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# PILLARS OF PUBLIC FINANCE

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## **Pillars of Public Finance**

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## **Pillars of Public Finance**

An earlier version of this paper was presented at a conference session in honor of Baker Institute Rice Scholar Peter Mieszkowski as the recipient of the 2009 Daniel M. Holland Medal at the 102nd Annual Conference on Taxation of the National Tax Association, Denver, Colorado, November 12-14, 2009.

### I. Introduction

The Holland Medal, the most prestigious award granted by the National Tax Association, is presented for “distinguished lifetime contributions to the study of the theory and practice of public finance.” Previous recipients comprise the elite of our profession, including Carl Shoup, Richard Musgrave, George Break, Richard Goode, Lowell Harriss, Oliver Oldman, John Due, Arnold Harberger, Wallace Oates, Martin Feldstein, Charles McLure, Roy Bahl, Richard Bird, Harvey Rosen, and Walter Hellerstein. It is entirely fitting that Baker Institute Rice Scholar Peter Mieszkowski should join this illustrious group, as the breadth and significance of his contributions in public finance—as reflected in a recently published compilation of his most famous papers (Mieszkowski, 1999)—have established him indisputably as one of the premier scholars in this area. Indeed, in their landmark graduate textbook *Lectures in Public Economics*, Anthony Atkinson and Joseph Stiglitz (1980) cite Peter as one of the three individuals who made the greatest contributions toward their general understanding of the intricacies of public economics, and anyone who has spent any time at all with Peter knows the amazing breadth of his knowledge and the depth of his insights into the subject. Accordingly, it is with great pleasure that I take this opportunity to review some of the many contributions Peter has made in what has thus far been, and promises to continue to be, a prolific and distinguished career.

But before I begin, I suppose I must note that my first encounter with Peter was not an especially pleasant one. Of course that is easily explained by the fact that our jovial friend wasn't there. No, I was a second-year graduate student at Princeton and I was spending my entire Christmas holiday studying for my upcoming public finance exam—and spending a significant fraction of that time trying to comprehend all of the insights in Peter's celebrated paper, published in the premier issue of the *Journal of Public Economics*, on the incidence of the property tax. That paper is truly one of the pillars of public finance—a classic article that forever changed the way that economists think about the economic and distributional effects of the property tax. In my comments, I will focus on four such pillars created by Peter Mieszkowski, timeless contributions that shape the ways that theorists model the economic effects of taxes and practitioners think about their policy implications. And of course I will only be talking about some of what we might call Peter's pillars, in particular leaving his many contributions in the area of urban

economics to Jan Brueckner, and the analysis of the general equilibrium focus of much of his work to James Hines.

## **II. The Incidence of the Property Tax**

Perhaps the most famous of Peter's contributions is his celebrated article on the incidence of the property tax. Prior to the publication of this research, economic analyses of the property tax typically focused on the economic effects of its application to residential housing by a single taxing jurisdiction facing a perfectly elastic supply of capital. This perspective gave rise to the “traditional view” of the property tax as an excise tax on housing that was borne entirely by consumers of housing. The traditional view implied that the property tax inefficiently reduced the size of the local housing stock, and that its burden was born in proportion to housing consumption and was thus either somewhat regressive or proportional with respect to annual income.<sup>1</sup>

In his seminal contribution (Mieszkowski, 1972), Peter stressed that the traditional view of the property tax, based on a partial equilibrium analysis of the effects of the use of the tax by a single jurisdiction, was misleading when applied to an analysis of the effects of nationwide use of the tax, which required a comprehensive general equilibrium analysis. In particular, he stressed that the property tax was used by virtually all local jurisdictions who applied it to a large fraction of the capital stock, including commercial and industrial property as well as residential property. Accordingly, he constructed a general equilibrium model, in which all jurisdictions applied the tax to all capital. He abstracted from any effects of the tax on capital accumulation by assuming a fixed national capital stock. Given this context, he modeled the national economy as consisting of two types of jurisdictions, those characterized by relatively high tax rates and those characterized by relatively low tax rates. This formulation gave rise to what has become to be known as the “new view” of the property tax, under which the primary effects of the tax were captured by showing that property tax rates in excess of the national average tax rate drive capital out of the high-tax jurisdictions into relatively low-tax jurisdictions, with opposing effects

