor Fleischer, *Should We Tax Sovereign Wealth Funds?*, 118 YALE L.J. POCKET PART 93 (2008), <http://thepocketpart.org/2008/11/17/fleischer.html>, Mihir A. Desai & Dhammika Dharmapala, *Taxing the Bandit Kings*, 118 Yale L.J. Pocket Part 98 (2008), <http://thepocketpart.org/2008/11/17/desaidharmapala.html>, Victor Fleischer, *A Theory of Taxing Sovereign Wealth*, 84 N. Y. U. L. Rev. (forthcoming 2009), available at http://papers.ssrn.com/pape.tar?abstract_id=1234410, Ruth Mason *Efficient Management of the Wealth of Nations* (Tax Notes, forthcoming), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1242447, and Michael S. Knoll "Taxation and the Competitiveness of Sovereign Wealth Funds: Do Taxes Encourage Sovereign Wealth Funds to Invest in the United States?" U. of Penn., Inst. for Law & Econ. Research Paper No. 08-28 (2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1291878.

However, GPN is derived assuming that the relevant objective is to maximize *national* welfare, whereas these other norms seek to maximize *global* welfare. In this sense, GPN is more robust in its sphere of application because the real-world policymaking process is more likely to prioritize national rather than global welfare. Second, these norms were originally proposed in a world in which cross-border investment flows primarily took the form of FDI, whereas GPN is intended to apply to portfolio flows. Finally, GPN is derived from an explicit analysis of the efficiency costs of distortions to portfolio choices for risk-averse investors, whereas risk plays no role in traditional tax policy norms.

While it is not focused on issues of enforcement, this analysis also provides a new perspective on the issue of tax evasion in the international context. It is often asserted that international portfolio investors routinely evade taxes imposed by their country of residence on foreign-source investment income (generally by the simple expedient of failing to report some or all of this income to their home government).¹² This paper focuses on deriving optimal principles for the taxation of FPI, rather than on the question of how these rules may be enforced. Nonetheless, the framework presented here suggests new insights into the conceptualization of the effects of evasion, suggesting for instance that observers have not necessarily drawn the most logical conclusions from the claim that evasion is widespread and difficult to eliminate.

Tax treaties play a central role in the study of international tax law. However, this paper does not directly analyze treaties, but rather focuses on the optimal policies for countries to follow unilaterally (i.e. in the absence of coordination with other countries). These unilaterally optimal policies provide the benchmark against which countries determine whether treaties and various alternative treaty provisions will enhance their welfare. Thus, such a benchmark is an indispensable foundation for a better understanding of tax treaties.

Section II of the paper provides a brief review of the policies employed by countries in taxing foreign portfolio income. Section III develops the analytical framework, contrasting the after-tax CAPM approach with the more traditional marginal investor approach. Section IV applies this framework to the analysis of the taxation of outbound FPI, and derives the principle of GPN. Inbound FPI is discussed in Section V, and Section VI concludes.

¹² For example, Graetz and Grinberg (*supra* note 8 at 578) state that: “The major difficulty for any regime of taxing FPI . . . is the widespread underreporting and evasion of home country taxes.”

II. *The Tax Treatment of FPI*

This section provides a brief overview of the tax treatment of income generated by FPI. This description is not by any means comprehensive, but is intended simply to establish the main features of the relevant tax landscape to set the stage for the analysis developed below. The summary distinguishes between the rules governing a typical outbound investor (an individual resident in the US who earns foreign investment income) and the rules governing a typical inbound investor (a foreign resident individual who earns US investment income), and considers three categories of income – interest, dividends, and capital gains. The most important general lesson is that differences between investors’ home country tax status – for instance, whether they are taxable or tax-exempt under the rules prevailing in their home country – and their tax status in the foreign countries where they earn income create the potential for conflicting treatment of a given taxpayer by different governments.

Consider first the case of a US resident who is taxable, and is in the highest tax bracket (currently 35%). Assume that she buys bonds issued by a firm domiciled abroad, and receives \$100 of interest income. As a general matter, governments assert the right to tax income generated within their borders, and so may impose withholding taxes on payments to foreigners. A withholding tax is imposed at a flat rate on the gross (rather than net) income paid to a foreign person. It is required to be withheld at source by the firm or other party making the payment (hence the term “withholding” tax). However, withholding taxes on interest are now uncommon,¹³ so the US investor will typically not face any withholding tax imposed by the foreign government, and only face the 35% tax imposed by the US.

Now suppose that this same US resident buys shares in a foreign firm and receives \$100 of dividend income. Typically, the foreign government will impose a withholding tax on this dividend income. Thus, in the example with the US investor, the foreign government will require the corporation that is paying the \$100 dividend to remit the withholding tax to it. Withholding tax rates vary across countries, but typically range from 30% (in countries that do not have tax treaties with the US) to 15% or lower (in countries that have tax treaties with the US).¹⁴ In addition to paying the foreign country’s withholding tax, the investor would be taxed at 15% by

¹³ See e.g. Graetz and Grinberg *supra* note 8 at 541.

¹⁴ See, e.g., Raymond F. Waeker, *US Taxation of International Dividends Under JGTRRA*, 30 INT’L TAX J. 19, 23-24 (2004).

the US.¹⁵ However, the US generally provides a foreign tax credit (FTC) for taxes paid to foreign governments.¹⁶ Thus, for instance, if the foreign country imposes a 10% withholding tax, she would pay only an additional \$5 in US tax once the FTC is taken into account.¹⁷ The stock in the foreign corporation would also typically generate capital gains income for the US investor. As a general matter, the foreign government would not attempt to tax these capital gains, which would be taxed only by the US (currently at a rate of 15%).

The preceding discussion focuses on a taxable top-bracket US investor. A substantial fraction of US FPI, however, is undertaken by tax-exempt investors, such as individuals investing through pension funds, or by charitable foundations or university endowments. These entities are tax-exempt only under US tax law; generally, foreign governments do not confer tax-exempt status on them. Thus, a tax-exempt US investor would pay the foreign withholding tax on dividends, even though it is otherwise not subject to taxes. Moreover, because the investor is tax-exempt in the US, the FTC is not applicable; the tax-exempt entity has no US tax liability against which to offset all or part of the foreign withholding tax (and the FTC is generally not refundable). Thus, the withholding tax imposed by the foreign government represents the final tax on this income.

Now consider a foreign investor who buys bonds issued by a US corporation. The US imposes no withholding tax on interest paid by US parties to foreigners.¹⁸ However, the foreign investor's home country will typically tax interest income from abroad. For example, if the investor resides in a country that imposes a 25% tax on interest income, then she will pay \$25 tax to her home government. If she had instead bought stock in a US firm, she would receive dividends and capital gains rather than interest. The US generally imposes withholding taxes on dividends paid by US corporations to foreigners. Typically, the withholding tax rates range from 15% or less for treaty countries to 30% for nontreaty countries. Of course, the foreign investor also faces home country taxes, with (in general) a FTC for taxes paid to the US. Like other

¹⁵ Note that the 15% rate was established under the 2003 tax reform. Previously, dividend income was taxed at the usual ordinary rate (i.e. the same rate as wage or interest income).

¹⁶ Revenue Act of 1918, Ch. 18, § 222(a)(1). Note, however, that the FTC is limited to the amount of US tax liability on the foreign income – see Revenue Act of 1921, Ch. 136, § 222(a)(5).

¹⁷ The \$100 dividend would (in this example) result in \$10 being remitted to the foreign government and \$90 being paid to the US investor. The US investor would have \$100 of pretax income, on which the US tax liability would be \$15. However, the US would allow a FTC of \$10, leaving an additional tax liability of \$5.

¹⁸ IRC §§ 871(h), 881.

countries, the US generally does not tax the capital gains of foreigners.¹⁹ Thus, the foreign investor faces only her home country's capital gains tax.

For a foreign investor who is tax-exempt at home (such as a foreign person investing through a pension fund based in her home country), the situation is analogous to that for a US tax-exempt entity. That is, tax exempt status will be recognized only in the home country, so that the tax-exempt foreign investor faces the US withholding tax on dividends as the final tax, but is untaxed on interest and capital gains.

An increasingly important exception to the US withholding tax regime that has been brought to widespread public attention recently relates to sovereign wealth funds (SWFs). SWFs are government-owned investment funds that engage primarily in portfolio investment around the world. Typically, they are funded by natural resource royalties or trade surpluses.²⁰ Section 892 of the Code exempts sovereigns from withholding taxes.²¹ Thus, a SWF would not pay the US withholding tax on dividends received from US corporations. Moreover, given that it is a government-owned entity, it is not in any meaningful sense subject to home country taxation. Consequently, dividends paid by US firms to foreign SWFs completely escape taxation in any jurisdiction.

As is clear from the preceding discussion, the potential for conflicting treatment of the same investor by different governments arises primarily in the case of dividends, because dividend withholding taxes are common. Thus, although the general principles developed below apply to the taxation of all international investment income, the examples will focus on the case of dividends.

III. A Framework for Analyzing Investor Behavior in Open Economies

Understanding the impact of taxation on the behavior of investors in a globally integrated world economy requires a theory that explains both how investors make portfolio choices (i.e.

¹⁹ There is an exception to this generalization in the case of real estate. The Foreign Investment in Real Property Tax Act of 1980 (FIRPTA) requires foreign investors in US real estate to pay U.S. income tax on the net capital gains derived from the disposition of US real property (IRC § 897) – see e.g. Richard Kaplan, *Creeping Xenophobia and the Taxation of Foreign-Owned Real Estate*, 71 GEORGETOWN L. J. 1091 (1983). However, FIRPTA is generally not directly relevant to the discussion here, which focuses on equity and debt FPI.

²⁰ See Fleischer *A Theory of Taxing Sovereign Wealth*, *supra* note 13 for more details, and Desai and Dharmapala *Taxing the Bandit Kings*, *supra* note 13 for further discussion.

²¹ IRC § 892.

choose which assets to hold, and in what proportions) and how these individual portfolio choices are aggregated into a market equilibrium (i.e. how the prices of assets are determined). This theory must accommodate a complex reality in which tax rates differ both across investors and across types of returns to capital. The default theory employed in analyzing these questions for tax policy is the marginal investor approach, which emphasizes the maximization of after-tax returns by investors. This approach is outlined and then contrasted with an alternative framework – based on the after-tax CAPM approach – that emphasizes the role of risk and diversification in the determination of portfolio choices. These two approaches are contrasted using a graphical representation that is adapted to the portfolio choice setting from the analysis of consumer choice.

III.1 The Marginal Investor Approach

The traditional marginal investor approach to analyzing investor behavior and market equilibrium in this type of setting can be illustrated by the standard treatment of municipal bonds.²² Interest on bonds issued by US state and local governments is exempt from US Federal tax,²³ whereas interest paid on other bonds (such as those issued by corporations) is generally taxable. Suppose that US corporations issue bonds that pay a riskless pretax interest rate of 10%. As do many US local governments, Yoknapatawpha County, MS, issues bonds to finance new school construction. Both these types of bonds are issued in a market with two categories of investors – US residents and Hong Kong residents. US residents face a 35% tax rate on interest from US corporate bonds (and hence a 6.5% aftertax rate of return) and a zero tax rate on interest from Yoknapatawpha County's bonds. Hong Kong residents face a zero tax rate on interest from both types of bonds.²⁴

In determining the equilibrium rates of return that are possible in this situation, there are two relevant scenarios. In the first case, Hong Kong investors are marginal, meaning that they hold both types of bonds; since their return on corporate bonds is 10%, this implies that Yoknapatawpha County's bonds must also offer a 10% interest rate (so that Hong Kong investors are indifferent between the two types of bonds). Consequently, US investors face a

²² See, for instance, Myron Scholes, Mark Wolfson, Merle Erickson, Edward Maydew and Terry Shevlin *Taxes and Business Strategy: A Planning Approach*, Pearson Prentice Hall, 3rd ed. (2005) at 130.

²³ IRC § 103.

²⁴ The assumption here is that the government of Hong Kong imposes a zero tax rate on its residents. As discussed earlier, the US withholding tax on interest income is zero.

choice between a 6.5% aftertax return on corporate bonds and a 10% aftertax return on Yoknapatawpha County bonds, and so will only hold the latter.

Alternatively, US investors may be marginal. Since their aftertax return on corporate bonds is 6.5%, this implies that Yoknapatawpha County's bonds must offer a 6.5% interest rate (so that US investors are indifferent between the two types of bonds). Hong Kong investors face a choice between a 10% aftertax return on corporate bonds and a 6.5% aftertax return on Yoknapatawpha County bonds, and so will only hold the former.

As this simple example illustrates, the marginal investor approach predicts extreme specialization by investors. Even in the case of the marginal investor, who is indifferent between assets, the theory is silent on what factors determine the investor's actual portfolio choice. The other stark prediction of the marginal investor approach is that security prices and asset returns depend critically on the identity of the marginal investor. For instance, in the second scenario, the return from Yoknapatawpha County bonds reflects the 35% tax rate faced by the marginal investor (who is resident in the US), and is unaffected by the tax treatment of Hong Kong investors. If the government of Hong Kong were to increase its tax rate on its residents from zero to 10%, there would be no effect on asset prices in the second scenario.

The marginal investor approach is ubiquitous in the study of taxation, but it suffers from several drawbacks. First, risk is assumed to play little to no role in the portfolio choices of investors.²⁵ Second, the extreme specialization predicted by the marginal investor model is not typically observed in the real world, especially in the case of equities. In an open economy setting, where there are considerably greater opportunities for diversification and risk mitigation, these points are correspondingly more important.

III.2 The Portfolio Choice Problem

In order to further consider the merits of the marginal investor approach and the primary alternative, consider the following example. Suppose that there are two countries, the US and foreign country F. In each country, there is a resident corporation. For now, assume that share

²⁵ To some degree, risk can be incorporated implicitly by restricting comparisons to alternative assets, sometimes referred to as "benchmark assets," belonging to a similar risk class. See e.g. Knoll "Taxation and the Competitiveness of Sovereign Wealth Funds" *supra* note 13; while this is framed as an analysis of sovereign wealth funds, it in fact provides a general framework for analyzing the taxation of portfolio investment, using a marginal investor approach. However, this framework provides little guidance for understanding how investors make portfolio decisions about assets that have significantly different risk characteristics.

prices are given at \$10/share for each firm. At the end of the period under consideration, each firm pays a riskless dividend of \$5/share but the share price at the end of the period is uncertain. This uncertainty is captured by the stark assumption that there are only two possible states of the world: in State I, the US firm's shares are worth \$15/share and the F firm's shares are worth zero. In state II, the opposite is true the US firm's shares are worth nothing and the F firm's shares are worth \$15.²⁶ Each state of the world is assumed to be equally likely.

Consider a US investor who has wealth of \$100 that she is allocating between the two risky investments. She can buy a total of 10 shares, but must decide how to allocate this investment across the two firms. To frame the portfolio problem facing this investor, it is useful to construct a diagrammatic representation of this problem that parallels the typical consumer choice problem.²⁷ In this setting, the two axes are not quantities of two goods but wealth in the two states of the world that may arise in the next period. As such, the typical budget line is replaced with one which represents the set of possibilities that are attainable with different portfolio allocations. Figure 2 depicts the consequences of her portfolio choice for her wealth at the end of the period. The vertical axis represents her wealth in State I and the horizontal axis her wealth in State II. The line AB represents her wealth constraint,²⁸ analogous to the budget line in the typical consumer choice problem. If she invests exclusively in the US firm, she does well in State I (with wealth of \$200, consisting of \$50 in dividends and a value of \$150 for her 10 US shares) but poorly in State II (with wealth of only \$50, consisting only of the dividends). This outcome is represented by point A. Point B represents the opposite extreme, where she invests only in firm F (and so does well in state II and poorly in state I). Non-extreme points represent interior solutions to the portfolio problem (where she holds some of each asset). Note that at any point along the line AB, her expected wealth is the same (\$125);²⁹ however, the amount of risk she bears varies.

²⁶ For example, it might be the case that the US economy performs well in state I while the economy of F performs poorly, and *vice versa* in state II. The assumption in the example is that the two stocks are negatively correlated, but the conclusions are similar as long as the two stocks are not perfectly positively correlated.

²⁷ A textbook treatment of the consumer choice problem is provided by Robert S. Pindyck and Daniel L. Rubinfeld *Microeconomics*, Pearson Prentice-Hall, 6th ed. (2005) at 63.

²⁸ The analysis here does not allow for borrowing or short sales. Borrowing would enable the investor to extend the end points of the wealth constraint outwards in each direction.

²⁹ Let x be the number of US share she buys (so that $(10 - x)$ is the number of foreign shares she buys). Recall that each state of the world occurs with probability $\frac{1}{2}$, so her expected wealth is given by the expression:

$\frac{1}{2} [15x + 5x] + \frac{1}{2} [15(10 - x) + 5(10 - x)] = \125 (regardless of her choice of x).

Prior to the introduction of a representation of the investor's risk preferences, it is useful to consider how taxes would change this wealth constraint. In Figure 3, the line CD represents the constraint under a symmetric tax on dividends at a rate of 20% (now, for instance, the maximum after-tax wealth attainable in State I is \$190). Line AD depicts the wealth constraint when there is an asymmetric tax of 20% on foreign dividends, but no tax on US dividends. Line CB depicts the opposite case of an asymmetric tax of 20% on US dividends, but no tax on foreign dividends. Symmetric taxes result in a parallel shift of the wealth constraint, while asymmetric taxes lead to a pivoting of the wealth constraint.

III.2.1 Portfolio Choices in the Marginal Investor Model

In order to derive the investor's portfolio choice, it is necessary to combine the wealth constraint with a representation of her preferences over wealth in each possible state of the world. These preferences can be represented using "indifference curves," each of which links a set of outcomes among which the investor is indifferent. Thus, the investor is indifferent between any two points that lie along a given indifference curve.³⁰ As discussed above, marginal investor models do not consider risk. In the setting of these risky assets, that is equivalent to assuming that the investor is risk-neutral. That is, she cares only about her expected wealth and is not concerned with the resolution of the underlying uncertainty. This assumption of risk-neutrality corresponds to set of linear indifference curves, as depicted in Figure 4, much as the assumption of perfect substitutability of goods corresponds to linear indifference curves in the consumer setting.

Given these indifference curves, there are three possible outcomes, depending on the applicable tax regime. Obviously, the investor prefers more wealth to less in each state of the world, and so will choose a portfolio that lies on the highest attainable indifference curve. Under a symmetric tax (as in line CD) or no tax (as in line AB) the portfolio choice will be indeterminate. With an asymmetric tax on foreign dividends only (as in line AD), she will choose point A and only buy US stock. Similarly, with an asymmetric tax on US dividends only (as in line CB), she will choose point B and only buy foreign stock. Thus, risk-neutrality in combination with differential taxes leads to the extreme portfolio allocation that is characteristic of the marginal investor approach.

³⁰ See Pindyck and Rubinfeld *Microeconomics*, *supra* note 33 at 69.

III.2.2 Portfolio Choices in the After-tax CAPM Model

The extreme specialization of portfolios depicted above contradicts observed patterns in the real world. A more realistic depiction of portfolio choice emphasizes the risk inherent in portfolio choice by considering the case of a risk-averse investor. This approach, known as the after-tax capital asset pricing model (CAPM), has been studied in the theoretical literature in economics and finance for decades, but has to date had limited impact on discussions of tax policy.³¹

With risk-averse investors, the indifference curves, as represented in Figure 5, have the shape that is familiar from the analysis of consumer choice. The curved shape represents the investor's preference for outcomes in which wealth is evenly distributed across states of the world, relative to "feast or famine" outcomes where wealth is high in one state but low in the other. This shape implies that wealth in the two states of the world are not perfect substitutes, and that the risk-averse investor must be compensated for bearing risk in the form of a higher expected wealth.

As Figure 5 illustrates, the portfolio choice is now quite different from that in the marginal investor model. First, interior solutions of mixed portfolios are the rule rather than the exception, as assets provide diversification benefits. For instance, when the wealth constraint is AB, the investor will choose a portfolio that lies on the 45 degree line. Here, risk is eliminated as the investor's wealth is the same regardless of which state of the world eventuates. Second, the introduction of differential taxation does not lead to extreme portfolio choices, specialization, and clienteles. Instead, differential taxes reduce the relative value of securities but taxes are not the exclusive consideration in portfolio choice as diversification remains valuable. Figure 5

³¹ This approach was first developed by Michael J. Brennan "Taxes, Market Valuation and Corporate Financial Policy" 23 *National Tax Journal* 417 (1970), building on the capital asset pricing model (CAPM) of William F. Sharpe "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk" 19 *Journal of Finance* 425 (1964) and others. The after-tax CAPM framework was subsequently developed by Gordon, R. H. and D. F. Bradford (1980) "Taxation and the Stock Market Valuation of Capital Gains and Dividends" *Journal of Public Economics*, 14, 109-136, David Guenther and Richard Sansing "The Effect of Tax-Exempt Investors and Risk on Stock Ownership and Expected Returns" Working paper, available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=883627, Bond, S. R., M. P. Devereux and A. Klemm (2007a) "The Effects of Dividend Taxes on Equity Prices: A Re-examination of the 1997 UK Tax Reform" Oxford University Centre for Business Taxation Working Paper 0701 (2007), available at: <http://www.sbs.ox.ac.uk/Tax/publications/working+papers/Working+Paper+07+01.htm>, and Mihir A. Desai and Dhammika Dharmapala "Dividend Taxes and International Portfolio Choice" Working paper, available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1000680.

shows that the introduction of differential taxes on the investor (such that the wealth constraint is AD) would lead her to choose a portfolio that would include more US stock than it otherwise would as US dividends are taxed more lightly; notably, she does not completely abandon foreign stocks, as she achieves a balance between the tax advantage of US stock and the diversification benefits of foreign holdings.

III. 3. Equilibrium in the Alternative Models

The after-tax CAPM model differs from marginal investor models along two dimensions. First, as described above, interior solutions will be the rule rather than exception, with and without taxes. Second, the introduction of taxes will lead to different market outcomes. In marginal investor models, investors typically specialize in particular assets, so all that matters is the tax that is faced by the marginal investor; if that tax changes, then prices will necessarily change. Notably, the aggregation of individual demand curves is generally not required in order to determine the effects of taxes on market prices. In contrast, an after-tax CAPM framework with risk-averse investors is characterized by the relevance of the average tax rate faced by all investors as market equilibrium is determined in a more traditional manner.

In order to see this, drop the initial assumption that the prices of stocks are fixed, and instead consider how these prices are determined in the market equilibrium. Suppose that, in addition to the US investor whose behavior has already been discussed, there is an investor resident in country F with similar risk-averse preferences. The wealth constraint for the US investor drawn in Figure 2 is based on the assumed structure of share prices. Varying the price of the US stock while holding the prices of other assets, the investor's wealth, and taxes all fixed leads to shifts in the wealth constraint, and to corresponding changes in the US investor's optimal holdings of US stock. This traces out the US investor's demand curve for US stock – how many shares of the asset she would buy at each feasible price. An analogous demand curve can be drawn for the foreign. These demand curves are shown in the left panel of Figure 6. In this example, the foreign investor is depicted as being wealthier and so her individual demand curve lies to the right of that of the US investor. These individual demand curves are aggregated in the right panel of Figure 6 to represent the global demand for US stocks (denoted D^G). This aggregation sums the demand of the US investor and the foreign investor at each feasible price.

The supply of US stock is assumed to be fixed (at S^{US}). The market equilibrium and price for the U.S. firm's shares then are given by the intersection between D^G and S^{US} .

What happens if the US government now introduces a tax on US dividend income earned by the US investor? Assuming nothing else changes, this tax would induce the US investor to hold more foreign stock and less US stock, shifting her demand curve for US stock downwards to the dashed line depicted in the left panel of Figure 6. This shift would be reflected in the aggregate global demand for US stock. The magnitude of the shift in D^G will, in relative terms, be smaller because only one of the two investors is affected by the tax change. As the foreign investor is assumed to be wealthier, the tax rate faced by the foreign investor (on US dividend income) will be relatively more important in determining the equilibrium price than will the tax rate faced by the US investor.

This process of aggregating market demand stands in contrast to the predictions of the marginal investor approach where the price is affected only by the tax rate of the marginal investor. In contrast, when risk-averse investors make portfolio decisions about risky assets, the dividend taxes faced by *all* investors matter. In particular, in a simple formulation of the after-tax CAPM framework, the price of the US stock will depend on a weighted average of the tax rates faced by all investors (US and foreign) who have the ability to buy this asset. The weights are given by each investor's wealth, relative to the aggregate wealth of all investors. Algebraically, the equilibrium price will depend on the expression:

$$\bar{t}_{US} = \frac{t_{US}^{US}W_{US} + t_{US}^F W_F}{W_{US} + W_F} \quad (1)$$

where \bar{t}_{US} is the weighted average tax rate on dividends paid by the US firm, t_{US}^{US} is the tax rate on US dividends faced by the US investor, t_{US}^F is the tax rate on US dividends faced by the foreign investor, W_{US} is the wealth of the US investor, and W_F is the wealth of the foreign investor.³²

³² To establish this, consider the very simple case of linear demand curves in Figure 5:

$$N_{US}^{US} = W_{US}[G_{US} + (1 - t_{US}^{US})X_{US} - P_{US}]$$

$$N_{US}^F = W_F[G_{US} + (1 - t_{US}^F)X_{US} - P_{US}]$$

where N_{US}^{US} is the demand for US stock by the US investor, N_{US}^F is the demand for US stock by the foreign investor, G_{US} is the expected future increase in the value of the US stock, X_{US} is the dividend paid by the US firm, and P_{US} is the price of US stock. Aggregate global demand for US stock is given by the sum $N_{US}^{US} + N_{US}^F$. Equating this sum to the fixed supply of US stock, and rearranging to find the equilibrium P_{US} yields an expression for P_{US} that depends on the average tax rate defined in Equation (1).

This logic appears to stand in contrast to the idea that prices are determined at the margin. Why does the after-tax CAPM framework lead to a role for the *average* tax rate in the determination of asset prices? In this framework, *every* investor is marginal, in the sense of being indifferent among all available assets given the tax and risk environment that she faces. Consider what happens if the US firm were to issue an additional share of stock. Each investor would be equally likely to buy the newly issued stock, conditional on her wealth. This is the relevant margin on which the price of the stock is determined and entails taking account of all investors' tax characteristics.