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<sup>1</sup> Subsequent analysts stressed that rough proportionality is a more appropriate characterization if incidence is measured with respect to lifetime income (Fullerton and Rogers, 1993).

occurring in relatively low tax jurisdictions, which attract capital. Property tax differentials thus result in an inefficient misallocation of capital across jurisdictions. In terms of incidence, the average burden of all of the property taxes imposed across the nation, which Peter termed the “profits tax effect” of the tax, is borne by capital owners generally—and it is a burden that they cannot escape, given the assumption of a fixed national capital stock. In marked contrast to the traditional view, this profits tax effect implies that the property tax is quite progressive (especially with respect to annual income), and is thus a relatively progressive element of the national tax structure.

In addition, Peter stressed that property tax differentials about the national average result in “excise tax effects” in the form of changes in housing and commodity prices and in the returns to labor and land. Specifically, housing and commodity prices tend to increase and wages and land rents tend to fall in relatively high tax jurisdictions, with offsetting housing and commodity price declines and wage and land rent increases in relatively low tax jurisdictions. Because these roughly symmetric excise tax effects tend to cancel in the aggregate, their distributional effects are of secondary importance, so that from a national perspective the profits tax effect is the primary factor affecting the distribution of the tax burden under the new view. In addition, in this wide-ranging paper, Peter also examined the excise tax effects of the use of the property tax by a single taxing jurisdiction, concluding—roughly consistent with the traditional view—that for goods sold in local markets consumers would bear roughly 75 percent of the excise tax effects of the tax in the form of higher prices, with the remainder of the tax largely falling on land owners. In a sense, the traditional view can thus be viewed as a special case of the more comprehensive model developed in Mieszkowski (1972).<sup>2</sup>

It is difficult to overstate the importance of this paper in the evolution of thought about the effects of the property tax, as its “new view” fundamentally changed perceptions about both the economic effects and the distributional implications of the tax that is still the primary source of

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<sup>2</sup> This point is developed in an excellent monograph by Wildasin (1986). Peter also subsequently provided some extensions of this analysis, including a comparison of the incidence of local property taxes and local wage taxes in general equilibrium models with local public services, in Mieszkowski (1976).

own-revenues for local governments in the United States.<sup>3</sup> Nevertheless, the determination of the economic effects of the property tax is still one of the more controversial issues in state and local public finance, as the competing “benefit tax view” argues that the property tax should instead be viewed as a benefit tax or user charge for local public services provided to households and businesses. The benefit view is an important extension of the renowned Tiebout (1956) model of local provision of public services, which argues that consumer mobility—in the form of “voting with the feet” by choosing a residential community that has the household’s desired local tax and expenditure combination—is sufficient to ensure efficiency of resource allocation in the local public sector. Although Tiebout assumed the existence of benefit taxes in the form of head taxes, innovative work by Hamilton (1975, 1976), Fischel (1975), and White (1975) showed that under the appropriate assumptions, involving either strict fiscal zoning or perfect capitalization of fiscal differentials into property values, the property tax can be converted into the head tax envisioned by Tiebout.

In light of these developments, Peter and I extended the original derivation of the new view of the property tax to include many of the features stressed in the Tiebout and benefit tax view literature. Specifically, in Zodrow and Mieszkowski (1986a), we constructed a model of national use of the property tax that explicitly included interjurisdictional competition, utility functions that allow households to vary in their tastes for local public services, segregation into differing communities according to individual tastes for local public services, and a simple form of land use zoning—all factors that were not considered in Peter’s original derivation. Nevertheless, we show that adding all of these “benefit-view-type” features to the new view model does not change its basic results, as long as a fixed national capital stock is perfectly mobile across jurisdictions in response to interjurisdictional property tax differentials. Under these circumstances, the incidence of the property tax is still determined by its profits tax and excise tax effects, which are more complicated in this reformulation of the new view but still completely analogous to the effects derived in Mieszkowski (1972).

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<sup>3</sup> For example, the new view of the property tax is featured prominently in the recent discussions of the property tax by Youngman (2002) and Fisher (2007).