While the simple example described here only considers two countries, the real world of course consists of many countries. Moreover, for most if not all countries, the wealth of their residents is small relative to aggregate global wealth. Thus, a policy implication that flows from this approach is that, in a setting with globally integrated financial markets, governments generally have only a limited capacity to influence domestic firms' stock prices and cost of equity capital through their taxation of domestic residents. When a government reduces the dividend tax that it imposes on its residents, the impact on the price of domestic firms depends on the wealth of domestic residents relative to aggregate global wealth. Typically, the effect will thus be small. Moreover, to the extent that there is any effect, it will be dispersed around the world and increase the prices of foreign as well as domestic firms.³³

The after-tax CAPM model outlined here has several advantages over other approaches, especially in the international setting. First, the specialization predicted by marginal investor models does not typically characterize individual portfolios. Instead, taxes interact with diversification benefits to produce mixed portfolios. Second, abstracting from risk in portfolio choice problems misses a critical aspect of the underlying problem. Finally, the transition to an open economy setting introduces important additional diversification benefits and the introduction of investor bases that are very large relative to a domestic set of investors. In the open-economy setting, this model has some striking implications for tax policy. In particular, under reasonable assumptions, and in a setting where global financial markets are integrated, it

³³ The extent to which this conclusion can be applied to the US is ultimately an empirical question. However, it would be a reasonable presumption that even US investors' wealth is small in relation to global wealth. This is especially so because what is relevant here is only the wealth of *taxable* investors; a large fraction of US stock market wealth is held by or through tax-exempt entities such as pension funds, university endowments and foundations.

implies that dividend taxes imposed on domestic investors will have little impact on domestic firms' cost of capital. In these circumstances, the primary efficiency issue relates to portfolio diversification benefits. Accordingly, the after-tax CAPM serves as the foundation for devising optimal tax policy rules for outbound and inbound FPI in the subsequent sections.

IV. Taxing Outbound FPI

The following discussion distinguishes between the inefficiencies that arise in taxing outbound FPI (US residents investing in foreign assets) and inbound FPI (foreign residents investing in US assets). While different issues arise in each case, the underlying theoretical framework developed in Section III applies in both cases, and the optimal policy rules that emerge are remarkably similar. The central lesson that emerges from the following discussion is that asymmetries in the taxation of domestic and foreign asset returns lead to inefficiencies that have real welfare consequences. These consequences arise from the portfolio setting of these choices and are distortions that have not been captured in traditional tax policy norms. These distortions suggest a novel welfare benchmark – global portfolio neutrality – that recommends correcting various current asymmetries in the taxation of foreign and domestic asset returns.

IV.1. The Inefficiency of Portfolio Distortions

As argued in Section III, the taxation of domestic investors has limited effects on the price of domestic assets in a small open economy. This does not imply that the taxation of domestic investors has no efficiency consequences. As is well understood, the general level of taxation of investment returns will affect domestic residents' incentives to save. In addition, *differences* in how the returns from different kinds of assets are taxed will influence domestic residents' portfolio choices – i.e. the mix of assets that they hold in their portfolios. Because of the diversification consequences of changed portfolio choices, tax-induced changes in portfolio composition can have important efficiency implications.

To illustrate this point, recall the example in Section III, and consider a wealth constraint such as the line AD depicted in Figure 5. This represents a situation in which the US investor faces an asymmetric tax regime. Assume in particular that a 50% tax is imposed by the US on dividends received from abroad, while no tax is imposed on US dividends. As argued in Section

III, this tax asymmetry will in general induce the investor to tilt her portfolio towards the tax-favored asset (US stock), without completely abandoning the tax-disfavored asset (F stock). For concreteness, suppose that the investor chooses a portfolio where she buys 8 shares of the US firm and 2 shares of the F firm.

How can this outcome be evaluated from the standpoint of maximizing the national welfare of the US?³⁴ For now, assume that there are no withholding taxes imposed by the government of country F. A straightforward formulation of US national welfare would take into account three components: the expected end-of-period wealth of the US investor, the risk borne by the investor to attain that expected wealth, and the tax revenue collected by the US government.³⁵ Given the portfolio assumed above, the investor's wealth will be \$165 in State I and \$75 in State II, so her expected wealth is \$120.³⁶ Tax revenue is \$5 in each state of the world.³⁷ Thus, expected national welfare, is \$125. However, this outcome is associated with substantial risk being borne by the investor given the variability in the investor's wealth across states of the world.

Now consider a tax reform that imposes the same 20% tax on both US and foreign dividends. This situation is depicted by the wealth constraint CD in Figure 5. As discussed in Section III, this tax regime will induce the investor to choose the same portfolio as when there are no taxes – i.e. to buy 5 shares in the US firm and 5 shares in the foreign firm. Given this portfolio, the investor's wealth will be \$115 in either State I or State II, so her expected wealth is \$115, with no associated uncertainty.³⁸ Tax revenue is \$10 in each state of the world.³⁹ Expected

³⁴ The maximization of national welfare is the criterion favored by Graetz and Grinberg, *supra* note 8, and is adopted throughout this analysis.

³⁵ Tax revenue is relevant for national welfare because it can be used to finance government services that are valuable to US residents. An example of a specific formula for US national welfare is the sum of expected investor wealth and tax revenue, minus the variance of investor wealth. However, the policy conclusions do not depend on using this particular formula.

³⁶ This is calculated as follows. In State I, the 8 US shares are worth \$120 (\$15 each) and the 2 foreign shares are worth zero. In addition the investor receives \$40 in US dividends (\$5 per share), which are untaxed. She also receives \$10 in foreign dividends, taxed at 50% (and so receives \$5 after tax). In State II, the 8 US shares are worth zero, and the 2 foreign shares are worth \$30 (\$15 each). As in State I, the investor receives \$40 in US dividends (\$5 per share), which are untaxed, and \$10 in foreign dividends, taxed at 50% (and so receives \$5 after tax). The expected value of \$120 is the mean of \$165 and \$75 (recalling that each state of the world occurs with probability $\frac{1}{2}$).

³⁷ This is calculated as follows. The US government imposes a 50% tax on the US investor's foreign dividends. The US investor earns \$10 of foreign dividends (pretax) in either state of the world, generating \$5 of tax revenue.

³⁸ This is calculated as follows. In State I, the 5 US shares are worth \$75 (\$15 each) and the 5 foreign shares are worth zero. In addition the investor receives \$25 in US dividends (\$5 per share), which are taxed at 20% (so she

national welfare is still \$125, but there is now no risk given that the investor's wealth is identical in either state of the world. By definition, a risk averse US resident is better off obtaining the same expected payoff with a lower level of risk, so this reform clearly improves national welfare.

Why does asymmetric taxation lead to a reduction in national welfare? The simple intuition is that it creates a divergence between the portfolio that is optimal from the investor's private perspective and the portfolio that is optimal from society's perspective. In particular, the investor cares about *after-tax* returns, while society cares about *pretax* returns. This is because the difference – i.e. the taxes paid by the US investor to the US government – are merely a transfer from the perspective of US national welfare. These tax payments are not a loss from the point of view of national welfare. As the investor cares only about after-tax returns, however, she will tilt her portfolio towards tax-favored assets that offer a higher after-tax expected return. This is optimal from her point of view, because the greater risk associated with this unbalanced portfolio is offset by the higher expected after-tax return. From society's point of view, however, the pretax return is what matters, and there is no increase in pretax returns to offset the greater risk. Thus, the inefficiency of asymmetric taxation is that it induces a higher level of risk-taking by the investor than is socially optimal.⁴⁰

IV. 2. The Principle of Global Portfolio Neutrality

The general lesson from this example is that national welfare will generally be higher with symmetric taxes than with asymmetric taxes. Asymmetric taxes induce investors to bear risks they would not have borne otherwise - by holding more of the tax-favored asset than they otherwise would. This is individually rational but the taxes that the investor saves by switching to the tax-favored asset would have been a transfer to the government, rather than a loss to society. As a consequence, society does not benefit from the tax-induced shift in the investor's portfolio. Indeed, her portfolio choice exposes society to greater risk than is needed to generate

receives \$20 after tax and the government receives \$5 of revenue). She also receives \$25 in foreign dividends, taxed at 20% (and so receives \$20 after tax, while the government receives \$5). In State II, the 5 US shares are worth zero and the 5 foreign shares are worth \$75 (\$15 each). In addition the investor receives \$25 in US dividends (\$5 per share), which are taxed at 20% (so she receives \$20 after tax and the government receives \$5 of revenue). She also receives \$25 in foreign dividends, taxed at 20% (and so receives \$20 after tax, while the government receives \$5).

³⁹ This is calculated as follows. The US government imposes a 20% tax on the US investor's dividends. The US investor earns \$50 of dividends (pretax) in either state of the world, generating \$10 of tax revenue.

⁴⁰ This distortion is analogous to the one emphasized in the taxation of labor income where the asymmetric taxation of wage income and leisure leads to inefficiencies that can be corrected by *either* reducing the tax on wages or by imposing a corresponding tax on leisure.

the expected value of the portfolio. The tax policy prescription implied by this analysis is that governments should seek to impose the same tax rate on investment returns earned by their residents, whether these returns are generated at home or abroad – a principle of global portfolio neutrality (GPN) in taxation.

Superficially, this prescription resembles the traditional international tax policy norms of CEN and CIN. These norms require that investors face the same tax rate wherever they invest or that the total tax burden on savings be equalized. There are a number of important differences between GPN and these norms. First, GPN is derived assuming that the relevant objective is to maximize *national* welfare, whereas these other norms seek to maximize *global* welfare. In this sense, GPN is more robust in its sphere of application because the real-world policymaking process is more likely to prioritize national rather than global welfare.⁴¹ Second, these norms were originally proposed in a world in which cross-border investment flows primarily took the form of FDI, whereas GPN is intended to apply to portfolio flows. Finally, GPN emphasizes a completely distinct mechanism from these other norms. GPN is derived from an explicit analysis of the efficiency costs of distortions to portfolio choices for risk-averse investors. In contrast, risk bears no role in traditional norms of efficiency. Said another way, traditional norms emphasize return equalization without incorporating either risk or the portfolio setting while GPN places the riskiness of returns at the heart of the efficiency discussion.

The arguments above assume that US residents value a dollar of personal wealth and a dollar of government services equally, but the logic of GPN does not require this.⁴² In particular, the argument holds even when a requirement of revenue-neutrality is imposed.⁴³ Suppose that instead of taxing both types of dividend income at 20%, the US government taxes both types of dividend income at 10% (the corresponding wealth constraint would be parallel to CD and lie to its right). Then, tax revenue will be \$5 in each state of the world (just as under the asymmetric tax), while the investor's wealth will be \$120 in each state of the world. Thus, the government

⁴¹ See e.g. Graetz and Grinberg, *supra* note 8. But, see Daniel N. Shaviro "Why Worldwide Welfare as a Normative Standard. in U.S. Tax Policy?" 60 Tax. Law Review 155 (2007).

⁴² In practice, governments may spend tax revenues on services that are not valued by the general public, or may waste tax revenues in various ways.

⁴³ In some circumstances, there is an important modification to the general argument if revenue-neutrality is desired. If achieving symmetry entails a revenue loss, then there may be deadweight costs involved in raising the additional required revenue. Then, these social costs of raising revenue would have to be balanced against the benefits of portfolio diversification, leading to an optimal outcome that would move in the direction of symmetry, but may not involve complete symmetry.

will raise the same amount of revenue, while the investor is unambiguously better off (in that she receives the same expected wealth with lower risk).

IV.3. Incorporating Withholding Taxes

When governments seek to maximize national welfare, withholding taxes are potentially important because they effectively transfer money from one government to another. These transfers across governments are irrelevant from a global welfare perspective, but they matter for national welfare. Thus, the principle of GPN may be challenged as ignoring this important dimension of the policy setting. In particular, it may be argued that when the US tax system induces US residents to hold more US assets, this may create a portfolio distortion, but also reduces the amount of tax withheld from US residents by foreign governments. The latter effect represents a gain to US national welfare, because revenue that would previously have been collected by the foreign government is now collected by the US. However, it can be shown that under conditions such as those that prevail in practice, introducing withholding taxes does not fundamentally change the applicability of the GPN principle.

When considering withholding taxes, it is necessary to consider *both* withholding taxes on US investors by foreign governments and withholding taxes on foreign residents imposed by the US. For countries that have tax treaties with the US, a common withholding tax rate (generally no higher than 15%) is typically imposed on dividend income flowing in either direction.⁴⁴ Thus, for most cross-border portfolio flows, the US imposes the same dividend withholding tax on foreign residents that the foreign residents' government imposes on US investors. Returning to our example of the asymmetric tax, assume that both the governments of the US and F impose a 10% withholding tax on dividends paid to foreigners (and allow a foreign tax credit for taxes paid to foreign governments). Then, in the asymmetric tax scenario, 2 shares in the US firm are owned by F residents,⁴⁵ generating \$1 in revenue for the US. This is exactly offset by \$1 of withholding taxes imposed on the US investor by the government of F (on dividends paid on the 2 shares of F stock owned by the US investor). Moving to the symmetric

⁴⁴ See, e.g., Raymond F. Wacker, *US Taxation of International Dividends Under JGTRRA*, 30 *International Tax Journal* 19 (2004).

⁴⁵ Note that in the example, the world is assumed to consist only of two countries (the US and F), and any US shares not owned by US residents must necessarily be owned by residents of F. In a more realistic world of many countries, however, it will still be true that any US shares not owned by Americans must be owned by foreigners.

tax, 5 US shares are owned by F residents, generating \$2.50 in revenue for the US. Again, this is exactly offset by \$2.50 of withholding taxes imposed on the US investor by the government of F. Thus, even when withholding taxes are imposed, moving from asymmetric to symmetric taxes will unambiguously increase US national welfare. The GPN principle will thus hold unless the withholding tax rate that the US can impose on foreigners is substantially lower than the withholding tax rate that foreign governments impose on US residents.⁴⁶

The preceding discussion underscores several assumptions that have been implicit heretofore. First, aggregate equity capital in the U.S. is fixed by fundamentals such as investment opportunities and domestic tax policies. In other words, portfolio reallocations occur without changing the amount of equity investment in a country.⁴⁷ If this assumption was not met completely, then the logic of GPN that emphasizes portfolio distortions would be mitigated by offsetting revenue considerations. Second, this analysis assumes that transferring a dollar from a government to their own citizens happens at zero social cost. Again, costly transfers within a country would offset the logic of portfolio distortions that is emphasized in GPN. Finally, there are no strategic interactions between countries so that all economies can be thought of as small open economies. While Roger Gordon and others have emphasized the possibility of tax policies that are guided by leader-follower dynamics because of large capital exporting countries, economic realities today would suggest that conceiving of all countries as small, open economies, as recently argued by James Hines and Lawrence Summers, would be most relevant.

IV.4. Revisiting the Graetz-Grinberg Proposal

⁴⁶ It might seem that the relative size of countries would also matter to the applicability of GPN. However, it does not, at least to a first approximation. In the example, it is assumed that the US and F have exactly the same economic weight. Suppose instead that the US is 80% of the world economy -- i.e. that US investors hold \$160 in wealth and F investors hold only \$40, and that the US firm issues 16 shares at a price of \$10/share while the F firm issues 4 shares at \$10/share. Then, when portfolios are perfectly diversified, US investors will hold 80% of US stock and 80% of F stock. Thus, 20% of US dividend income will be subject to foreign withholding taxes, while 80% of the F investor's dividend income will be subject to US withholding taxes. Cross-border dividend flows will still be equal in this scenario, and so will withholding tax revenue, unless there is a divergence in withholding tax rates.

⁴⁷ This logic resembles the logic implicit in the CON/NON framework. In the FDI setting, this assumption corresponds either to the idea of reallocations of ownership with no change in investment or with the complementarity of domestic and foreign investment by multinational firms. In the FPI setting, complementarity is not a possibility but it is more feasible that there are other factors which fix the amount of equity investment in an economy.

The foregoing discussion is of particular relevance in analyzing the recent proposal of Graetz and Grinberg to reform the taxation of FPI.⁴⁸ As explained earlier, Graetz and Grinberg argue that the taxation of FPI has no consequences for the location of “real” investment – for instance, where factories end up being built – and that the identity of a corporation’s portfolio investors has no impact on the productivity of its assets, unlike in the case of FDI. Thus, they argue for a policy of “national neutrality” with respect to FPI. This entails allowing US investors who engage in FPI a deduction (rather than a credit) for withholding taxes imposed by foreign governments on dividends paid out to US portfolio investors by foreign corporations. Graetz and Grinberg concede that this reform would lead to reduced outbound US FPI; however, they maintain that this would have no efficiency consequences.

To clarify the implications of this proposal, suppose that the US tax rate on dividends (both foreign and domestic) is 20%, and that both the US and F impose dividend withholding tax at 10% on foreigners. However, instead of allowing US residents a credit for withholding taxes paid to F, under the Graetz-Grinberg proposal the US would merely allow US residents to deduct the withholding taxes they pay to F. Thus, for instance, if the US investor is paid a (pretax) dividend of \$1 by firm F, the government of F will withhold a tax of \$0.10, so that only \$0.90 is actually received by the US investor. Under a foreign tax credit regime, the US would impose a tax of \$0.20, but allow a \$0.10 credit for the tax paid to F. Under the Graetz-Grinberg proposal, on the other hand, the US would allow the investor to deduct the \$0.10 tax paid to F, so that her taxable dividend is \$0.90, and impose a 20% tax (i.e. a tax of \$0.18). Thus, the overall tax rate on foreign dividends is in effect 28% (as the US investor is left with \$0.72 after all taxes from a pretax dividend of \$1), whereas the tax rate on US dividends is 20%.

This situation can be represented diagrammatically by a pivoted wealth constraint such as AD in Figure 5. As shown earlier, this scenario is inefficient, in the sense that national welfare can be unambiguously increased by moving to a symmetric tax regime. In this case, a symmetric tax regime could be achieved by moving from the proposed deduction system to a foreign tax credit regime. This would reduce US government revenue, but (using the argument for the GPN principle above) national welfare would unambiguously increase. If revenue-neutrality is desired, the tax rate on dividends from *both* F and the US can be increased sufficiently to maintain the

⁴⁸ *Supra* note 8.

initial level of revenue, while eliminating the distortion to the investor's portfolio choice. Moving to an FTC regime would also not result in a transfer of revenue to the government of F: for each foreign share owned by the US investor, the F government collects \$0.50 of revenue, regardless of whether the US allows a FTC or merely a deduction (the difference between these systems can be characterized as a transfer between the US government and the US investor, with the F government being unaffected). It is true that the US investor would end up holding more foreign stock under the FTC regime; however, the extra withholding tax revenue this generates for the F government is exactly offset by the extra withholding tax revenue earned by the US government from the correspondingly higher foreign holdings of US stock.

It has long been recognized under the traditional principles of international tax policy that global welfare is best served by allowing a FTC rather than merely a deduction for taxes paid to foreign governments. The analysis in this paper goes further and shows that allowing US investors only a deduction rather than a credit for foreign withholding taxes would reduce the *national* welfare of the US. This is because a deduction system creates higher effective tax rates on foreign relative to domestic dividends and hence distorts portfolio choices. The principle of GPN developed here thus entails a FTC rather than a deduction. This conclusion would be modified only if the US were for some reason forced to impose withholding taxes on foreigners at rates much lower than those imposed by foreign governments on US residents. Then, the negative tax revenue consequences of US FPI would have to be traded off against the positive diversification benefits. Even in these circumstances, however, the Graetz-Grinberg proposal to allow only a deduction for foreign taxes would not be optimal; rather, national welfare would be maximized by a partial credit.

IV.5 Remediating Sources of Tax Asymmetries in Outbound FPI

While the example used above is only a stylized illustration, asymmetries in the taxation of cross-border dividends often arise in practice. This section briefly outlines some of the most important types of circumstances in which portfolio distortions may arise and where the GPN principle may be violated. Various policy alternatives to correct these inefficiencies are discussed.

The most widespread examples of portfolio inefficiencies arise due to the presence of investors who are taxed at preferential rates at home, most notably tax-exempt investors.

Consider a US tax-exempt or tax-favored entity such as a pension fund, university endowment, or charitable foundation. If this entity invests part of its portfolio in a foreign country that imposes a withholding tax on dividends paid to US shareholders, then the entity will face a zero tax rate on US dividends and a positive tax rate on foreign dividends. This gives rise to a pivoted wealth constraint similar to the line AD in Figure 5. As discussed above, this situation gives rise to a distortion in the tax-exempt entity's portfolio choices that violates GPN. Given the large amount of wealth managed by tax-exempt entities, and the importance of these funds to the retirement security and well-being of large numbers of ordinary people, the potential costs of such distortions are sizable.

There are a number of potential solutions to the problem created by domestic tax preferences for certain investors. Most obviously, the universal abolition of withholding taxes would solve this distortion. However, as discussed in Section V below, this is typically not in the unilateral interest of source countries, and so will not happen in the absence of international coordination. International coordination would require mutual recognition (by tax treaty) of the tax-exempt status of these entities. For instance, the US could grant tax-exempt status to Canadian pension funds in exchange for Canada granting tax-exempt status to US pension funds. Such reciprocity is feasible and, indeed, is now effectively implemented for sovereigns through Section 892. However, the considerably more expansive scope for reciprocity required for all tax-exempt investors may require a greater level of coordination than is typically characteristic of this setting.

There are other ways in which governments can eliminate these portfolio distortions unilaterally and the principle of GPN suggests that doing so would raise national welfare. First, modifying the FTC so that it is refundable would eliminate this distortion; a US pension fund would effectively be reimbursed for the withholding taxes that it pays to foreign governments. This would entail a revenue cost to the US government. From the perspective of national welfare, this revenue cost is merely a transfer, as it is simply redistributed to the beneficiaries of the tax-exempt entities.⁴⁹ At the same time, the elimination of the portfolio distortion leads to more diversified portfolio choices, thereby raising national welfare.

⁴⁹ However, this redistribution may raise concerns about fairness, if for instance the savers whose funds these institutions manage are wealthier than the rest of the US population. This concern can be addressed by combining the refundability of the FTC with a general increase in the overall progressivity of the income tax system, in such a way the combination of the two reforms maintains the same after-tax income distribution as prevailed originally.

A less explicit but economically similar approach would be to allow the FTC to become tradable – i.e. to allow US pension funds to sell the right to use their foreign tax payments to other parties (such as US corporations or individuals) with sufficient tax liability.⁵⁰ These solutions also could be implemented through a different approach to cross-border dividend-stripping transactions that effectively involve the sale of FTC's. These transactions have attracted considerable attention as a result of the *Compaq*⁵¹ case.⁵²

Revisiting this case helps illustrate the underlying issues at hand. On September 16, 1992, Compaq bought 10 million shares of a Dutch corporation, Royal Dutch Shell, for \$887.5 million. Compaq held these shares for only about an hour, but thereby became the “shareholder of record” for Shell’s October 1992 dividend (i.e. ownership for the purposes of receiving that dividend was determined during the brief interval in which Compaq was the owner; this entitled Compaq to receive a dividend of \$22.5 million). Shortly afterwards, Compaq sold all its Shell shares for \$868.4 million. Compaq also incurred \$1.4 million in fees and other costs. The Netherlands imposes a 15% withholding tax on dividends paid to foreigners, so when the \$22.5 million dividend was paid to Compaq, \$3.4 million was withheld by Shell and paid to the Dutch government (with the remaining \$19.1 million being received by Compaq). Compaq owed about \$7.9 million in US tax on the dividend (35% of \$22.5 million). However, it received a foreign tax credit of \$3.4 million for the tax paid to the Dutch government. In addition, Compaq suffered a capital loss of \$20.5 million (taking into account fees and other costs as well as the decline in Shell’s price). However, Compaq had a large amount of capital gains from other (unrelated) transactions in 1992, and so was able to deduct the entire \$20.5 million capital loss against its capital gains.

There are a number of complexities in this situation (such as the importance of the fact that Compaq faced symmetric tax rates on dividends and capital gains) that are not germane to

This “distribution-neutral” approach to analyzing policy reforms is developed at length in Louis D. Kaplow *The Theory of Taxation and Public Economics*, Princeton University Press (2008).

⁵⁰ This would be somewhat analogous to the current operation of the Low-Income Housing Tax Credit (LIHTC) – see Mihir A. Desai, Dhammika Dharmapala, and Monica Singhal “Investable Tax Credits: The Case of the Low-Income Housing Tax Credit” NBER Working Paper #14149 (2008).

⁵¹ *Compaq Computer Corp. v. Commissioner*, 277 F. 3d 778 (5th Cir. 2001).

⁵² See Michael S. Knoll, “*Compaq* Redux: Implicit Taxes and the Question of Pre-Tax Profit” 26 Va. Tax Rev. 821 (2007) for an account. The case generated considerable interest among commentators – see also William A. Klein and Kirk J. Stark “*Compaq v. Commissioner* – Where is the Tax Arbitrage?” 94 *Tax Notes* (March 11, 2002) and Daniel N. Shaviro and David A. Weisbach “The Fifth Circuit Gets it Wrong in *Compaq v. Commissioner*” 94 *Tax Notes* (January 28, 2002).

this discussion. The key point is that this transaction transfers tax credits from parties that are unable to use them, such as tax-exempt entities, to a party that is in a position to do so. The former bear the Dutch withholding tax as a final tax, whereas Compaq is indifferent to it, as its US rate is higher than the Dutch withholding rate and it can claim a FTC. This clearly creates the potential for a mutually beneficial arrangement between tax-exempt entities and taxable entities to, in effect, transfer FTCs to the latter.

The Fifth Circuit reversed a lower court decision and upheld the foreign tax credits claimed by Compaq as a result of such transactions. Subsequently, however, Congress enacted a rule (Section 901(k)) requiring a 15-day unhedged holding period for stocks in order for the holder to be eligible for a FTC.⁵³ Clearly, as presumably intended by Congress, this imposes considerable risk on the party seeking to buy FTCs, making it difficult for US tax-exempt entities to find counterparties for the sale of their foreign tax liabilities. The analysis above suggests that partially repealing this provision and creating a safe harbor for cross-border dividend-stripping transactions between tax-exempt and taxable US entities may promote national welfare by enabling more efficient portfolio allocation by US tax-exempt entities.⁵⁴

Tax asymmetries and portfolio inefficiencies also arise from attempts at the partial integration of corporate and personal taxes. For instance, many European countries traditionally granted imputation credits to shareholders for corporate taxes paid by domestic corporations. Under an imputation system, shareholders receive a credit for corporate taxes paid at the firm level. This credit can be used to offset shareholders' personal tax liability on their dividend income. Imputation credits, however, are typically restricted to corporate taxes paid by domestic firms, resulting in a lower tax rate on domestic equity returns than on foreign equity returns. This

⁵³ IRC § 901(k), which reads in part:

"In no event shall a credit be allowed under subsection (a) for any withholding tax on a dividend with respect to stock in a corporation if—

(i) such stock is held by the recipient of the dividend for 15 days or less during the 31-day period beginning on the date which is 15 days before the date on which such share becomes ex-dividend with respect to such dividend, or

(ii) to the extent that the recipient of the dividend is under an obligation (whether pursuant to a short sale or otherwise) to make related payments with respect to positions in substantially similar or related property."