In addition, in work that builds on Brown (1924) and Bradford (1978), Peter and I also derived the new view within the context of a model that focuses on the use of the property tax by a single taxing jurisdiction (Zodrow and Mieszkowski, 1983).<sup>4</sup> Specifically, we show that even though the outflow of capital caused by an increase in the property tax by a small local jurisdiction is small relative to the size of the economy, it will depress the overall national return to capital very slightly. Although the taxing jurisdiction can reasonably neglect this small effect, it naturally affects a very large capital stock, and the revenue raised by the small taxing jurisdiction is also quite small. We show that under certain circumstances the overall reduction in national capital income precisely equals the amount of revenue raised by the taxing jurisdiction—that is, capital again bears the full burden of the tax. This of course is simply the profits tax effect of the new view, as applied to an increase in the property tax by a single small local jurisdiction.

At the same time, this analysis is entirely consistent with the standard analysis of the incidence of a tax on capital by a small taxing jurisdiction, which concludes that the tax is borne by local factors of production or local consumers (McLure, 1977; Kotlikoff and Summers, 1987). This effect occurs simultaneously, as the tax-induced outflow of capital from the taxing jurisdiction implies lower returns to relatively immobile factors such as local land and labor and higher prices to local consumers. These effects, however, are offset by a third “negative” burden of the tax in all other local jurisdictions, which experience inflows of capital and the associated reductions in consumer prices and increases in factor returns. These effects are of course precisely the excise tax effects stressed in Peter's original derivation. Moreover, this paper has two additional general implications. First, this particular derivation of the new view clearly has a striking benefit view flavor, as the burden of increases in local government expenditures financed with increases in the local property tax tends to be borne entirely by local residents; indeed, the primary difference between this “benefit view” interpretation of the new view and the actual benefit view is that the burden of the tax on local factors and consumers under the new view arises due to the outflow of capital in response to the imposition of the tax rather than solely due to benefit tax considerations. Second, we show that the optimal property tax for a small open economy facing a perfectly elastic supply of capital is zero, as the property tax drives

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<sup>4</sup> See Mieszkowski and Zodrow (1985) for a similar analysis of state corporate income taxes.

out mobile capital until the before-tax return rises by enough to keep the after-tax return constant so that the burden of the tax, including its efficiency costs, is ultimately borne entirely by local factors, foreshadowing subsequent results by Gordon (1986) and Razin and Sadka (1991).

The debate between Peter's new view of the property tax and the competing benefit tax view of course continues to rage.<sup>5</sup> Opinions range from strong support of the benefit tax view (Fischel, 1992, 2001a, b), to unequivocal support of the new view (Ross and Yinger (1999, p. 2043) who argue that “the evidence against the benefits view is overwhelming”), to intermediate positions (Oates, 2001; Nechyba, 2001). However, I have no doubt that all participants in the debate would agree that the contributions of Peter Mieszkowski have been invaluable in advancing our understanding of the effects of the property tax.

### III. Tax Competition and Underprovision of Local Public Services

Although Peter is arguably best known for his seminal work on the property tax, perhaps not too surprisingly my personal favorite of all his articles is one that he and I co-authored, specifically, an article on the tendency toward underprovision of public services in the presence of interjurisdictional tax competition (Zodrow and Mieszkowski, 1986b). This work built on the insights of two previous Holland Medal winners, George Break (1967) and Wallace Oates (1972), who suggested that local governments, intensely aware of their need to compete with other jurisdictions to attract mobile capital, are likely to keep taxes on capital income low, and that the result of such tax competition may be underprovision of local public services.

Peter and I formalized this notion in a fairly simple model of interjurisdictional tax competition in tax rates applied to capital income. The model was characterized by a large number of small homogeneous local jurisdictions, with fixed supplies of land and labor in each jurisdiction and a fixed national capital stock. All residents were assumed to have identical incomes and tastes defined over consumption over a single private good, produced by competitive firms using capital and the fixed labor/land input, and a public good that was modeled as a publicly-provided

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<sup>5</sup> For contrasting reviews of this debate, see Fischel (2001a, b) and Zodrow (2001a, b).