⁵⁴ This would be somewhat analogous to the safe harbor leasing provisions introduced as part of the Economic Recovery Tax Act (ERTA) of 1981. This removed most obstacles for the transfer of tax benefits through leasing arrangements - see Alvin C. Warren, Jr. and Alan J. Auerbach "Transferability of Tax Incentives and the Fiction of Safe Harbor Leasing" 95 *Harvard Law Review* 1752 (1982). This provision proved to be short-lived because of perceived abuses but the leasing market continues to serve the function of transferring tax benefits among parties.

creates a tax incentive to invest in domestic rather than foreign corporations, potentially violating GPN. For instance, the German government would grant imputation credits to German shareholders in German firms, but not for German shareholders in French firms. In addition, the French government would not grant German shareholders of French firms imputation credits for corporate taxes paid by those firms to France. Recent judicial decisions as well as the practical difficulties of implementing such a system have led to a movement away from dividend imputation towards shareholder-level dividend exclusion.⁵⁵

A recent effort by the U.S. to provide for shareholder dividend tax relief illuminates the degree to which asymmetries can have significant effects, and thereby, the degree to which other tax-induced asymmetries of asset returns can lead to the type of portfolio reallocations described hypothetically above. The United States has implemented a system of partial shareholder-level dividend exclusion as part of the 2003 tax reform, known as the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA). The primary theme of JGTRRA was a reduction in the taxation of dividend income. Thus, JGTRRA lowered the tax rate on dividends received by US residents from US corporations to a maximum of 15%. The initial proposal for dividend tax reform made by President Bush would have restricted favorable treatment to US dividends only.⁵⁶ However, the legislation that was eventually passed by Congress extended favorable treatment to most but not all dividends received by US residents from foreign corporations. In particular, JGTRRA established three tests – the “Possessions Test,” the “Market Test,” and the “Treaty Test” – that determined whether foreign dividends qualified for the lower rate.⁵⁷ Most importantly, the Treaty

⁵⁵ Both these practices have, in the European setting, been found by the European Court of Justice to violate the European Union’s nondiscrimination principles. As a result of European Court decisions and other factors, there has been a movement away from dividend imputation towards shareholder-level dividend exclusion. For example, the German tax reform of 2001 abandoned dividend imputation in favor of partial dividend exclusion – see Clemens Fuest and Bernd Huber, “Can Corporate-personal Tax Integration Survive in Open Economies? Lessons from the German Tax Reform” 57 *Finanzarchiv* 514 (2001). On the development of European Court jurisprudence on dividend tax discrimination, see e.g. Michael J. Gractz and Alvin C. Warren, Jr. “Dividend Taxation in Europe: When the ECJ Makes Tax Policy” Harvard Public Law Working Paper No. 07/18 (2007).

⁵⁶ See Reuven S. Avi-Yonah, “The Pitfalls of International Integration: A Comment on the Bush Proposal and its Aftermath” 12 *International Tax and Public Finance* 87 (2005) for a discussion of this proposal.

⁵⁷ Under the first test, corporations resident in a US possession (such as Puerto Rico) automatically qualify, as do corporations resident in certain former US territories that are treated as possessions for tax purposes. Under the second test, dividends from corporations whose shares are traded in the US are also eligible for the favorable dividend tax treatment. This includes, for instance, corporations that are cross-listed in the US, or whose shares are tradable in the US through American Depositary Receipts (ADRs). See e.g. Hale E. Sheppard, *Reduced Tax Rates on Foreign Dividends under JGTRRA: Ambiguities and Opportunities*, 15 *Journal of International Taxation* 14 (2004).

test establishes that dividends from a corporation resident in a country with which the United States has a tax treaty meeting certain criteria qualifies for the lower dividend tax rate.⁵⁸

JGTRRA's favorable tax treatment of dividends was applied to an extensive, but by no means exhaustive, subset of foreign corporations. Dividends from firms located in some significant destinations for US investment – such as Argentina, Brazil, Hong Kong, Malaysia, Singapore, and Taiwan – do not qualify for this favorable treatment. Thus, while JGTRRA's treatment of foreign dividends is clearly preferable to that of most dividend imputation systems, it nonetheless violates the principle of GPN. Moreover, the portfolio responses to JGTRRA's differential treatment of certain foreign dividends appear to have been substantial in magnitude. Desai and Dharmapala conduct an empirical analysis that examines how the location (by country) of US FPI changed after JGTRRA.⁵⁹ They use data on US FPI from the Treasury International Capital (TIC) reporting system, which reports the portfolio holdings of foreign securities by US investors, based on periodic surveys of banks, other financial institutions, securities brokers and dealers, carried out by the Treasury. The distinction drawn by JGTRRA between treaty and nontreaty countries enables a comparison across these two groups of countries. It is important to note that an advantage of this approach is that it controls for any factors that caused changes in the levels of US FPI in general (i.e. for both groups of countries).

Figure 7 illustrates the response of US portfolio investors to JGTRRA. The figure reports the ratio of US equity FPI to aggregate stock market capitalization for the two groups of countries, before and after JGTRRA. Clearly, it appears that US FPI (relative to aggregate stock market capitalization) rose in treaty countries after JGTRRA, while falling in nontreaty countries. A more rigorous econometric analysis, controlling for various other relevant factors, confirms this basic conclusion, and also implies that the portfolio reallocation undertaken by US investors was large in magnitude.⁶⁰ This effect cannot be explained by various potential alternative hypotheses, including differential changes to the preferences of US investors, differential changes in investment opportunities, differential time trends in investment, changed tax evasion behavior, or changes in stock prices associated (or contemporaneous) with JGTRRA.

⁵⁸ The IRS released a list of 52 countries that qualified under the Treaty test in October 2003 - see IRS Notice 2003-69 (“United States Income Tax Treaties That Meet the Requirements of Section 1(h)(11)(C)(i)(II)”).

⁵⁹ See Mihir A. Desai & Dharmika Dharmapala, *Taxes and Portfolio Choice: Evidence from JGTRRA's Treatment of International Dividends* (National Bureau of Economic Research Working Paper No. 13281), available at <http://www.nber.org/papers/w13281>.

⁶⁰ The estimated elasticity of equity FPI holdings with respect to the tax rate is -1.6.

This large response suggests that portfolio investors are highly sensitive to tax rate differences across assets, and hence that the costs associated with portfolio distortions may be substantial.

IV.6 Avoidance, Evasion and Tax Asymmetries

The analysis so far has assumed that taxes can neither be avoided nor evaded. Incorporating tax evasion and avoidance can significantly affect some conclusions. Consider first the case of avoidance. At least in theory, it is fairly straightforward for tax-exempt entities to use derivative financial instruments to avoid foreign withholding taxes. In particular, a “total return equity swap” (TRES) offers exposure to a given foreign stock or portfolio of stocks, without the payment of withholding taxes. A TRES is a derivative financial instrument that works as follows. Suppose an investor would like economic exposure to the stock of corporation XYZ, but does not wish to hold XYZ stock directly. The investor can contract with a counterparty who (in exchange for a fee) promises to pay the investor the total return from XYZ’s stock. This return includes both dividends and capital gains, minus capital losses, hence the term “total return.” Generally, the counterparty will hedge against the risk created by this contract by buying XYZ’s stock. The counterparty treats the payment of the total return to you as a business expense, and so is taxed only on the fee.

For example, suppose that a US pension fund wishes to include Royal Dutch Shell in its portfolio, without paying withholding taxes to the Netherlands. It would contract with a Dutch counterparty who buys Shell stock and pays the US pension fund the total returns. Dividends paid by Shell go to the Dutch counterparty, who (by virtue of being Dutch) is not subject to withholding tax by the Netherlands. Ordinarily, of course, she would be liable for regular Dutch taxes on these dividends. However, because she pays these dividends to the US pension fund as part of the total return from Shell, they are deductible as a business expense. Thus, the Dutch counterparty’s taxable income consists only of the fee paid by the US pension fund. The Dutch withholding tax is thus easily avoided, and the US pension fund’s portfolio decisions are not distorted.⁶¹

⁶¹ Here “portfolio decisions” refer to its true economic exposure, rather than to the legal ownership of assets. To some extent, the fee may act as a “tax” on the US pension fund that discourages it from holding as much Shell stock as it otherwise would. This issue is addressed more fully in Section 5 below.

Despite the obvious advantages of using a TRES, it appears that tax-exempt entities routinely hold stock directly in foreign corporations.⁶² This may be because the transaction costs of equity swaps exceed the burden of dividend withholding taxes, especially given relatively low tax rates and dividend yields. Even so, the apparent failure of tax-exempt entities to avail themselves of a straightforward method of avoiding foreign withholding taxes represents a puzzle that appears not to have been remarked on previously. If equity swaps are the routine vehicle for tax-exempt entities to hold foreign stock, then the portfolio distortions discussed above would be considerably less important.⁶³

Tax evasion is generally agreed to be an important issue in relation to FPI. The extent of its importance, however, is unclear. It is often argued that evasion of home country taxes on foreign portfolio investment income is widespread. For example, Guttentag and Avi Yonah estimate a \$50 billion loss to the US as a result of the evasion of US taxes on foreign investment income.⁶⁴ On the other hand, as discussed above, Desai and Dharmapala find a substantial portfolio response to a change in home country taxation for US investors (under JGTRRA).⁶⁵ If US investors routinely evaded US taxes on foreign portfolio income, then JGTRRA's differential treatment of foreign dividends would be expected to have little impact on the location of US FPI. If US investors do not report their foreign investment income to the US tax authorities, then the only tax they would bear on this income would be the withholding taxes imposed by foreign governments. As JGTRRA did not affect these rates, US investors would have had no reason to reallocate their portfolios in response to JGTRRA. Moreover, information-exchange agreements among governments have become widespread in recent years, presumably exerting some deterrent effect on tax evasion.

⁶² For example, Dhammika Dharmapala and Vikramaditya S. Khanna "Corporate Governance, Enforcement, and For Value: Evidence from India" *U. of Michigan Law & Economics Olin Working Paper No. 08-005* (2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1105732, document direct holdings by the California state employees' pension fund (CalPERS) in Indian firms.

⁶³ The analysis of inbound FPI in Section 5 considers both the cases where equity swaps are routine and where they are impossible.

⁶⁴ Joseph Guttentag, and Reuven S. Avi-Yonah (2006) "Closing the International Tax Gap" in Max Sawicky (ed.) *Bridging the Tax Gap: Addressing the Crisis in Federal Tax Administration*, Washington, DC: Economic Policy Institute.

⁶⁵ See Mihir A. Desai & Dhammika Dharmapala, *Taxes and Portfolio Choice: Evidence from JGTRRA's Treatment of International Dividends* (National Bureau of Economic Research Working Paper No. 13281), available at <http://www.nber.org/papers/w13281>.

To the extent that evasion occurs in this context, it constitutes a potential source of asymmetries that violate GPN. That is, if it is impossible to evade home country taxes on domestic source income but possible to evade home country tax on foreign source income, then foreign income will typically be taxed *de facto* at a lower or zero rate. Thus, the elimination of evasion through information-sharing among governments will tend to promote GPN (as well of course as other policy objectives).⁶⁶

On the other hand, it is sometimes argued that the problem of evasion with respect to international investment income is not merely pervasive but also intractable. For instance, it is claimed that it is impossible to achieve a sufficient degree of information-sharing to deter evasion of home country taxes on foreign income. While it is admittedly silent on questions of enforcement, the framework in this paper provides a new perspective on the appropriate response to a situation where evasion cannot be deterred at reasonable cost. It may appear tempting to conclude that if foreign investment income cannot in practice be taxed, then the government should redouble its efforts to tax *domestic* investment income, and should perhaps tax the latter more heavily to compensate for the inability to tax foreign investment income. However, the principle of GPN suggests otherwise. As the divergence between the *de facto* tax rates on domestic and foreign income grows, the greater is the extent of portfolio distortions and the associated inefficiencies.

Indeed, if it is taken as a premise that evasion cannot be eliminated, then the only available mechanism to achieve GPN would be to lower the tax rate on domestic investment income to the *de facto* rate on foreign income. In the case of dividends, this would entail taxing domestic dividends at a rate similar to the withholding tax rates imposed by foreign governments. As discussed earlier, the applicable withholding tax rate is about 15% for most foreign dividends. Thus, the current US tax rate on domestic dividends (which is 15% in most

⁶⁶ There are, however, some reasons to be less concerned about violations of GPN that bias portfolios towards foreign equities than about asymmetries that create biases towards domestic equities. First, the “home bias” discussed earlier will be exacerbated by asymmetries that encourage domestic holdings, while it will be (at least partially) offset by asymmetries that encourage foreign holdings. Thus, if the home bias is large, there may be efficiency gains from a *de facto* subsidy to foreign holdings. Second, for residents of the typical small open economy, an optimal portfolio would consist almost entirely of foreign assets; thus, the scope for biasing the portfolio further towards foreign assets is very limited (for example, suppose that an Andorran investor would optimally place 99.9% of her portfolio in foreign assets; the efficiency cost of a tax system that induces her to increase this percentage to 100% would be small). The last point, however, applies to a lesser degree to the United States than to other countries, because of its relatively large stock market capitalization.

cases) would approximately achieve GPN in a scenario where evasion of US taxes on foreign income is widespread. In the case of interest income and capital gains, achieving GPN in this setting would entail eliminating the taxation of domestic interest income and capital gains. Using the arguments presented above, this can be shown to increase national welfare in general. However, there are two significant caveats. First, if revenue-neutrality is desired, then (as this tax reduction is large rather than incremental) there may be a significant efficiency cost of raising the lost revenue from other sources; this would have to be weighed against the efficiency gains from tax symmetry. Second, such a policy would obviously have adverse distributional consequences, and so is not necessarily desirable. However, it is possible to envisage combining this reform with an increase in the progressivity of the taxation of wage and salary income, in such a way that the overall after-tax distribution of income is unchanged.⁶⁷

Regardless of the desirability of this particular implication of GPN, this analysis suggests a new perspective on the problem of the evasion of home country taxes on foreign investment income. It is often suggested that this type of evasion is not only widespread, but also so entrenched a practice as to be difficult or impossible to eliminate. Our framework suggests that, *if* this premise is correct, then the appropriate conclusion to draw is that the tax burden on domestic investment income should be reduced (*not* increased) in order to move towards symmetry between the taxation of domestic and foreign income.

V. *Taxing Inbound FPI*

The previous section has analyzed how governments should tax the investment income received by their resident individuals. This section turns to the issue of *inbound* FPI – i.e. how governments should tax the income derived by foreign individuals from the ownership of corporate stock and other assets that are located domestically. The main focus here is on withholding taxes levied by governments on dividends paid by their resident corporations to foreign shareholders.

⁶⁷ This approach reflects the “distribution-neutral” approach to analyzing policy reforms, described in Kaplow *supra* note 7. Whether it is possible to achieve the desired degree of redistribution through the progressive taxation of wage and salary income alone (along with the taxation of dividends at a flat rate) is ultimately an empirical question. There is some evidence, however, that income inequality in recent decades in the United States is increasingly attributable to inequality in wage and salary income, relative to the case in the past (when income inequality reflected a highly skewed distribution of capital income) – see Thomas Piketty and Emmanuel Saez “Income Inequality in the United States: 1913-1998” 118 *Quarterly Journal of Economics* 1 (2003).

The analysis begins by drawing on the theoretical framework developed in Section III above to elucidate the implications of withholding taxes for equity prices and the cost of capital for domestic firms. A basic conclusion is that withholding taxes have no impact as long as they are set no higher than the tax rate faced by the foreign portfolio investor in her home country. However, withholding taxes in excess of this rate will lead to reduced stock prices for domestic firms, and thereby raise their cost of capital (which ultimately results in lower levels of real domestic investment and lower wages for domestic workers). Thus, a central principle of taxing inbound FPI is that governments should set withholding taxes at the same rate that the foreign investor faces at home. There are various caveats to this principle in the general case, but it is reinforced in a setting where foreign investors can easily avoid high withholding taxes through the use of equity swaps. In this case, governments (of small open economies) cannot significantly influence domestic firms' cost of capital through their withholding tax rate, but will maximize the revenue collected by setting withholding tax rates equal to the rates that foreign investors face at home.

This principle is essentially identical to GPN (derived in Section IV); however, it stems not from a concern with foreigners' diversification benefits *per se*, but rather from concerns about revenue and domestic firms' cost of equity capital. Implementing this principle requires that governments set different withholding tax rates for heterogeneous foreign investors. Violations of GPN for inbound FPI generally arise in cases of tax-exempt investors, such as pension funds and sovereign wealth funds. In conclusion, some lessons are drawn for the taxation of these types of entities.

V.2 Withholding Taxes, Equity Prices, and the Cost of Capital

As discussed in Section II, governments routinely impose withholding taxes on dividends earned by foreign investors. What does the theoretical framework developed in Section III imply about the efficiency consequences of these taxes? To establish a benchmark case, assume initially that foreign investors cannot easily avoid withholding taxes, and that they also cannot evade home country taxes on dividends. Suppose also that the foreign investor's home country allows a FTC for US withholding taxes; as it was shown in Section IV that allowing a FTC generally promotes national welfare, this appears to be a reasonable assumption.

Figure 8 depicts the consequences of different rates of withholding tax. Here, t_w is the withholding tax rate imposed by the US, while t_{US}^F is the foreign country's dividend tax rate on dividends paid to its residents by US firms. Recall that Equation (1) establishes that (in a globally integrated world economy) the dividend tax burden facing US firms is a weighted average of the asset-specific tax rates facing investors around the world on their US dividends. As long as t_w is less than t_{US}^F , the relevant dividend tax burden will be given by Equation (1), and the price of US stock will be independent of t_w . The only effect of the withholding tax is to redistribute revenue from foreign treasuries to the US government.

If t_w exceeds t_{US}^F , however, then it becomes the relevant tax rate facing foreign investors in US firms. The equilibrium price of US stocks will now depend on the weighted average tax rate:

$$\bar{t}_{US} = \frac{t_{US}^{US}W_{US} + t_w W_F}{W_{US} + W_F} \quad (2)$$

where \bar{t}_{US} is the weighted average tax rate on dividends paid by the US firm, t_{US}^{US} is the tax rate on US dividends faced by the US investor, t_w is the tax rate on US dividends faced by the foreign investor (i.e. the withholding tax rate imposed by the US), W_{US} is the wealth of the US investor, and W_F is the wealth of the foreign investor. Suppose that US wealth is small relative to the wealth of the rest of the world. Then, \bar{t}_{US} will depend primarily on t_w and any further increases in the US withholding tax will lead to significant declines in the price of US stock, as shown by the equity price curve in Figure 8. In the theoretical framework developed in Section III, any increase in t_w (once it already exceeds t_{US}^F) will induce foreign investors to hold less US stock, but will not induce them to abandon US assets completely. Thus, the withholding tax will raise revenue even when t_w exceeds t_{US}^F , but will do so at a diminishing rate as foreigners switch away from US stock. This yields the revenue curve shown in Figure 8.

Why does it matter if high withholding taxes reduce the price of US stock? The fundamental reason is that the price affects how much financing a firm can obtain by issuing shares. The higher the price, the lower is the cost of raising equity capital. Moreover, the consequences of changes in the cost of equity capital also affect US workers. The mechanism through which this occurs is shown in Figure 9. The upper panel of Figure 9 depicts the marginal product of capital. Here, capital should be interpreted as "real" capital (e.g. how much machinery

firms install in their factories or how many computers are provided by firms to their employees). The marginal product (i.e. how much extra output is produced by using an additional machine or computer) provides a measure of the rate of return to real capital investment. Firms must, however, raise funds to finance these real investments. When withholding taxes increase and the price of US stock falls, the implied rate of return increases (i.e. the marginal product required to justify a new investment rises). For instance, suppose that equity prices fall and the required rate of return increases from 10% to 16%, as shown in Figure 9. Then, the amount of real capital investment (shown on the horizontal axis) will fall, and there will be fewer machines, computers and other forms of physical capital in the US economy. Note that the marginal product of capital is a downward-sloping curve because additional units of machinery encounter diminishing returns.

The implications for workers are shown in the lower panel of Figure 9, which depicts the marginal product of labor (the extra output produced by the use of an extra worker). This is an upward-sloping curve, because workers are more productive when they have a greater number of machines or computers to work with. A decline in the amount of physical capital will make workers less productive. In a perfectly competitive labor market, equilibrium wages are determined by workers' marginal productivity; thus, workers' wages will fall, and they will bear part of the burden of withholding taxes on foreign shareholders.

The general lesson is thus that the US should set $t_w = t_{US}^F$; if the withholding tax rate is below the foreign rate, there is an opportunity to collect additional revenue without affecting investor behavior, while if the withholding tax rate is above the foreign rate, the cost of capital for US firms will rise. The principle that $t_w = t_{US}^F$ is consistent with the broader notion of GPN, as it leaves the foreign investor facing the same tax rate at home and abroad. However, in the setting of inbound FPI, there are some caveats. To the extent that a country's stocks offer unique diversification benefits that are unavailable elsewhere, high withholding tax rates will not completely drive out foreign investors (though they will of course switch away from US assets to some degree). Thus, some of the burden of US withholding taxes will be borne by foreigners (at the same time that US workers also bear part of the burden). It may then be optimal to set $t_w > t_{US}^F$ if the deadweight losses from other sources of revenue (such as taxing US workers directly) are sufficiently high.

V.3 The Case of Equity Swaps

The principle derived above for taxing inbound FPI is reinforced when foreign investors can readily access total return equity swaps, the derivative instrument introduced in Section IV. Under this assumption, foreign investors will never actually pay a withholding tax that exceeds their home country tax liability. Whenever $t_w > t_{US}^F$, foreign investors will obtain their desired exposure to US stocks through equity swaps rather than through direct holdings of US stock. This has two significant implications, both illustrated in Figure 10.

First, the price of US stocks (and hence the cost of equity capital for US firms cannot change as a result of withholding taxes. The price of US stocks is fixed at the level implied by the weighted average dividend tax rate characterized in Equation (1). If the US seeks to impose a withholding tax that exceeds the foreign investor's home country tax rate, the investor will no longer hold US stock directly. The tax rate that is relevant for the foreign investor's decision of how much US stock to hold indirectly through equity swaps is always the home country tax rate (note that income from derivative instruments is typically deemed to be sourced in the investor's country of residence). Second, it is still possible for the US to collect revenue from foreign investors as long as the withholding tax rate does not exceed the foreign rate. However, a withholding tax rate that exceeds the foreign rate will result in no revenue being collected (as foreign investors switch to equity swaps).

As the cost of capital for domestic firms is unaffected by withholding taxes, the only relevant consideration is revenue. Setting withholding tax rates below the foreign rate leaves scope for collecting additional revenue while leaving investor behavior unchanged. Setting withholding taxes above the foreign rate will eliminate all revenue. Thus, the optimal policy is to set $t_w = t_{US}^F$. This principle holds regardless of the deadweight loss from other forms of taxation.

Even if equity swaps are widespread, they may involve transactions costs that are greater than those for direct holdings of stock. These transactions costs (such as the fees paid to counterparties) may act as an implicit "tax" on the foreign investor, and so raise the cost of equity capital for domestic firms. Thus, governments may have an incentive to put in place policies that do not discourage direct holdings of stock by foreigners, in order to avoid these transaction costs. For example, in a frictionless world, it would not matter whether the US

imposed a zero withholding tax on foreign tax-exempt investors, or a 60% withholding tax on these entities. In either case, revenue would be zero. Faced with a 60% withholding tax, these investors will switch to holding US stocks solely through equity swaps. In a frictionless world, they would hold the same amount of US stock. However, in reality, the fees they pay to US counterparties (and any other transactions costs they face) will in essence replace the t_w term in Equation (2), so the price of US stocks will be lower than when $t_w = 0$ (to an extent that depends on how much wealth is controlled by foreign tax-exempt entities). For this reason, the US should prefer the zero withholding rate to any positive rate, even though both would generate zero revenue.

An intriguing question raised by the role of equity swaps in this analysis is whether the results are dependent on the current tax treatment of derivatives, and whether alternative tax rules for derivatives income affect the analysis? For example, it may at least in theory be feasible for governments to require their residents who act as counterparties to equity swaps to withhold dividend taxes on any “dividend-like” payments (such as the dividend component of the total return in a TRES). While this may be feasible, it is likely to be cumbersome. Moreover, the parties may be able to avoid such a tax by relabeling the dividend payment or by switching to equity swaps that include only the capital gains returns with some appropriate adjustment to the fee.

Finally, a general implication of this analysis is that the source country should vary its withholding tax rate in accordance with the foreign investor’s home country rate. This is at variance with current practice, which generally involves a common withholding tax rate imposed on all foreign investors from a given country (with only limited exceptions such as that for sovereigns). Clearly, imposing varying withholding taxes on different investors from the same country would add some administrative burden. However, US firms that currently pay dividends to foreign shareholders must keep track of these shareholders’ country of residence, as withholding taxes vary by country. Thus, it is unlikely that the added burden of keeping track of individual-specific home country tax rates would be overwhelming.

V.4 The Case of Sovereign Wealth Funds

The main source of potential violations of GPN occur with foreign entities that are tax-exempt at home. Consider, for instance, a Dutch pension fund that invests in US stock. It will pay US withholding taxes on dividends it receives from US firms, but will have no tax liability in the Netherlands (and so no way to offset its US tax payment with a Dutch FTC). The possible remedies are very similar to those discussed in Section IV, including mutual recognition of tax-exempt status and refundability or tradability of FTCs.