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private good with no spillover effects. Local governments are assumed to have two tax instruments—head taxes and a tax on capital income—and to set their tax policies to maximize the welfare of local residents. Most importantly, in determining the optimal tax policies, local governments are assumed to be engaged in a Nash competition in which the government of each jurisdiction assumes that it faces a perfectly elastic supply of capital and that the tax policies of all other jurisdictions are fixed. In this context, as noted previously, interjurisdictional tax competition implies that the optimal property tax rate is zero, as long as other less distortionary tax instruments (head taxes in our model) are available to finance the efficient level of local public services—a “race to the bottom” in capital income tax rates.

We avoid this “zero capital income tax” result by imposing an exogenous constraint on the maximum level of head taxes in the model. In this context, if this constraint is binding, all jurisdictional governments choose to utilize the tax on capital income. However, since they perceive that the capital tax will drive mobile capital out of their jurisdiction and thus lower local wages and land rents, they reduce public expenditures below their efficient level in order to reduce the extent of capital income taxation required to balance the local budget. Thus, tax competition leads to an inefficiently low level of public services in all jurisdictions; however, since all jurisdictions are identical and the national capital stock is assumed to be fixed, the allocation of capital across jurisdictions is not affected.<sup>6</sup>

This article, along with a similar paper by Wilson (1986), has given rise to a voluminous literature on interjurisdictional tax competition. For example, Wildasin (1989) suggests that the magnitude of the inefficiency attributable to tax competition in the basic model can be large, although it is mitigated considerably once one considers intergovernmental transfers. More generally, the model has been extended in a wide variety of directions, typically by relaxing one or more of the assumptions noted above. Among others, these extensions include “asymmetric tax competition” between large and small jurisdictions, the introduction of multiple goods with trade, the allowance of labor income taxes as a separate tax instrument, the assumption of imperfectly mobile capital some of which may be owned by foreigners, the allowance of

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<sup>6</sup> Zodrow and Mieszkowski (1986b) also show that interjurisdictional tax competition can lead to underprovision of business public services, although this result is theoretically ambiguous even in their simplest model.

differences in tastes for public services, the inclusion of spillovers and scale economies in the provision of public goods, the addition of income uncertainty, and most importantly, consideration of the possibility of overprovision of public services due to Leviathan tendencies on the part of local governments, which can be tempered by interjurisdictional tax competition. Although the original Zodrow and Mieszkowski (1986b) article was written in the context of state and local governments in a federal system, more recently it has been applied to analyze tax competition among nations, especially within the European Union. Surveys of this literature are provided by Wilson (1999), Oates (2001a), Zodrow (2003), Wildasin and Wilson (2004), and Fuest, Huber and Mintz (2005).

### **IV. PUBLIC GOODS AND REGIONAL MODELS OF TAXATION**

Peter, along with co-authors Frank Flatters and Vernon Henderson, also made a pathbreaking contribution in the area of regional models of tax and expenditure policy (Flatters, Henderson and Mieszkowski, 1974). This strand of the literature argues that, while the Tiebout model may be a good representation of suburban local jurisdictions, it does not accurately characterize regional economies, where three of the essential assumptions made by Tiebout are likely to be violated. Specifically, in such “regional models” and in marked contrast to the Tiebout model, individuals must work and consume public services in the same jurisdiction, jurisdictions may not always be of the optimal size, and the supply of land in each jurisdiction is fixed so that capitalization effects are an important part of the effects of tax and expenditure policies.

In this article, which builds on the work of Nobel Prize laureate James Buchanan and his co-authors, especially Buchanan and Goetz (1972), Flatters, Henderson and Mieszkowski (hereafter, FHM) stress that individual migration among taxing jurisdictions is likely to be highly inefficient, rather than resulting in the efficient allocation of resources to the public sector envisioned by Tiebout. In the FHM model, the economy is characterized by a fixed number of jurisdictions, each of which has a fixed supply of land. As in the Tiebout model, migration among jurisdictions is assumed to be costless. In contrast, however, local public goods are modeled as pure public goods rather than as publicly provided private goods with constant per capita costs. As a result, from the perspective of the existing residents of a jurisdiction, migration

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of the residents is beneficial because it reduces the per capita cost of providing public services, but is costly because additional population, with a fixed supply of land, drives down wages. The optimal population size is reached when these two effects offset each other at the margin. The central result of this model is that, in marked contrast to the Tiebout model, individual migration decisions are very likely to be inefficient.

Specifically FHM obtain the striking result that as long as the regions are not identical (e.g., because their land areas differ), head taxes are generally inefficient in this model. This results obtains because—unlike the standard case in which head taxes cannot be avoided or the Tiebout case in which head taxes equal the constant per capita cost of public service provision—head taxes in the regional model can be avoided with migration and the level of head taxes is affected by the migration decisions of individuals who do not consider the effects (“fiscal externalities”) of their decisions on other individuals in the economy. More importantly, the FHM analysis, when extended to allow taxes on land rents, shows that under certain circumstances decentralized provision of local public services that are pure public goods is efficient if they are financed solely with such taxes on land rents. The intuition underlying this result is that land rents are a surplus created in the model due to the advantage of economies of scale in public service provision, and efficiency requires that such rents be used to finance the source of the surplus.

This is a fascinating result, because it provides a formal justification for the long-standing argument of Henry George (1914) that public goods should be financed solely with taxes on land rents that are applied at a 100 percent rate. Moreover, Arnott and Stiglitz (1979), Arnott (1979), and Henderson (1985) show that this “Henry George Theorem” is quite robust to a wide variety of extensions in more complicated regional models. This paper also resulted in a sizable literature, reviewed by Mieszkowski and Zodrow (1989). In particular, in models that relax the assumption of pure public goods by allowing various degrees of congestibility (and are thus more consistent with the assumption of a publicly provided private good that characterizes most Tiebout-type models), the optimal tax policy is a modified version of the Henry George Theorem that requires the use of head taxes as a congestion fee to charge migrants for the marginal costs of providing them with additional public services, with the rest of the revenues required to finance public services again raised through a tax on land rents (Boadway and Flatters, 1982).

Indeed, the results of this literature have been applied to the question of the incidence of the property tax in several papers that—like the “small open economy” version of the new view—have some benefit view aspects while retaining the character of the new view. Specifically, several analyses of the effects of the residential property tax stress that its capital component can be viewed as a congestion fee assessed on immigrants to the taxing jurisdiction, thus introducing elements of the user charge aspect of the property tax stressed by benefit view proponents, while still causing distortions in housing consumption, as argued by proponents of the new view (Hoyt, 1991; Krellove, 1993, Wilson, 1997).

### V. Research in Tax Policy

Finally, I would be remiss if I did not mention a fourth pillar of Peter’s contributions to public economics—his more applied work on various aspects of tax policy. This work covers many aspects of the theory and practice of public finance. For example, in a very early paper with Nobel laureate James Tobin and tax policy legend Joseph Pechman, Peter examined the feasibility of implementing a negative income tax—a forerunner to the Earned Income Tax Credit, which is widely viewed as a highly successful income support program (Tobin, Pechman and Mieszkowski, 1967). This paper examined various practical aspects of a negative income tax, including decisions regarding how to define a family unit and set the guaranteed level of income provided to a low income family, how to define income that would be taxed to offset the negative income tax grant, how to integrate the negative income tax with the regular personal income tax system and other welfare programs, and a variety of questions related to administering the program efficiently and equitably.

Peter also made some of the early contributions to analyzing the desirability and feasibility of implementing a personal consumption tax in the United States, thus providing a foundation for the many subsequent analyses of this still highly controversial issue (Mieszkowski, 1977, 1978, 1980, 1983b). These analyses emphasize the advantages of a personal expenditure tax in improving tax equity (adopting a lifecycle approach and assuming that bequests were fully taxed as consumption and perhaps supplemented by a wealth tax on large fortunes) and promoting economic efficiency. However, they also examine a wide range of administrative issues. These

include methods for averaging expenditures on housing and other consumer durables, problems with harmonizing a consumption tax with the income taxes of our international trading partners, integrating a consumption tax with other federal taxes, and the many problems that would arise during the transition to a consumption tax from an income tax. This insightful analysis anticipated many of the countless subsequent discussions of both the desirability and the feasibility of fundamental tax reform in the form of replacing the income tax with a consumption-based direct tax.<sup>7</sup> More recently, Peter has examined issues related to implementing indirect consumption-based taxes at the national level in the United States. A paper with Malcolm Gillis and myself examines both the common issues and the structural and administrative differences among alternative indirect consumption taxes, focusing on various versions of value-added taxes and national retail sales taxes (Gillis, Mieszkowski and Zodrow, 1996). In addition, an analysis with Michael Palumbo examines the distributional implications of implementing a national retail sales tax, concluding that it would result in significant redistribution of income to the very wealthy from a broadly defined middle class, with the effects on the poor depending on the effectiveness of provisions designed to reduce their tax burdens (Mieszkowski and Palumbo, 2002).

In addition, in a paper with Holland Medal winner Richard Musgrave, Peter has examined the role of intergovernmental grants designed to achieve fiscal equalization in a federal system (Mieszkowski and Musgrave, 1999). This paper considers both fiscal capacity equalization grants, designed to equalize fiscal performance at a common rate of tax, and horizontal equity equalization grants, designed to ensure uniform fiscal treatment (the same net fiscal residual from public services received and taxes paid) of individuals defined as equals, regardless of their jurisdiction of residence. This insightful analysis concludes that in theory highly divergent views of the goals of a federal system underlie these two approaches, but in practice the aggregate amount of intergovernmental grants will not differ greatly under the two approaches in the absence of large differences in average incomes and patterns of income distribution.

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<sup>7</sup> For example, see the articles in Zodrow and Mieszkowski (2002), Aaron, Burman and Steuerle (2007), and Diamond and Zodrow (2008).

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Peter has also written on the formulation of tax policy toward the energy industry, including some work with Eric Toder (Mieszkowski, 1983a; Mieszkowski and Toder, 1983). This work focuses on the efficiency and equity implications of state-level taxation of the energy industry, including the implications for fiscal federalism in the United States of the presence of wide differences in resource endowments across states. This research carefully examines a wide variety of inefficiencies induced by such taxes in the energy-producing states, including reductions in production, distortions of energy production timing decisions, misallocation of capital across industries and within the energy industry, over-consumption of government services in the energy-producing states, and inefficient migration to such states. In particular, Mieszkowski and Toder (1983) construct a simple model of the migration inefficiencies induced by state-level energy taxes, and conclude that such inefficiencies result in a welfare cost of approximately 2–9 percent of revenues, with the more plausible outcomes at the lower end of that range.

Finally, Peter has recently been involved in tax reform projects in some transition economies. For example, a paper with Izabela Bolkowiak, Donald Lubick and Hanna Soshocka-Krysiak examines tax reform options in his native Poland as it emerged from the shadow of Soviet rule (Mieszkowski, Bolkowiak, Lubick and Soshocka-Krysiak, 1993). In addition to providing a thorough description of the Polish economy and the nature of government finance mechanisms during the communist era as well as more recent tax changes, this article provides a comprehensive and insightful analysis of various income tax reform options being discussed in Poland at that time, with special emphasis on proposed changes in the personal income tax. In addition, a paper with his Rice colleague Ronald Soligo examines the economic changes that occurred in Russia between 1985–1995, comparing them to the largely more successful changes that occurred in Poland, Czechoslovakia, and Hungary (Mieszkowski and Soligo, 1996). Peter and Ron argue that incessant struggles between reformers and the old guard in Russia led to inconsistent reform policies that were doomed to fail, resulting in declines in GDP and increases in inflation that were larger and lasted for a longer time period than in other transition economies.

**VI. Conclusion**

To sum up, it is entirely fitting that the National Tax Association has bestowed the Daniel Holland medal on Peter Mieszkowski, as his career reflects a lifetime of pathbreaking contributions to the study of the theory and practice of public finance. In particular, his work on the incidence of the property tax, tax competition, regional models of taxation, and various tax policy issues has formed four critical pillars of thought in public economics. The resulting body of work, especially when viewed in conjunction with his outstanding research in urban economics and in advancing the theory and application of general equilibrium analysis, represents a lifetime of accomplishments that is eminently worthy of this high honor.

On a more personal note, let me say that it has been a pleasure to have Peter as a colleague, collaborator, and friend for so many years. Our joint projects comprise much of the best of my own research, and all of my research has benefited from his provocative comments and penetrating insights. And, as many of you know, Peter is a famously congenial colleague, and about the best companion you can have if you're looking for a new place to have a great lunch or dinner, or want to explore a new city. So it is both a professional and a personal pleasure to have been given the opportunity to participate in this session, honoring Peter Mieszkowski on such an auspicious occasion.

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