One particularly noteworthy example of foreign entities that are tax-exempt at home are sovereign wealth funds (SWFs). The taxation of SWFs has attracted widespread interest recently. Fleischer has argued that Section 892 confers an advantage on SWFs relative to private foreign investors, and violates a principle of “sovereign tax neutrality” (that sovereign entities should face the same tax rate on investments as non-sovereign entities).⁶⁸ Desai and Dharmapala point out that this conclusion depends on the tax treatment of the benchmark asset: if SWFs are tax-favored on all or most of their potential investments, they will not necessarily be favored investors in US stock.⁶⁹ Knoll generalizes this discussion, considering a variety of possible benchmark assets.⁷⁰

The principle of GPN sheds new light on this debate. In particular, it suggests that because SWFs are tax-exempt (by definition) at home, the US would maximize its national welfare by imposing a zero withholding tax on SWFs. This represents a straightforward application of the more general argument made above for GPN. If the US imposes a positive withholding tax on SWFs (for instance, by repealing Section 892), then there are two possible scenarios. If equity swaps are unavailable, SWFs will reduce their holdings of US stock. If equity swaps are available to SWFs, they will hold US stock only through equity swaps. The fees and other transactions costs will, however, reduce their appetite for US stock. More significantly, in both cases, the weighted average tax rate faced by investors in US stocks would increase, thereby lowering the value of US corporations and raising their cost of equity capital. The magnitude of

⁶⁸ See Fleischer *supra* note 13.

⁶⁹ Desai and Dharmapala *Taxing the Bandit Kings*, *supra* note 13. There is an analogy here with the long-standing debate concerning the Unrelated Business Income Tax (UBIT) imposed on nonprofits, especially with the question of whether, absent the UBIT, nonprofits would be in a tax-advantaged position relative to for-profits in undertaking business activity. See, e.g., Henry B. Hansmann, *Unfair Competition and the Unrelated Business Income Tax*, 75 VA. L. REV. 605 (1989); Michael S. Knoll, *The UBIT: Leveling an Uneven Playing Field or Tilting a Level One?*, 76 FORDHAM L. REV. 857 (2007); Susan Rose-Ackerman, *Unfair Competition and Corporate Income Taxation*, 34 STAN. L. REV. 1017 (1982).

⁷⁰ Knoll, *supra* note 13.

this effect would most likely be small, given that the fraction of global wealth controlled by SWFs (while increasing) is relatively small. However, inflicting even a small adverse effect on the US economy seems difficult to justify, at least on tax policy grounds, especially as there is zero revenue collected (when equity swaps are available). Returning to a zero withholding tax on SWFs would, in general, raise US national welfare.

By a remarkable coincidence, Section 892 happens to maximize national welfare by setting the tax on SWFs to zero. The argument for a zero withholding tax, however, applies not just to SWFs but to foreign tax-exempt entities in general. Thus, the apparently favorable treatment of SWFs should be seen not as an anomalous aberration, but rather as an example of how all foreign tax-exempt entities should be taxed. That is, US national welfare would be enhanced if the tax-free treatment of SWFs were extended to other foreign investors that are tax-exempt in their home countries.

V.5 The Impact of Evasion

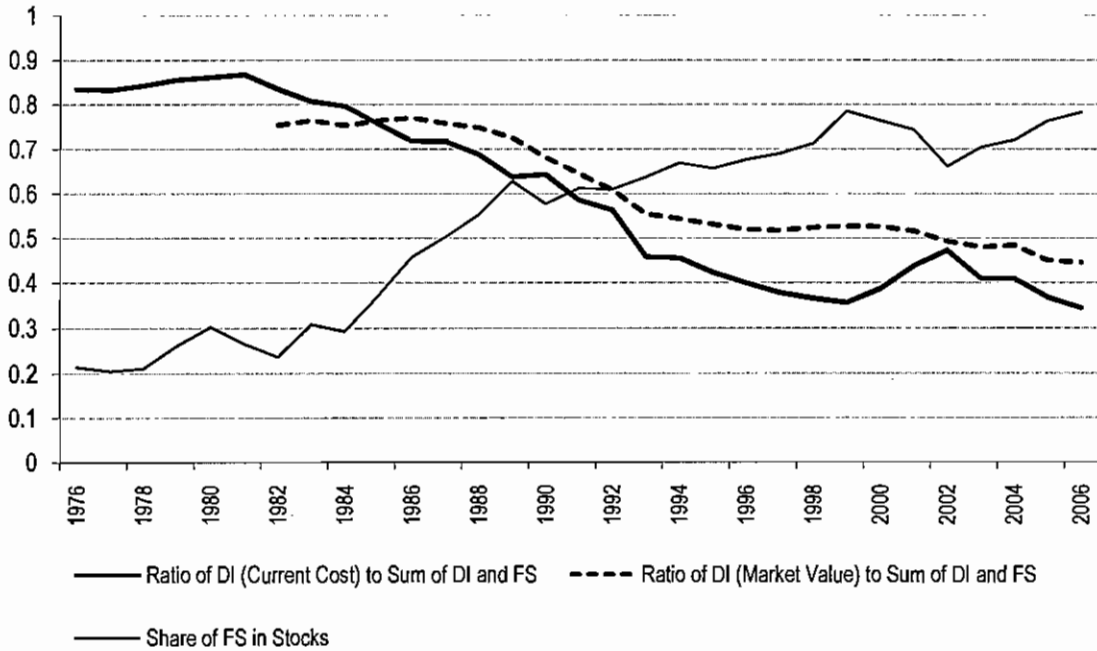
As discussed earlier, it is often claimed that portfolio investors fail to report foreign income to their home governments, and hence evade home country taxation of foreign investment income. Thus, it is important to consider the possibility that foreign investors in the US who are legally taxable in their home countries actually face a zero *de facto* home country rate due to evasion. An intriguing implication of GPN in this setting is that source countries should impose zero withholding taxes on foreign investors who are evading home country taxes. The logic here is identical to that for a tax-exempt foreign entity, except that the investor's tax "exemption" is obtained illegally.

For example, when a French individual invests in US assets, the US government has an interest in whether she is evading French taxes, not because the US cares about the enforcement of French laws *per se*, but rather in order to maintain GPN. If the US is to condition its withholding taxes on the French investor's degree of tax compliance with home country laws, then it would seem that it must ask the French investor whether she or not she is complying with French law. Of course, in a setting with extensive information-sharing provisions among governments, the French investor may not be entirely confident that this information will not

come to be known to the French authorities, and so may be reluctant to declare her evasion to the US authorities.

VI. Conclusion (to be written)

Figure 1: The Changing Nature of International Investment, 1976-2006



Note: DI represents Direct Investment and FS represents Foreign Securities. This data is drawn from Table 2 of the International Investment Position data available from www.bea.gov

Figure 2:

Wealth in State I

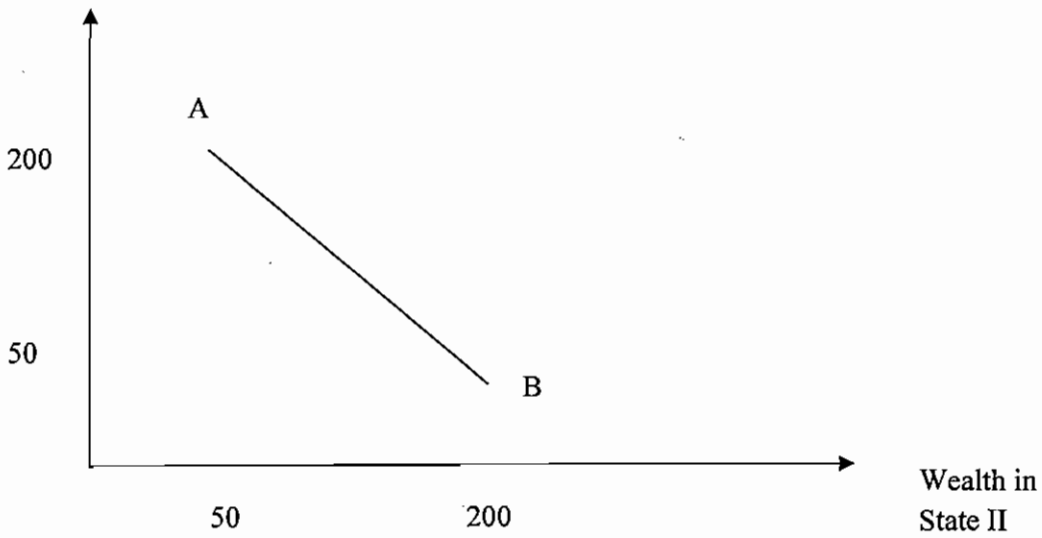


Figure 3:

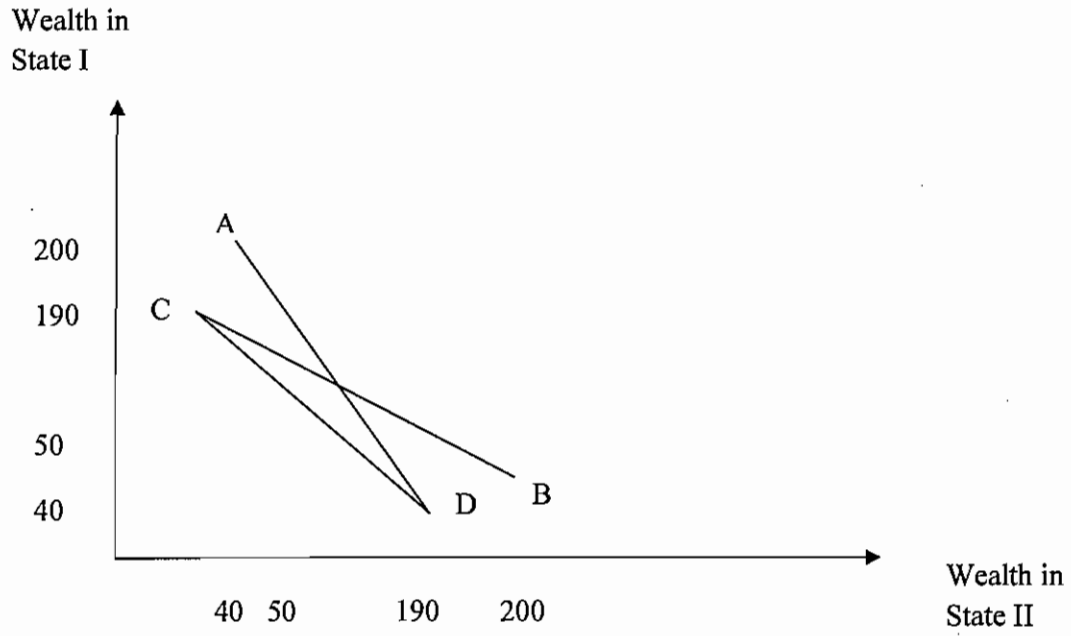


Figure 4:

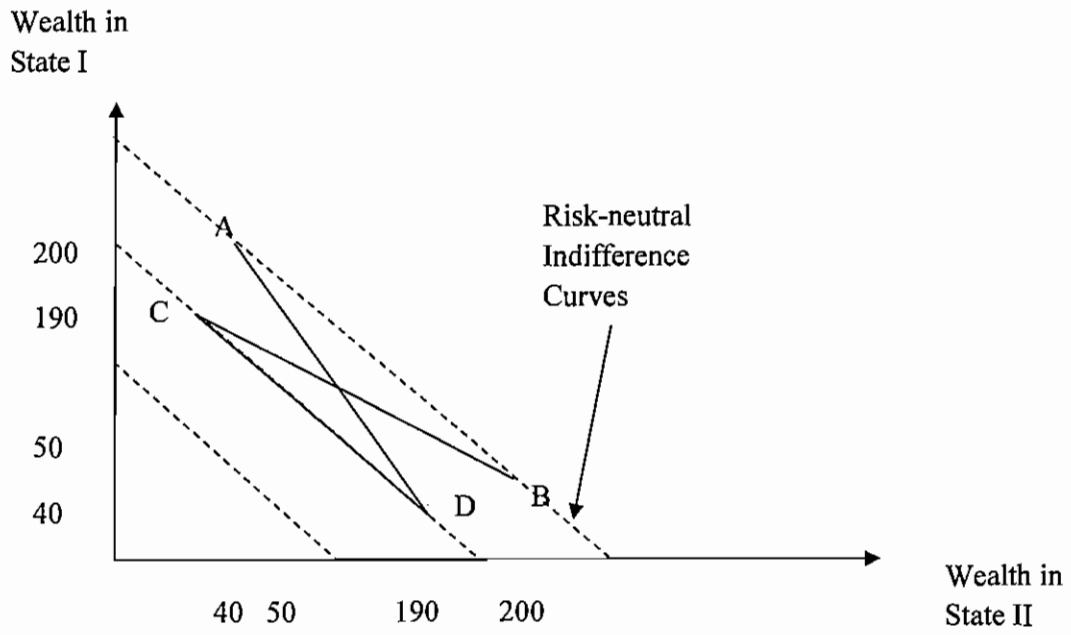


Figure 5:

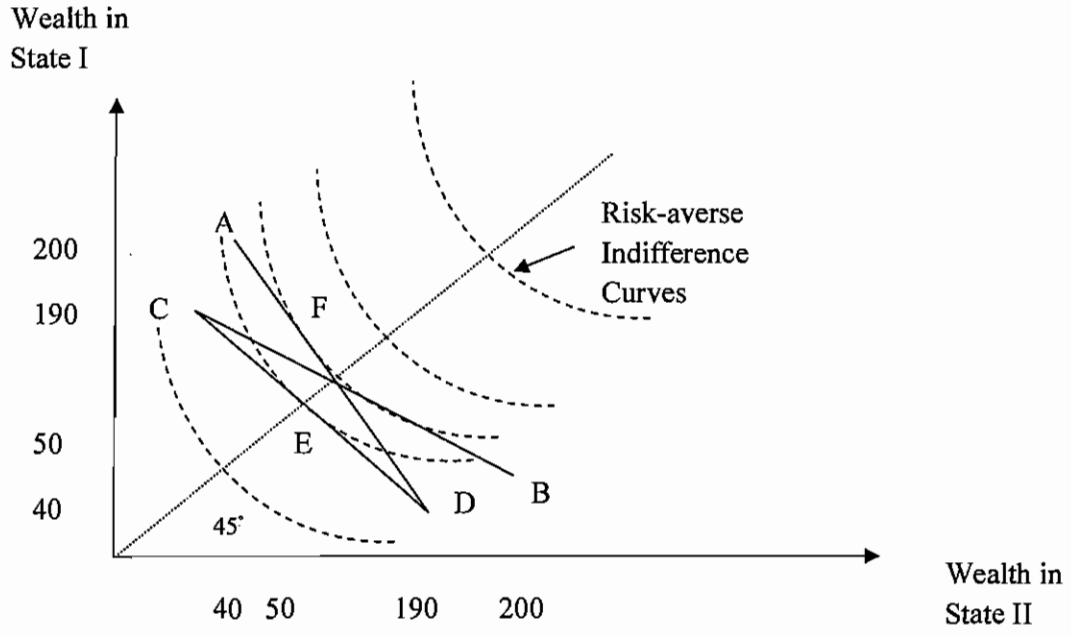


Figure 6:

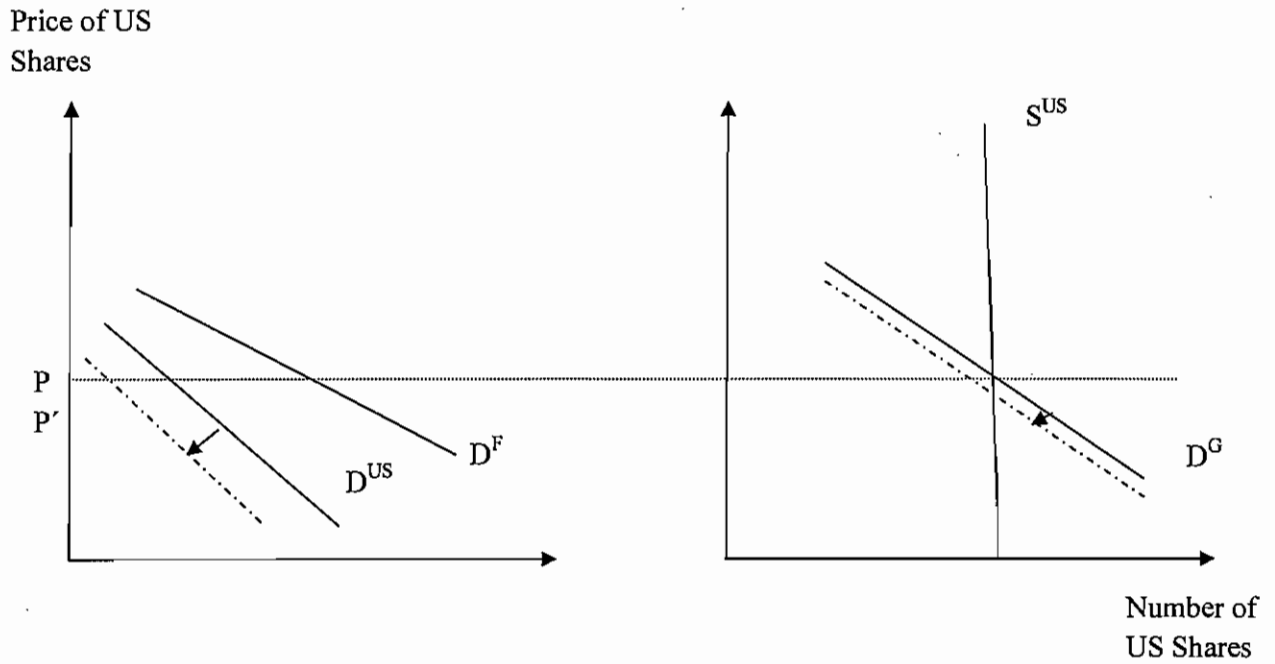
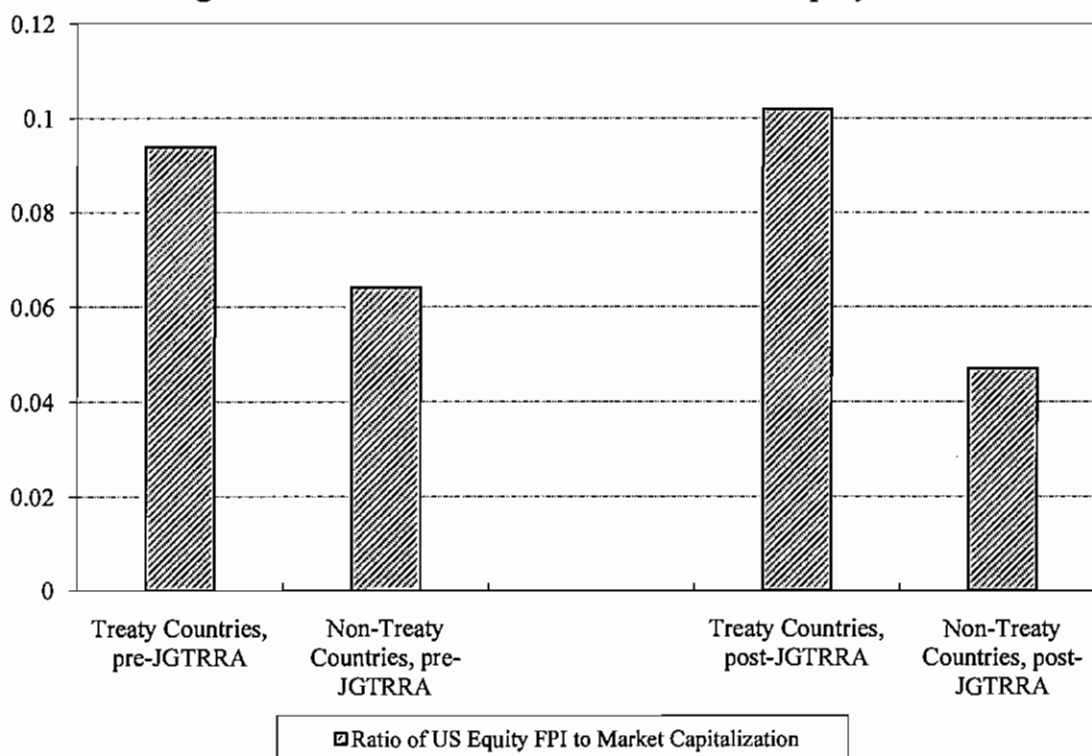


Figure 7: JGTRRA and the Location of US Equity FPI



Source: Mihir A. Desai & Dhammika Dharmapala, *Taxes and Portfolio Choice: Evidence from JGTRRA's Treatment of International Dividends* (National Bureau of Economic Research Working Paper No. 13281), available at <http://www.nber.org/papers/w13281>, Figure 1. The figure provides the average ratio of aggregate U.S. Equity FPI to Market Capitalization for Treaty and Nontreaty countries for the years prior and subsequent to JGTRRA. This ratio is a weighted average across countries in each year and then averaged across the three years prior to JGTRRA that are available in the sample (1994, 1997 and 2001) and subsequent to JGTRRA (2003, 2004 and 2005).

Figure 8:

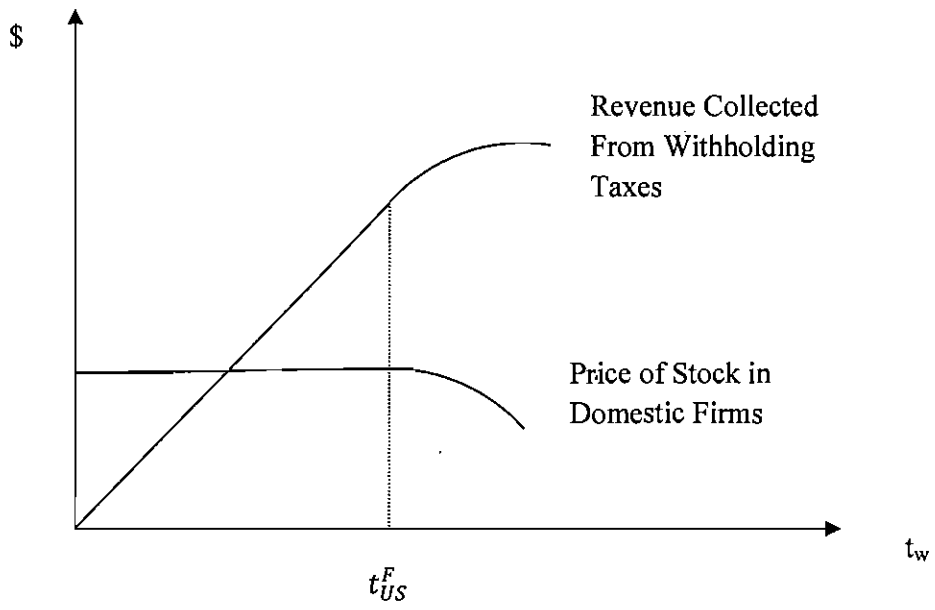


Figure 9:

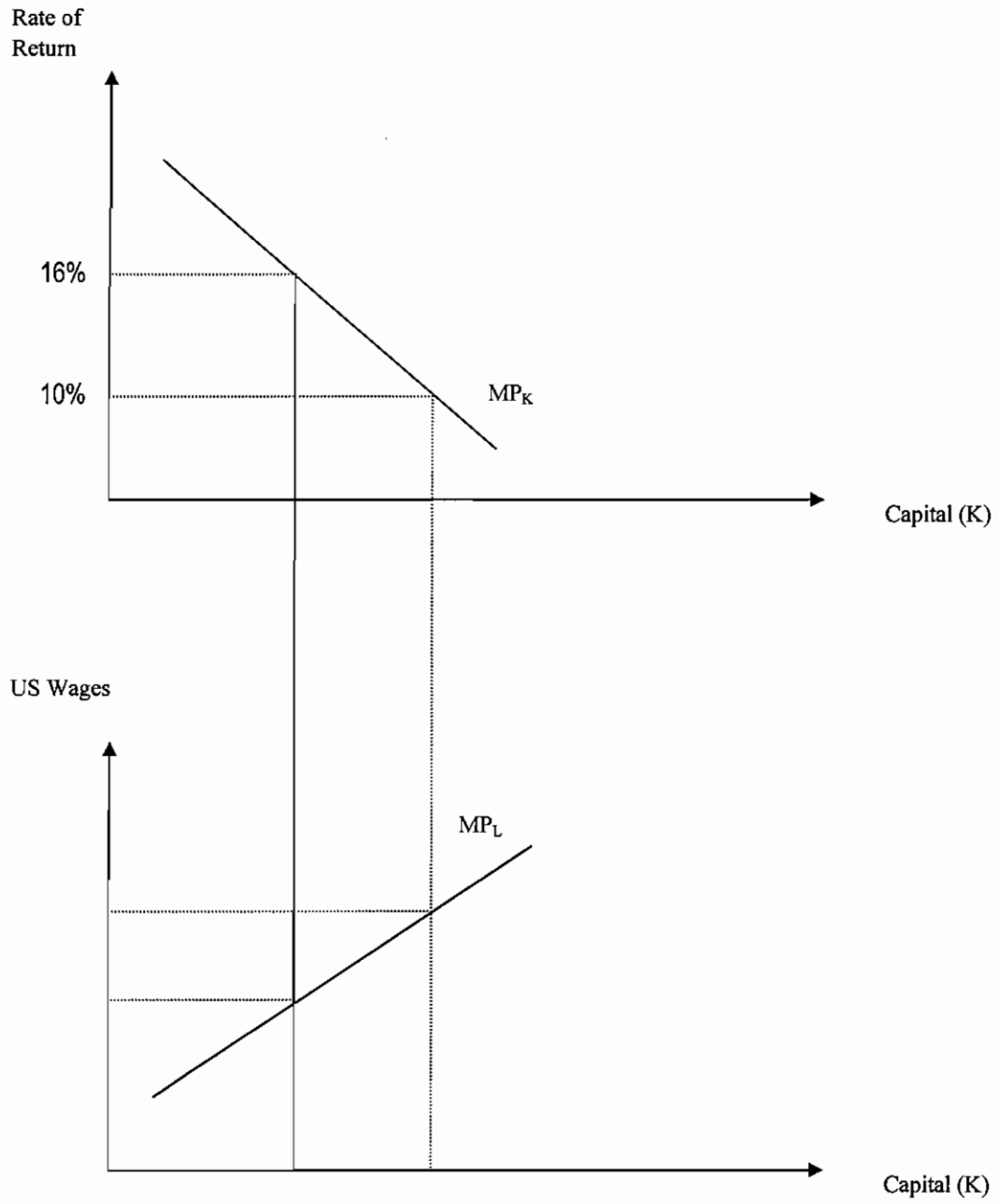


Figure 10:

