Cascade Policy Institute
OREGON

Resurrecting User Fees in Public Finance

A Prescription for Lowering the Cost and Improving the Fairness of Public Services

by Randall Pozdena, Ph.D.

November 2014

About the Author

This report was authored by Randall Pozdena.

Randall Pozdena is President of QuantEcon, Inc., an Oregon-based consultancy. He received his BA in Economics, with Honors, from Dartmouth College and his Ph.D. in economics from the University of California, Berkeley. Former positions held by the author include professor of economics and finance, senior economist at the Stanford Research Institute (SRI International), and research vice president of the Federal Reserve Bank of San Francisco. He also served on numerous public, non-profit, and private boards and investment committees. He is a member of the CFA Institute and a member and former officer of the Portland Society of Financial Analysts. He has authored over 50 refereed articles and books and has been cited in the Wall Street Journal, USA Today, and numerous other national and regional publications. He has served for over a decade on the Oregon Governor's Council of Economic Advisors.

Contact information:

Randall J. Pozdena, Ph.D.
QuantEcon, Inc.
PO Box 280
Manzanita, Oregon 97130
Phone 503.368.4604
E-Fax 866.307.2466
Email pozdena@quantecon.com

Acknowledgments and Disclaimers

The author wishes to thank Cascade Policy Institute for its kind support of this research. The opinions cited herein are those of the author and should not be attributed to those cited in this document or other organizations with which the author is affiliated.

About Cascade Policy Institute

Founded in 1991, Cascade Policy Institute is Oregon's premier policy research center. Cascade's mission is to explore and promote public policy alternatives that foster individual liberty, personal responsibility, and economic opportunity. To that end, the Institute publishes policy studies, provides public speakers, organizes community forums, and sponsors educational programs.

Cascade Policy Institute is a tax-exempt educational organization as defined under IRS code 501(c)(3). Cascade neither solicits nor accepts government funding and is supported by individual, foundation, and business contributions. Nothing appearing in this document is to be construed as necessarily representing the views of Cascade or its donors. The views expressed herein are the author's own.

Table of Contents

Resurrecting User Fees in Public Finance:

A Prescription for Lowering the Cost and Improving the Fairness of Public Services

EXECUTIVE SUMMARY

The share of personal income collected as revenue by state and local governments has doubled since 1945. Oregon and other US state governments obtain approximately 75 percent of this revenue through broad-based taxation and 25 percent from fees levied on the beneficiary of the service.

This report first details the theoretical and practical advantages of reducing reliance on broad-based taxation in favor of user charges. It reviews the economic philosophy of reliance on user charges versus broad-based finance and the findings of the public finance literature. These key findings are:

- The total cost of public services would decline. By making users of services and facilities aware of the costs associated with their use, spending would be limited only to those services for which consumers get benefits commensurate with their user costs.

- Because user fees, unlike broad-based taxes, are only paid if one uses a service, the public or private providers of the services are incentivized to provide a service of value and at the minimum cost. This effect is particularly pronounced if users also enjoy choice of the provider of the service.

- User fees link the generation of revenue intimately to the specific service or facility used. This avoids the "trust fund" or "trough" financing model that allows political lobbies to direct the allocation of revenues and provision of services to those with political power, rather than what is beneficial to consumers overall.

- The result is more efficient and equitable provision of services because of the closer nexus of financing burden and receipt of benefits from the services.

The report goes on to examine historical and current patterns of state and local spending and revenue collection. The review of these practices reveals that there are at least five areas where increased reliance on user charges is both practical and desirable.

- K-12 education

- Higher education

- Health services

- Public safety, including police, fire, and corrections

- Transportation infrastructure, especially highway and transit services

Together, these services constitute approximately 50 percent of state and local public spending in Oregon and other states in the aggregate, but in total have less than 5 percent reliance on properly designed user fees at present. The report then offers an analysis of each public service area and offers:

- A description of the rationale for the current mode of finance.

- A presentation of the rationale for the use of user fees.

- Conclusions regarding the utility and feasibility of converting from tax-based finance to user fees.

The analyses reveal that user fees can completely, or near-completely, replace broad-based taxation, and consistently yield better outcomes and lower costs. The report identifies and cites the available literature reviewed, and concludes with a bibliography of the relevant literature.

INTRODUCTION

In the United States, as in many other western economies, there has been a long-standing tendency to enlarge the scale and scope of services provided by state and local government. As Exhibit 1 illustrates, the share of personal income going to finance state and local government services has trebled in the post-WWII period. A companion of this trend is the shifting of fiscal responsibility to the states (and federal government) from local provision and finance. The result is dramatically increased use of broad-based taxes in lieu of charges levied selectively on the specific beneficiaries of the services. The inevitable result of these trends is the enlargement of the fraction of the economy for which the nexus between receipt of benefits and responsibility for payment is diffuse, or non-existent.

In this report, we employ the terminology of *user charges* to distinguish between a means of public finance that fosters a close nexus between enjoyment of public service benefits and cost responsibility, and *taxes*, which diffuse or corrupt that nexus. We enumerate and examine the major services

performed by government, with a special emphasis on state and local government and on Oregon within the population of states. The average behavior of other states is presented to put the Oregon practice in context.

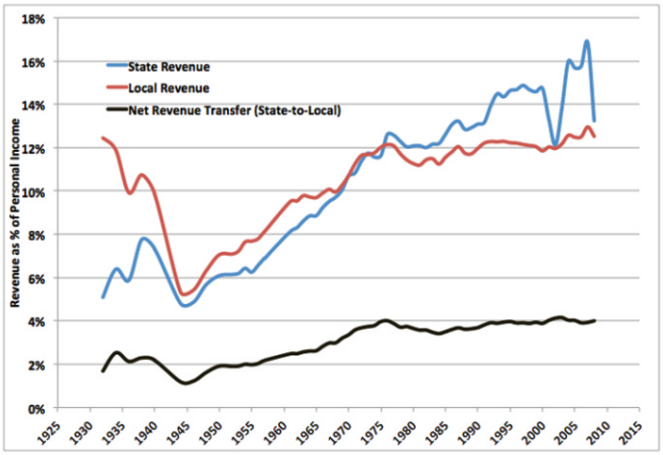

Exhibit 1: The Rapid Growth of Revenues of State and Local Governments (as a share of personal income, 1927-2010)

Our purpose is to challenge whether the burden of financing services or infrastructure should be implemented so heavily through broad-based taxation rather than user charge levies. Departure from user-based finance also encourages provision of services by government monopolies implemented so heavily through broad-based taxation rather than use.

The paper begins with a brief empirical review of the role of taxation versus the use of non-tax charges in Oregon to illustrate the dominance of tax instruments over non-tax instruments. We then offer a discussion of the philosophical and theoretical cases for user charges and broad-based taxation, respectively. This includes a discussion of the definition of a true user charge, in contrast to fees or taxes that masquerade as user charges. Focusing primarily, but not exclusively, on the major categories of government activity, we then opine on the conceptual and practical opportunities for expanding the use of user charges in lieu of broad-based taxation. The aim is to reveal the economic benefits of expanding the role of user charges.

Although we identify reforms of government roles that may be necessary, and reform of who should be providing services, we do not opine on the political viability per se of our recommandations. It is a sad fact that too often a potentially fruitful conversation about policy reform never gets started because reform, by its nature, challenges the power of both public bureaucracies and the special interests that they serve. Benjamin Franklin that too often *"In free governments, the rulers are the servants, and the people their superiors and sovereigns"*[1] has been inverted. We economists cannot redress this inversion of power; all we can do is illuminate the virtues of doing so.

USER CHARGES AND TAXATION: THE BASIC CASE

This brief review of state and local finance in the state of Oregon illustrates how small is the current role of user charge finance in modern state and local sectors. In this section, we discuss the implications of Oregon's heavy reliance on broad-based taxation. Before doing so, however, we present basic arguments for user charge finance and why the case for tax-based finance, in contrast, is so weak.

The Case for User Charges

The basic case for user charges is that, in most settings, their use results in (a) users paying only for services they want, and (b) thereby having greater influence over the quantity and quality of the services offered. For user charges to have the greatest effect in this regard, the system of user charge finance should have certain key characteristics:

- Charges should be related to the ***quantity*** of usage. The amount of the user charge, as the name implies, should be associated with the quantity of use by the consumer of the service or facility at issue. Thus, a fixed, one-time fee, such as a licensing fee, is not a good user charge even if the proceeds of those fees are dedicated to the finance of the service that is licensed. This is because the charge is independent of the intensity or quantity of use.

- Charges should be related to the ***cost*** of usage. The user charge should bear a close relationship not only to the quantity used but also to the cost burden associated with that usage. To the extent necessary and technically feasible, the charge should vary–perhaps considerably–with the circumstances of use if the costs of providing the service vary with those circumstances. In the private markets, such variation is common. For example, airline fares vary with the distance traveled, the season, the quality of seating and other amenities, and other cost-related factors. In contrast, Oregon highway users pay for use of highways primarily through motor fuel taxes. This makes the cost of travel per mile largely insensitive to variations in the burden the vehicle places on available roadway capacity, the wear and tear exerted by a particular vehicle on a particular road, and other important cost factors. Thus, motor fuel taxes, though collected in gross proportion to road usage, are poor user charges.

- The supply of services ideally should be such that users can choose the provider that best suits their needs and willingness to pay. This assures that the user charge is based on the costs of efficient

providers. For example, although building permit fees are arguably a user charge for inspection and other services, they are provided by a public monopoly that has the power to impose huge costs for non-payment. Without competition for inspection services, there is no incentive to provide them cost-effectively. Under ideal conditions, user fees provide both through the opportunity to decline the service and the opportunity to pay an alternative provider whom they deem to provide greater value. Only then is there some certainty that the service is being provided at the lowest cost. Privatization or competitive outsourcing of public services is one way to better assure user charge efficiency.

- User charge revenues should not be used to cross-subsidize unrelated services. The revenues from a charge on users should be dedicated to support the service or facility for which the fees were levied—not services unrelated to those for which the charge is levied. In fact, however, governments levy charges on services that are not in compensation for government costs incurred, but rather as a source of general revenue that is used to support a myriad of public services. Government levies on cell phone service in Oregon is an example of such practices. These are *de facto* taxes, not user fees. The very existence of such "fees" that have no nexus to the services they are used to finance shows how weak the power of the user is in a taxed-based system of government services.

- User charges should not be used to redress income inequality. That is, user charges should not be levied differentially as a means of compensating for unequal distribution of wealth or income. The 16th Amendment of the US Constitution gave Congress the right to tax income differentially, opening the door to use those revenues redistributively. Employing price discrimination in fees to redress a perceived inequity, however, distorts behavior, causing one user to depress utilization of a service and another to increase it. Since government is not omniscient, it cannot possibly know the consequences of this distortion.

The rationale of such precise specification of the features of user charge levies is two-fold. First, making users of services and facilities aware of the costs associated with their use disciplines the cost and quality of services, since the consumer can choose to decline to pay if he does not enjoy commensurate value from the service. Conversely, weakening the nexus between use and costs occasioned can result in over-commitment of resources relative to the benefits gained.

Second, tying the use of revenues to the specific service or facility used ensures that financing of services and facilities of the proper scale will be supported. The same cannot be said of a service that enjoys tax-based funding since there is no test of the willingness of consumers to pay for the services received. More will be said later about how user charges also help guide cost-effective expansion of "lumpy" facilities such as highways and bridges. Suffice it to say here, however, that properly set user charges also perform that function.

Therefore, reliance on user charges rather than taxes can be expected to (a) improve the quality of services, (b) provide a more desirable quantity of services, and (c) do so at a cost more commensurate with the value of services received. The bias of these forces, especially in a setting of choice and competition, is to lower the cost of services on a quality-adjusted basis.

> *"For user charges to have the greatest effect…, the system of user charge finance should have certain key characteristics…."*

The Case for Tax-Based Finance

Broad-based taxation does have a role in public finance that is justified by theory, but only in selective circumstances. The primary justifications for tax-based finance of state and local public services are three-fold.

- There is a public good or "positive externality" effect of a particular service. Specifically, if large benefits flow to third parties from a consumer's use of a service, then a case can be made for tax-based finance on the grounds that most beneficiaries will otherwise have an incentive to "free ride"—enjoying benefits despite not having paid to use the service. Thus, without tax-based subsidization or public supply, the service at issue will be underproduced relative to the level that would maximize society's net gains from expending resources on that service. Some argue that consumption of primary and secondary education services exhibits such so-called positive "spillover" or "externalities" to society as a whole. We will explore this more in the relevant contexts.

- Society wishes to address issues related to wealth or income inequality. The second major rationale for using taxing rather than user charge finance is to effect a redistribution of the cost burdens among the citizenry. A consumer may be willing or desirous of purchasing a service that society believes should be accessible to all, but not have the financial ability to do so. If society has democratically reached this conclusion, in such cases, a justification may be found to levy broad-based taxes on income, for example, to use the revenues to subsidize the user charges for the disadvantaged consumers entirely or to some degree.

- There are significant, long-run economies of scale in providing a service. Although this circumstance is rare, economists have demonstrated that the economy functions most efficiently when prices are equal to the marginal cost (rather than average cost) of providing service to an additional user. However, if the long-run average cost declines significantly with scale of the enterprise, it will not be able to recover its costs using marginal cost pricing. In such cases, the revenues from sales at marginal cost have to be supplemented. One mechanism would be to levy a broad-based tax to subsidize the revenue shortfall. A better one, however, that does not depend on broad-based taxation is to levy a one-time fixed charge while still charging marginal costs on incremental usage.

Although these cases for broad-based state and local taxation are theoretically justified, it is difficult in practice to restrain their use to legitimate circumstances. Broad-based taxation takes funds out of the hands of individuals, who carefully husband them by balancing costs and benefits, and gives the funds to a government entity that cannot possibly know or balance the concerns of individual citizens. Often, the existence of broad-based taxation is a result of the fact that some citizens are outnumbered politically by the prospective recipients of the funds.[2] The income-redistributive use of broad-based taxation is a particularly slippery slope, because of two important moral hazards created in the process:

- Accretion of control of public wealth through taxation destroys completely the nexus between funds surrendered and the benefits taxpayers enjoy from public services. The excessive and inefficient use of resources is accordingly inexorable.

- Those who receive distributions of wealth accreted by the efforts of others may alter their behavior in such a way that the problem of income inequality worsens, rather than improves.

"The Founding Fathers feared that government finance based on disproportionate taxation would ignite a fiscal and economic death-spiral."

The Founding Fathers feared that government finance based on disproportionate taxation would ignite a fiscal and economic death-spiral. Namely, government would use such revenues to favor special interest populations with subsidies and advance services that the public otherwise would not be willing to pay for. Benjamin Franklin is regarded as having articulated this concern first, saying famously, "The American republic will endure until the Congress discovers it can bribe the public with the public's money."[3]

It is clear that Franklin's fears found their way into the Constitution. Article I, Section 9, paragraph 4 of the Constitution stipulates that the only form of direct taxation[4] permitted was one that was "in Proportion to the Census or Emuneration." The result was that the US government relied primarily on tariffs, excise taxes, and head taxes for revenues.

Congress, however, eager to curry favor with voting constituencies, felt hamstrung by this limitation, and proposed no fewer than 68 bills between 1874 and 1894 alone to impose a tax on income (despite the fact that government was enjoying a surplus of revenues in much of this period). Some income and inheritance taxes, usually levied to finance wars, survived briefly without Supreme Court challenge, but were generally viewed as efforts to "set the poor against the wealthy and redistribute income away from those who generated it."[5] It was only in the throes of the costly First World War that support for an income tax was sufficient to advance the 16th Amendment.

OREGON'S PUBLIC FINANCES

In this section, we present the basic features of Oregon's public finance system. We primarily take the accounting perspective of the State of Oregon and its constituent local governments and special districts as a consolidated entity. We focus in this paper on the financing and activities of Oregon's state and local government. The lack of a clear nexus between sources and uses of revenues is immediately apparent even from this high-level summary of how revenues are obtained and to what uses these revenues are put.

Before turning to a discussion of the role of user charges, it is important to note the role that intergovernmental transfers play in Oregon finances. In Exhibit 2, this is illustrated at three levels of Oregon governmental finance: local government, state government, and state plus local government. Key points to note from this exhibit are:

- Local government depends significantly on intergovernmental revenue, mainly in the form of revenue down-streamed by the State to local governments and districts for K-12 education.
- The State, in turn, depends importantly on intergovernmental revenue sources from the federal government, especially in the areas of health and welfare program expenditures, and transportation.
- When the state and local government spending is combined (in the top panel of the exhibit), the within-Oregon intergovernmental expenditures net to zero.

This pattern of finance interdependency between levels of government is an important source of the weakness of the nexus between the responsibility to pay for government services and benefitting from those services. To an individual jurisdiction, revenue from another level of government is "free money" from a political standpoint. There is no obvious link to funding responsibility or individual taxpayer accountability by the recipient level of government. This is an illusion, of course, since Oregon taxpayers' tax obligations are ultimately the source of some share of higher government revenues. For example, Oregonians pay (in the form of income taxes, federal excise and fuel taxes, etc.) for funding received from the federal government to support Medicaid, highway spending, and other functions. This loss of nexus contributes significantly to the "free money" illusion and, with it, the growth of government spending and inefficient use of those funds. Oregonians are not asked to directly pay for what they receive, even at the aggregate, governmental level. Indeed, many State programs are advanced to gain access to federal government largesse, with dubious benefits.

Oregon State and Local Government Finance Summary			
Revenue	***OR***	***All States***	***OR % of All***
General Revenue	31,774,328	2,612,776,883	1.216%
Intergovernmental Revenue	8,748,975	645,961,684	1.354%
Total Revenue	**40,523,303**	**3,258,738,567**	**1.244%**
Expenditure	***OR***	***All States***	***OR % of All***
Direct Expenditure	39,932,203	3,158,332,352	1.264%
Intergovernmental Expenditure	-	-	-
Total Expenditure	**39,932,203**	**3,158,332,352**	**1.264%**
Oregon State Government Finance Summary			
Revenue	***OR***	***All States***	***OR % of All***
General Revenue	20,823,280	1,654,313,442	1.259%
Intergovernmental Revenue	7,608,740	592,997,583	1.283%
Total Revenue	**28,432,020**	**2,247,311,025**	**1.265%**
Expenditure	***OR***	***All States***	***OR % of All***
Direct Expenditure	21,561,886	1,507,569,039	1.430%
Intergovernmental Expenditure	2,003,122	227,242,317	0.881%
Total Expenditure	**23,565,008**	**1,734,811,356**	**1.358%**
Oregon Local Government Finance Summary			
Revenue	***OR***	***All States***	***OR % of All***
General Revenue	16,647,456	1,459,561,447	1.141%
Intergovernmental Revenue	6,836,643	554,062,107	1.234%
Total Revenue	**23,484,099**	**2,013,623,554**	**1.166%**
Expenditure	***OR***	***All States***	***OR % of All***
Direct Expenditure	18,370,317	1,650,763,313	1.113%
Intergovernmental Expenditure	4,666	13,730,362	0.034%
Total Expenditure	**18,374,983**	**1,664,493,675**	**1.104%**

Exhibit 2: The Flows of Revenues between Federal, State and Local Government, (Revenue and Expenditure, by Level of Government, Oregon and All States, 2011)

The changes in the pattern of funding of K-12 education in Oregon illustrates this point powerfully. Property tax limitations enacted in the 1990s pushed the fiscal responsibility for funding K-12 education from (primarily) local property taxation to state revenue sources (primarily individual and corporate income taxes. This transition is illustrated in Exhibit 3 with the revenue normalized to a percentage of personal income.

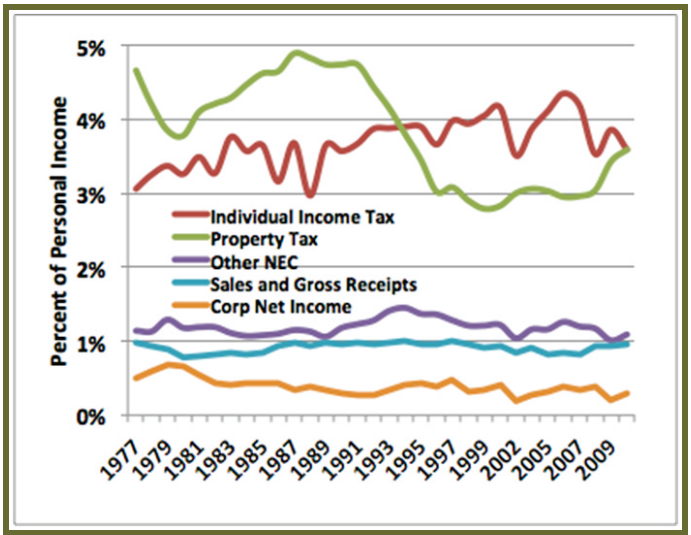

Exhibit 3: The Decline of the Role of Local Property Taxes and the Rise of State Income Taxation (Trends in OR State and Local Revenue Sources, 1977-2010)

The consequences of this transition are to distance local taxpayers from cost responsibility of what was (and still is) a local school district provision responsibility. K-12 education policy is now concentrated at the state level, where the curriculum, per-student spending levels, labor policy and employee benefits, and other aspects of K-12 education are determined. To a very large degree, Oregon families are now "takers" rather than "makers" of education policy in Oregon. We will return to this important issue later in this paper.

Measuring the Role of User Charges in Oregon

Measurement of the current role of user charges in Oregon is complicated by the crudeness of the measurement of user charges in standard state and local finance accounting, as assembled by the US Census. This is illustrated by Exhibit 4.

Revenue	*OR*	*All States*	*OR % of All*
General Revenue	**31,774,328**	**2,612,776,883**	**1.216%**
Charges	6,348,231	428,851,762	1.480%
Miscellaneous	2,566,443	199,526,760	1.286%
Tax	14,110,679	1,338,436,677	1.054%
Intergovernmental	**8,748,975**	**645,961,684**	**1.354%**
Federal Intergovernmental	8,748,975	645,961,684	1.354%
Total Revenue	**40,523,303**	**3,258,738,567**	**1.244%**
Expenditure	*OR*	*US*	*OR % of All*
Direct Expenditure	39,932,203	3,158,332,352	1.264%
Assistance and Subsidies	508,046	50,267,751	1.011%
Construction	3,359,720	268,613,127	1.251%
Current Operations	27,936,428	2,287,230,761	1.221%
Electric Utilities	21,865	5,290,882	0.413%
Employee Retirement	3,355,927	221,089,919	1.518%
Gas Utilities		494,949	-
General	1,170,872	108,657,586	1.078%
Other Capital Outlay	754,040	67,247,472	1.121%
Other In Trust		6,865,086	-
Transit Utilities	14,630	1,893,521	0.773%
Unemployment Compensation	2,158,988	121,869,972	1.772%
Water Utilities	49,094	7,234,658	0.679%
Workers Compensation	602,593	11,576,668	5.205%
InterGovernmental	**-**	**-**	**1.216%**
Total Expenditure	**39,932,203**	**3,158,332,352**	**1.216%**

Exhibit 4: Less than 20% of Oregon Revenue Comes from Charges (Composition of Revenues and Spending, Oregon and All States, 2011)

In this exhibit of high-level categories of revenue and expenditure, levies for services paid for by someone other than government are primarily captured by the accounting, as assembled by the US Census. The table includes figures for all US states for comparative purposes. However, these charges need not (and in general, do not) meet the criteria of true user charges discussed earlier. However, even if one accepted this measure, the role of user charges would clearly be small. Charges in Oregon represent 15.5 percent of total state and local revenue, and 15.9 percent of total expenditures. Across all states, they represent 13.1 percent and 13.6 percent, respectively, of state and local revenue and expenditures.

A slightly different perspective is obtained by measuring the share of Charges and other Non-Tax Revenue to Spending on Current Operations by government function. Exhibit 5 displays this information for Oregon and for all 50 states in the aggregate. This allows comparison of the share of charges in current operations spending by function. Because state and local financial accounting does not incorporate amortization or depreciation of physical capital, all of the charges' shares are overstated.

In the case of toll highways and parking functions, for example, the current charge revenue exceeds current operational spending. However, this does not mean that charges are self-sustaining for those functions since depreciation or amortization of physical capital are nowhere accounted for in state and local financial reports.

At best, we can say that even focusing on current operations, Oregon and other US state governments finance something less than 25 percent of all functional activities with charges and other non-tax revenue. However, the analysis does highlight those areas where charge-based financing is particularly low. Those Oregon functions with charge-to-spending shares less than 50 percent include:

- Public Safety and Corrections at 0.0 percent.
- Public Buildings at 0.0 percent.
- Public Welfare at 0.8 percent.
- Public Highways at 2.7 percent.
- K-12 Education at 3 percent.
- Public Transit at 20.4 percent
- Parks and Recreation at 22.2 percent.
- Public Higher Education at 48.4 percent.

Even these measures can only be taken as rough indicators of a governmental function's reliance on user charges. Most are likely overstated significantly because expenditure measures include only current capital outlays, and do not account for depreciation. Moreover, if capital improvement or current operations funding are obtained through intergovernmental program reimbursement, then it may appear as a charge when it is not a user charge but a subsidy. This explains the relatively high charge-to-current operations ratio in health functions, for example, of 54 percent. The "charges" in this case are primarily reimbursements to the states for health care program services.

Conversely, if a user charge (however crude) is defined as a tax, then the state and local accounting procedures will exclude the levies from the definition of charges. Current operations of Oregon highways, for example, are funded significantly by motor fuel taxes, which are thus not categorized as charges. Hence, the low charge-to-expenditure ratio of 2.7 percent understates the use-based financing of highways that occurs through motor fuel taxation as a charge when surrogate for a proper user charge, and one that fails most of the tests for being so presented earlier.

Function	Spending on Current Operations: Or	Spending on Current Operations: All States	Charges and Non-Tax Rev.: OR	Charges and Non-Tax Rev.: All States	Charges Share: OR	Charges Share: All States
Administration	**2,113,972**	**187,201,706**	**792,401**	**52,639,702**	**37.5%**	**28.1%**
Education	**10,195,813**	**817,879,276**	**2,141,059**	**128,623,018**	**21.0%**	**15.7%**
Education K12	5,970,703	554,102,840	180,259	14,083,995	3.0%	2.5%
Education, General	176,045	17,561,873	-	-	0.0%	0.0%
Education, Higher	4,049,065	246,214,563	1,960,800	114,539,023	48.4%	46.5%
Gov't Enterprise	**449,314**	**24,787,197**	**441,404**	**17,110,865**	**98.2%**	**69.0%**
Health	**2,996,776**	**226,331,063**	**1,618,947**	**116,737,904**	**54.0%**	**51.6%**
Buildings	**140,639**	**12,817,449**	**-**	**-**	**0.0%**	**0.0%**
Judicial and Legislative	**469,809**	**45,216,098**	**323,365**	**14,158,142**	**68.8%**	**31.3%**
Parks and Natural Resources	**1,036,670**	**63,932,340**	**231,743**	**18,839,444**	**22.4%**	**29.5%**
Public Safety	**2,684,945**	**207,226,199**	**-**	**-**	**0.0%**	**0.0%**
Public Safety-Corrections	1,045,321	72,433,904	-	-	0.0%	0.0%
Public Safety-Police and Fire	1,639,624	134,792,295	-	-	0.0%	0.0%
Public Welfare	**6,040,331**	**527,806,803**	**51,171**	**5,978,003**	**0.8%**	**1.1%**
Regulation	**238,880**	**13,732,452**	**-**	**-**	**0.0%**	**0.0%**
Transportation	**2,827,209**	**223,384,690**	**548,079**	**51,140,856**	**19.4%**	**22.9%**
Transport-Air	256,798	21,566,411	231,743	18,839,444	90.2%	87.4%
Transport-Highways	1,812,084	135,508,351	49,609	1,727,289	2.7%	1.3%
Transport-Ports	154,074	4,921,645	85,734	4,172,910	55.6%	84.8%
Transport-Toll Highways	4,345	10,247,551	12,441	10,947,976	286.3%	106.8%
Transport-Transit	583,965	49,571,773	119,365	13,270,703	20.4%	26.8%
Transport-Parking	15,943	1,568,959	49,187	2,182,534	308.5%	139.1%
Utilities	**2,101,790**	**205,528,615**	**2,101,430**	**198,389,790**	**100.0%**	**96.5%**
Total	**31,296,148**	**2,555,843,888**	**8,249,599**	**603,617,724**	**26.4%**	**23.6%**

Exhibit 5: Spending on Current Operations vs. Revenue From Charges, by Function, 2011

Another indication of the small role of user charges is the share of total revenues that come from tax sources that are broad-based, rather than usage-based, and the shares of expenditures that are supported by those taxes. Exhibit 6 shows the own-source tax revenues, by type of tax, for Oregon and all 50 states combined, after sorting Oregon revenues from the largest to the smallest. Exclusion of transfers to Oregon of federal funds (raised largely through income taxation) overstates significantly the role of user charges in Oregon.

Own Tax Revenue	OR	All States	Rank, OR	Rank, All	OR Cum. %	All States Cum.%
Individual Income	5,493,776	284,937,822	1	3	38.93%	21.29%
Property	5,054,454	443,259,172	2	1	74.75%	54.41%
Motor Vehicle License	590,847	23,205,141	3	8	78.94%	56.14%
Corporation Net Income	517,176	48,546,867	4	4	82.61%	59.77%
Motor Fuels Sales	454,386	41,227,355	5	5	85.83%	62.85%
Other Selective Sales	349,660	41,082,707	6	6	88.30%	65.92%
Public Utilities Sales	316,979	28,729,514	7	7	90.55%	68.06%
Occupation and Business License, NEC	309,691	18,908,477	8	9	92.75%	69.48%
NEC	271,677	6,982,850	9	17	94.67%	70.00%
Tobacco Products Sales	262,799	17,653,708	10	10	96.53%	71.32%
Other License	189,276	7,464,368	11	15	97.87%	71.87%
Death and Gift	76,250	4,814,682	12	19	98.41%	72.23%
Insurance Premiums Sales	60,302	17,130,775	13	11	98.84%	73.51%
Hunting and Fishing License	42,797	1,472,226	14	22	99.15%	73.62%
Motor Vehicle Operators License	29,239	2,534,492	15	20	99.35%	73.81%
Corporation License	26,665	9,995,656	16	13	99.54%	74.56%
Public Utility License	21,949	1,479,250	17	21	99.70%	74.67%
Alcoholic Beverage Sales	16,294	6,240,300	18	18	99.81%	75.14%
Severance	13,199	14,671,661	19	12	99.91%	76.23%
Amusements License	4,480	595,327	20	24	99.94%	76.28%
Documentary and Stock Transfer	4,329	8,136,440	21	14	99.97%	76.89%
Alcoholic Beverage License	3,223	607,754	22	23	99.99%	76.93%
Parimutual Sales	1,202	170,332	23	25	100.00%	76.94%
Amusements Sales	29	7,219,721	24	16	100.00%	77.48%
General Sales and Gross Receipts	-	301,370,080	25	2	100.00%	100.00%
Total Own Tax Revenue	**14,110,679**	**1,338,436,677**				

Exhibit 6: Own Tax Revenues, Rank and Cumulative Share, Oregon and All States, 2011

Exhibit 7 shows a similar tabulation of Own Tax Revenues, ranked in descending order for Oregon by type of broad-based tax.

Direct Expenditure	OR	All States	Rank, OR	Rank, All	Cum. % OR	Cum. % All
Public Welfare	11,230,572	841,170,094	1	2	28.1%	26.6%
Education	10,513,873	861,130,583	2	1	54.5%	53.9%
Transportation	3,052,638	237,747,392	3	3	62.1%	61.4%
Health	3,044,133	230,505,653	4	4	69.7%	68.7%
Public Safety	2,718,688	211,735,351	5	6	76.5%	75.4%
Administration	2,214,658	195,713,950	6	7	82.1%	81.6%
Utilities	2,179,241	214,199,047	7	5	87.5%	88.4%
Miscellaneous	1,264,732	71,436,486	8	9	90.7%	90.7%
Interest on Debt	1,256,461	123,571,596	9	8	93.8%	94.6%
Parks and Natural Resources	1,105,410	67,764,633	10	10	96.6%	96.7%
Judicial and Legislative	474,109	45,766,159	11	11	97.8%	98.2%
Gov't Enterprise	462,387	25,207,964	12	12	99.0%	99.0%
Regulation	241,282	13,847,453	13	13	99.6%	99.4%
Builidngs	147,513	13,788,769	14	14	99.9%	99.8%
Other	26,506	4,747,222	15	15	100.0%	100.0%
Total Direct Expenditure	**39,932,203**	**3,158,332,352**	**-**	**-**	**-**	**-**

Exhibit 7: Own Tax Revenues, Rank and Cumulative Share, Oregon and All States, 2011

These exhibits, combined with the insights from Exhibit 6 are indicators of the extreme reliance on broad-based taxation in financing the following major functions of Oregon government (in alphabetical order):

- K-12 education spending relies significantly on state income taxation and, to a lesser degree, local property taxation.
- Higher education relies on State broad-based taxation for more than half of its spending.
- Health services are reliant primarily on a combination of state income taxation and intergovernmental transfers from the federal government.
- Public safety, including police, fire and corrections, is reliant on local property taxation and the State's income tax sources.

- The two areas of transportation where the State is prominent are in the highway realm, which is reliant on license fees and motor fuel taxation, and the transit realm[6] which is reliant on federal and state subsidies, local payroll taxation and fare box revenues.

- Public welfare is reliant on state income taxation and intergovernmental transfers.

In the remainder of this report, we will focus our analysis and reform suggestions primarily on the first five of these government functions. Together they represent about one-half of Oregon government expenditure. We do not address public welfare further in this paper. If one accepts that its fundamental role is interpersonal and intergenerational income redistribution, the opportunity for introducing user charge finance in the public welfare arena is reduced to payment into national social insurance schemes.[7]

FINANCING OF PUBLIC FUNCTIONS: PRACTICE VERSUS POSSIBILITY

In this section we compare the current financing practice with what is possible, not only in the conceptual sense, but in the practical sense of having functioned elsewhere or at a point in history, that is technologically possible and promises improvement in outcomes. In the parlance of the economics profession, this paper adopts the evaluation framework of the field of public finance. Hence, we begin our reform analysis with a brief digression on the principles of public finance theory.

Principles of Public Finance

The most important modern student of public finance theory and practice was Richard Musgrave (1910-2007), a German-American professor of economics. He wrote two influential textbooks,[8] but his most seminal work was a paper on the roles of government that he wrote in 1939.[9] In that paper, he argued that government had three roles involving encouragement of (1) the efficient allocation of resources, (2) an equitable distribution of income, and (3) stable prices and economic growth.

The ability of individual states to effect price stability and economic growth is dominated today by federal and central bank policy to a large degree. Hence, in a discussion of state and local public finance, the first two criteria, i.e., *efficiency* and *equity*, are typically the primary criteria for evaluating public policy. However, many economists would argue that through its efforts to encourage economic efficiency, a state can, in fact, influence economic growth and price stability to some degree.

Musgrave's modern elaboration of public finance theory draws on many principles elaborated 175 years ago by Adam Smith, a Scottish philosopher whom many consider to be the father of market-based economics. Smith's quandary was to identify the principles and organizational arrangements that would best serve a just-industrializing society. Technology was enlarging the opportunity for physical movement of individuals and goods, and feudal arrangements affecting ownership of property and the exchange of labor services were breaking down. These events yielded the opportunity for a less regulated and constrained interaction among labor, land, and other fixed capital, and monarchical authority.

> *"[Adam] Smith's philosophy is of particular interest in this paper because it reflects a clear preference for private markets and for user charges over broad-based taxation."*

Adam Smith spent his life elaborating on the institutional context he felt would best create prosperity in an industrialized economy. In a *tour-de-force* of just two books—*The Theory of Moral Sentiments*, published in 1759, and *The Wealth of Nations*, published in 1776—he made the moral and economic case for the autonomous prescience and morality of what we call today *free market* forces. Smith is regarded by most who have heard of him as an advocate for mercantile and trade arrangements that support private market activities and societal well-being. However, he also wrote at length about the role of government and the key features of public finance.

Smith's philosophy is of particular interest in this paper because it reflects a clear preference for private markets and for user charges over broad-based taxation.

> *Public services are never better performed than when their reward comes in consequence of their being performed, and is proportioned to the diligence employed in performing them.*[10]

Obversely, he was dubious of the tendency of central planning in any context. He saw it as the assertion of the preferences of "system" bureaucrats over common people.

> *The man of system, on the contrary, is apt to be very wise in his own conceit; and is often so enamored with the supposed beauty of his own ideal plan of government, that he cannot suffer the smallest deviation from any part of it. ... He seems to imagine that he can arrange the different members of a great society with as much ease as the hand arranges the different pieces upon a chess-board.*[11]

Regarding equity and wealth distributional issues, Smith had great empathy for the poor and indigent.

> *What improves the circumstances of the greater part can never be regarded as an inconveniency to the whole. No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable.*[12]

However, he felt strongly that the economic prosperity of the indigent depended importantly on charity, free markets, and vigilant defense of property rights. Indeed, in his view, one of the main justifications of a system of justice was to preserve conditions for those with the skill to increase enterprise. Hence, although Smith cared about elevating the status of the poor, it did not extend to taking by compulsion that which was acquired by others through legitimate effort:

> *The affluence of the rich excites the indignation of the poor, who are often both driven by want, and prompted by envy, to invade his possessions. It is only under the shelter of the civil magistrate that the owner of that valuable property, which is acquired by the labour of many years, or perhaps of many successive generations, can sleep a single night in security.*[13]

Smith's simultaneous empathy for the poor and the need to protect others' property from government are internally consistent, both as moral and economic principles. Confiscation of property accumulated honestly by productive members of society, in his view, retards work effort and investment and thus both economic growth and the support for altruism.

Smith's views contrast sharply with current political philosophy, both at the national level and in Oregon. In both cases, there is a presumption, explicit and implicit, that equity of outcome is more important than equity of opportunity, and perhaps even more important than the level of economic outcome. Smith would find anathema the notion that policies that redistribute property rights and income from the "rich" can be justified simply on the basis of making income outcomes more uniform.

With the philosophical context set, we now turn to evaluating Oregon's posture toward the five areas where the assumed role of government is large, and the opportunities for user fee finance appear, to this author, to be large.

Financing K-12 Education

We have seen that US and Oregon education policies rely almost entirely on broad-based tax finance of K-12 education. There are other important features of the structure of K-12 education that bear upon the desirability of reintroducing user charges to this sector.

- K-12 education is a virtual public monopoly at both the US and Oregon levels, with the share of private enrollments in 2009 of 0.07 and 0.09 percent, respectively, according to the National Center for Education Statistics. This monopoly condition is maintained by the fact that the broad-based tax scheme creates the illusion that the marginal cost of public schooling to the parent is zero. This puts private schools that charge user (tuition) fees at a severe competitive price disadvantage.

- There are restrictions on student choice of school within the public school system, with the minor exception of highly constrained charter or magnet schools. This adversely affects the level of competition and its ability to discipline the quality and cost of K-12 services. The only major practical mechanism of choice–moving the family to a different school district–is not only costly, but has been dramatically impaired since World War II through consolidation of districts. The population per district and number of schools per district has increased dramatically, effectively reducing inter-district competition, as illustrated in Exhibit 8. Although data for Oregon is limited, the number of districts has fallen by a factor of 5 since 1952 and the population per district has risen by a factor of 11. The number of students per district is now 2,450 (2012).[14]

- Court rulings and policies in most states have imposed the notion of equalization of the dollars that can be spent per student, regardless of the school or district.

This has further diminished differentiation and competition in the K-12 sector.

To understand the rationale for the current mechanism of K-12 finance and service delivery, it is necessary to examine the case that is typically made for these policies.

As we will see, there is little empirical evidence to justify the current practice of reliance on broad-based tax finance, rather than user charges, in this important sector of the economy.

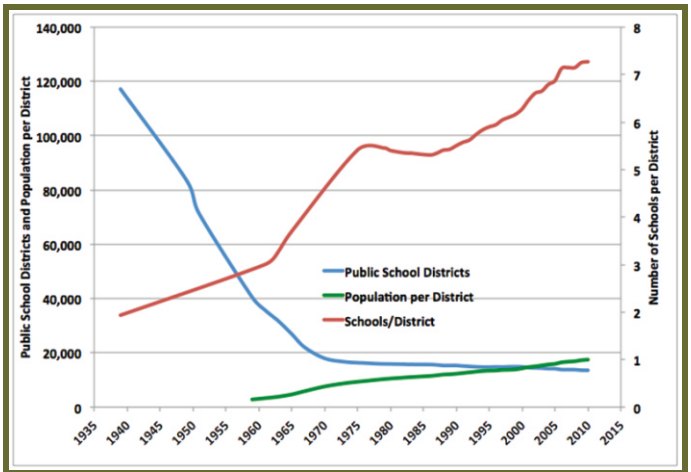

Exhibit 8: The Rapid Centralization of K-12 School Districts, US 1935-2011

The Rationale for the Current System of K-12 Finance

The rationale often offered by advocates for broad-based tax funding of K-12 education and the monopoly structure of supply is several fold. First, it is argued that society as a whole has an interest in education of its citizenry so that all citizens bring common values, language, and basic skills to the community.[15] It is further argued that the level of education necessary for individuals to have those skills is greater than the skills the individual student and parent would independently seek if the cost of schooling was paid through user charges borne by the parent or student. This is the "social externality" argument for broad-based taxation, i.e., since society as a whole (and not just the individual student) benefit from the education of all students.

Second, it is argued that the State needs to be intimately involved in the supply of K-12 education services to assure that the desired minimum levels and uniformity of education services are provided. In essence, the State does not trust private motivation of parents of K-12 education services to demand, and independent schools to provide, the quantity and quality of human capital development that society needs.

Finally, in order for the State to provide K-12 services equitably, it feels it must equalize the resources available to individual schools. In Oregon, equalization occurred in the 1990s, limiting the ability of school districts to generate revenue locally. The "equalization" movement operates on the principle that the cost of inputs is materially related to the quality of educational output, which many studies have shown is counterfactual.

K-12 Education: The Evidence for Social Externalities

If we take the charge-to-expense share in Exhibit 5 literally, Oregon's policy implicitly embraces the notion that K-12 education is essentially 97 percent "social." Contrary to this posture by Oregon and most other states, a large literature, using various statistical models and methods, has failed to find that K-12 education produces large, positive social externalities. Rather, this literature finds that the private benefits to the individual are so large relative to the benefits to the commonweal that user charges levied on households should be used to finance most primary and secondary education services.

- Rauch (1993), for example, finds positive externalities (relative to the benefits enjoyed by students directly) of only three and five percent. Thus, primary reliance on user charges levied on households would not impair the social benefits of K-12 education.

- Acemoglu and Angrist (2000) analyze the effects of compulsory schooling (which arguably should generate large externalities) and find, "...little evidence for sizable external returns to education...."

- Holcombe (1996) finds that there may be external benefits from having students trained to have common language and numerical skills, but that these are quickly acquired and thus represent a small fraction of K-12 education costs.

- King (2007) argues that if there were large public benefits from K-12 education it would be revealed in the choices voters make regarding education funding. His econometric analysis finds that for the 1999–2000 school year, for example, the benefits of K–12 education were 93.7 percent private and only 6.3 percent public.

In summary, the claim that the State as a whole should finance K-12 education fails multiple empirical tests. At best, the State's role in K-12 education finance on the basis of the "social externality" argument should be limited to underwriting the first few years of education, subsidizing a small share of total costs, or compelling and regulating the delivery of a small fraction of the total K-12 education experience. For the rest of the K-12 experience, the private motivations of parents and students can be relied upon to voluntarily seek out and finance primary and secondary education services that serve their private interests—which dominate the benefits of K-12 education in the first place.[16]

"In summary, the claim that the State as a whole should finance K-12 education fails multiple empirical tests."

K-12 Education: The Evidence for User Charges and Private Supply of Services

The monopoly role that the State currently assumes in supplying K-12 education services also lacks empirical justification. Other countries successfully operate K-12 systems that involve much greater involvement of private supply of services with improvement in academic performance.

- Indeed, in the United States, prior to compulsory education and widespread K-12 public finance, private purchase of education services was the norm. Importantly, as West (1965) has pointed out, there is scant evidence that education was "underconsumed" because of its out-of-pocket cost. Rather, individuals of all walks of life sought out and paid for education services of types and quantities that best served their plans for elevating their economic status. In fact, according to the US Census of 1840, the literacy rate of residents in the New England states exceeded 99 percent a decade before the first compulsory, free ("public") school law was passed in Massachusetts.[17]

- The Dutch constitution[18] has a feature that guarantees freedom of education, a posture that includes the right to establish private and sectarian schools, their academic principles and focus, and other features that are publicly circumscribed in the US and Oregon. Indeed, the primary role of the State in the Netherlands is simply to provide uniform, portable funding to any student to attend any school–whether publicly or privately organized. After 150 years of open competition between public and private schools, approximately 75 percent of Dutch students are in privately organized schools.[19] The Netherlands also consistently ranks far above the US in international student testing.

> *"[In Denmark], private schools are almost as great in number as public schools…, suggesting that even in a non-level playing field, private schools emerge to serve student needs."*

- Denmark allows only partial use of public funds to assist student tuition charges at private schools (putting private schools at a sharp price disadvantage), and regulates teacher salaries. Nonetheless, even then the market share of Danish primary and lower secondary private schools is approximately 13% of all children. Moreover, private schools are almost as great in number as public schools (491 vs. 600, in 2006), suggesting that even in a non-level playing field, private schools emerge to serve student needs. This is further evidence that public subsidies of K-12 education are not necessary for private consumers and producers of education to address the market.[20] In addition, the prominence of small schools in Denmark's private market belies the notion that large school districts are needed to provide quality education, and administration of the 91,000 enrolled private school students requires only five administrative staff at the Ministry of Education.[21]

- In South Korea, upper secondary schools (senior high schools) are entirely private-tuition funded. In addition, many parents pay for home tutoring to supplement in-school education. Approximately one-half of K-12 education expenses are spent by parents on private tutors (hagwons) and online tutor services with participation of 75 percent in this market. The fact that Korea had a 66 percent illiteracy rate at the end of the Korean War and is now one of the top performing OECD countries scholastically is a testament to the economic potency of private market education reform. According to a 2013 comparison published in the Wall Street Journal, 47 percent of Korean eighth graders are ranked "advanced" versus 7 percent in the United States.[22]

- The Chilean government endorsed a liberal voucher-type school finance system in 1980, and private school enrollments rose from a 12 percent share to 56 percent in 2009. In 2012, the combined enrollment share of the subsidized and non-subsidized private sector was over 63 percent of all Chilean K-12 children.[23]

- Sweden similarly reformed its school finance system in 1992, though with a heavier overlay of government regulation than in the Netherlands or Chile. Nonetheless, private school enrollments rose from less than 1 percent to 13 percent in 2011. Importantly, the competitive entry of private schools improved the performance of the public schools in the same county.[24] This demonstrates that the presence of private schools that enjoy no protection against failure offer competitive discipline to those that have such protection.

- In developing countries, user charges have long been an important mechanism for sidestepping public education of poor quality or restricted supply. They are in widespread use today especially in India and Africa. For example, according to Watkins (2000), an Oxfam report found "it is interesting to note that a lower-cost private sector has emerged to meet the demands of poor households… Indeed there is a growing market for private education among poor households… [because of] inadequacies of public education systems." Similar evidence has been accumulated by the UN, UNDP, and World Bank.

- In India and countries on the African continent, families willingly pay private K-12 tuition out of pocket to private K-12 schools (many of them "unapproved" by their governments) to avoid the poor quality of education at the "free" public schools that are notoriously inefficient and unaccountable to parents.[25] Even in the US there are echoes of this evidence of a private market that would burgeon if unburdened by anti-private sector sentiments in the K-12 education sector. Enrollment in Catholic and other sectarian schools is growing despite the double burden of the broad-based taxation levied to support public schools and the private tuition requirements.

- Many other countries have robust private sectors in K-12 education, usually operating on a more intimate scale than the school districts that have resulted from consolidation in the US. Indeed, in Australia, where 31% of students attend private schools, the trend is toward decentralization of authority.[26] In the Canadian province of Alberta, 31 percent of students choose non-public schools that have diverse characteristics.[27]

In summary, there is a large body of recent and long-term evidence that a vigorous private supply-side response is forthcoming when private K-12 institutions are not handicapped by one-sided subsidization of public schools, and financed by student-carried user charges. Although Horace Mann's 19th-century compulsory "free school" movement is entrenched deeply today around the world, its fundamental per se scholastic bankruptcy is reflected in the comparatively poor performance of US and Oregon students in key test measures against the largely more market-oriented Asian and European school models. Specifically, of the top 30 OECD performers on the 2009 international PISA[28] math and science comprehension tests, the US was the worst among those countries. Oregon's math rank on the 2009 test was 20th out of 50 states, and 31% lower than the highest ranked state.

The Impact of Equalization of Revenue per Student

Although the policy of equalization of the fiscal resources available to each student has been widely adopted, the evidence suggests it is neither equitable nor efficient. In Oregon, equalization is achieved by a procedure of distributing the subventions of state revenues on a per-student basis to individual public school districts. Adjustments are made for the incidence of special needs children and for local costs to some degree. In essence, the basic premise of the equalization policy is that by de-coupling the resources of parents in the various districts from the amount that they may spend on K-12 schooling the system will be more "fair." However, the empirical evidence does not support this premise, nor does the policy achieve the appropriate objective of improving performance.

- First, there is no reliable link between spending per student and performance. After nearly 50 years of research, economists have failed to find a statistically significant relationship between the level of spending per student and either student test scores or future wage outcomes.[29] Actual analyses have used a variety of simple and complex econometric models using both cross-section and time series data, but have failed to find a significant effect. Exhibit 9 shows the simple, graphical association between spending and 8th grade test scores for the most recent testing period available. Although academic research incorporates many more variables in an attempt to isolate an effect of

spending, the effect of spending alone explains less than one percent of the variation in test scores across US states.

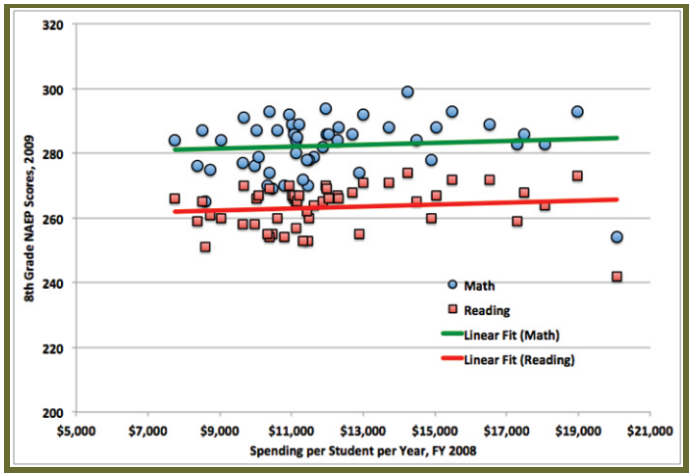

Exhibit 9: Test Scores Bear No Relation to Spending per Student by State Over Time (State NAEP 8th Grade Test Scores vs Spending, 2009)

- Cross-country analyses have similarly failed to find an effect, despite the availability of data on total spending over the entire K-12 period. Indeed, in work done by this author, the only statistically reliable explanatory factor to explain relative PISA test performance (using OECD data) is the education level of the child's parents. Thus, although there is widespread agreement among economists that poorer children would benefit disproportionately from additional years of school, graduating high school, etc., the lack of a relationship between spending and student performance, by any measure, calls into question a redistributive approach to addressing this issue. Indeed, family environments and institutional structure may be more dispositive influences.[30]

- Although policy makers persist in pursuing equalization polices despite their flawed premise, other researchers have found that equalization itself does have a significant effect on the distribution of student performance, but it is to worsen, rather than improve, the distribution of educational outcomes and the efficiency with which educational services are provided. This comes as no shock to those of us who live in settings where schools appear to be run for the teachers rather than the students. Specifically, Husted and Kenny (2000) find that efforts to make K-12 education more equitable fail to consider the offsetting institutional responses of schools and teacher labor. They find that equalization policies, such as those pursued first in California and now in Oregon, make schools less responsive and efficient. Similar observations were made earlier by Carroll and Park (1983).

K-12 Education and User Charges: Conclusion

The evidence is clear that greater reliance on user charges, through direct parental tuition charges or provider-blind public subventions, is desired by the marketplace. Private enrollments rise, private supply is elastically forthcoming, and student performance improves. The performance improvements are likely the effect of greater inter-school competition, institutional accountability, and greater flexibility in the services delivered and the scale of the schools that provide the service.

This is the same prescription that Adam Smith, an ardent supporter of education as a means of raising the economic condition of the poor[31] made over 200 years ago. He, too, was also dubious of the effectiveness of an education that was supported without some payment by users. To quote Smith (1775),

> *...every parish or district [should have] a little school, where children may be taught for a reward so moderate, that even a common labourer may afford it; the master being paid partly, but not wholly paid by the publick; because if he was wholly, or principally paid by it, he would soon learn to neglect his business.*

With greater parental responsibility for payment, limited public resources would not be dissipated on a one-size-fits-all, ineffective K-12 system.

> *"[Adam Smith]…was also dubious of the effectiveness of an education that was supported without some payment by users."*

Financing Higher Education

Unlike K-12 education, public college and university education is even today financed materially by user charges (i.e., tuition fees paid by the student for that student's benefit). The share of tuition per FTE represented by educational appropriations ("tuition subsidy rate") has been declining, but remains in the range of 50 percent, as illustrated in Exhibit 10.

The pregnant question for higher education is the same as for K-12. That is, is the rate of subsidy too high or too low? The high rates of subsidy in the public system imply that state governments must believe that there is a broad state interest in underwriting higher education.

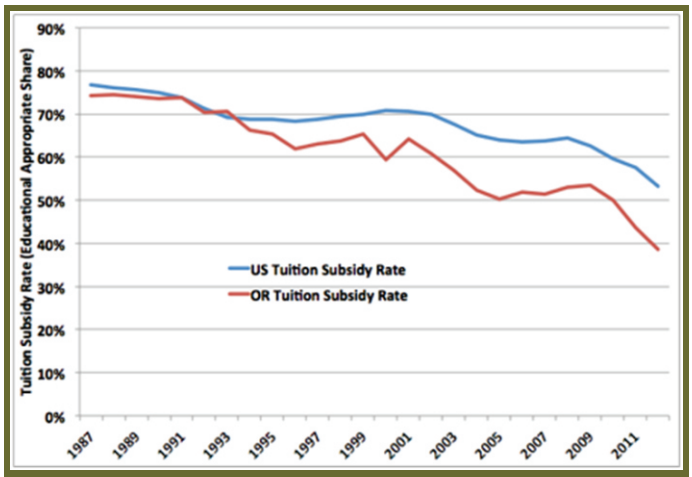

Exhibit 10: The Tuition Subsidy Rate, OR versus US 1987-2012

But unlike the K-12 case, the variability among the states in the provision of higher education overall (public and private) immediately suggests that there is a less compelling case to be made for subsidized institutions and user charges at public institutions through the use of broad-based taxation.

In Oregon, the higher education system is dominated by public institutions. This is true for many frontier states, in particular, as a result of the timing of the passage of the Merrill Act in 1862. That act authorized use of public lands to establish institutions of higher learning (the "Land Grant" university movement). In 2010, for example, Oregon had almost six times the number of students enrolled in its public colleges and universities as in its private institutions. This is in sharp contrast to older regions like New England, that average less than two public enrollees per private enrollee, and certain states like Massachusetts, where the ratio is less than 1 public enrollee per private enrollee.[32] Consequently, higher education subsides are themselves a larger total burden on state budgets in Land Grant states like Oregon. Nonetheless, the share of public higher education subsidies is very large across public institutions in all states. The operating subsidy alone is about half of the operating costs of public institutions (46.5 percent across all states, and 48.5 percent in Oregon).[33 34]

Conceptually, Oregon could privatize its college and university systems and, thereby, immediately increase the reliance on student user charges in this sector. Even if it did so only to achieve the national average public/private ratio of 2.9, it could nearly double its implicit reliance on user charges and/or provide itself with considerable fiscal relief. The key point, however, is that given the demonstrated ability of private institutions to co-exist, and even dominate the higher education marketplace in other states, the feasibility of having greater reliance on user charges is clearly practical. Thus, we now explore the rationale for continuing the current practice or increasing reliance on user charges.

The Rationale for the Current System of Higher Education Finance

The rationale for continued, significant use of broad-based tax mechanisms to finance higher education likely has three, key origins.

- First, the aforementioned historical accident of development of Land Grant public universities likely creates its own inertia. Because the public subsidies are broad-based, and thus responsive more to political than market calculus, tuition levels tend to be lower in public versus private institutions of higher learning. This, in turn, creates a competitive barrier to the entry of tuition- and endowment-dependent private institutions.

- Second, there is widespread acceptance among policy makers that a state's economy will benefit economically by having an extensive higher education infrastructure, and from a bureaucratic perspective, this can be achieved most readily by commanding the existence of public institutions. Indeed, Oregon today continues to add new junior- and four-year state colleges in the belief that the greater the university infrastructure, the greater the economic stimulation. Common anecdotes along these lines are the concentrations of institutions of higher education in Silicon Valley and Boston, and the assumed cause-and-effect relationship to the high-tech activity that also prevails in those locales. An implicit assumption in this policy is thus that the benefits of a state's subsidy of public higher education accrue significantly to the economy (or society) as a whole, rather than accruing to the private benefit of the student.

- It is also widely believed that, without public assistance, the personal, private investment in higher education by students would be lower. This reasoning means that policy makers believe that directly or indirectly subsidizing the tuition of public college students is an important way to stimulate additional investment in human capital of college-age individuals. Moreover, in a setting where tuition costs are rising much more rapidly than income or other goods and services, public institutions have a political motive to maintain the price illusion that education costs less than it does. This is facilitated by the fact that states directly regulate net tuition costs through tax-funded subsidies, which allows them to maintain this illusion. Once one accepts these premises, the rationale of a persistent, significant subsidy of user

charges and operating expenses in public institutions can be explained. The question is whether it makes economic and fiscal sense.

The Rationale for User Charge Finance of Higher Education

The case for a society having a higher education sector in broad terms flows from the more general literature that relates high education accumulation (human capital accumulation) and economic growth. On this general question, there is widespread agreement among economists, because human capital accumulation is an important determinant of economic growth.[35] However, the policy of a state subsidizing higher education through the levy of broad-based taxes and/or taking a large role in the supply of these services (through public university operating assistance) raises several issues in the context of a user-charge alternative.

- No economists question the importance of higher education as an element in human capital accumulation and economic growth. As a share of the total contribution of education to economic growth, higher education tends not to be the dominant contributing education sector, however. One researcher estimates that a quarter of the 18 percent contribution that education made to economic growth came from higher education, whereas another researcher put it at less than 17 percent.[36] But the more important question is the extent to which subsidies are needed to stimulate greater investment by students in higher education because there are social externality (spillover) effects of the state economy.

- The total societal return to higher education is the sum of the private return plus the spillover (externality) effect on others than the students themselves. Even if the societal return exceeds the private return, it is not clear that subsidy is justified. Indeed, the higher the private return on higher education relative to the opportunity cost of capital, the less likely it is that students will "underinvest" in higher education just following private motives. Put differently, why subsidize every student if they are likely to make the choice to invest without subsidy?

- The rate of (private) return to investment in higher education is generally 10 to 15 percent rates of return in developed economies, and not materially lower than the total, societal return. Since the opportunity cost of capital under normal business cycle conditions is just 5 percent or so, subsidies are, by and large, unnecessary for society to enjoy the full social (private plus externality) returns from higher education.[37] The logic for a state to underwrite higher education is further undermined by the student post-graduate mobility, which leaves behind little residual, local social benefit.

- As Pozdena (1997) observed, the only important missing market is the inability of the poor to pledge future labor in return for financial assistance obtaining a higher education degree.[38] This argues, as Psacharopoulos (2006)[39] agrees, for a modest role for the State in supplying borrowing vehicles for bright students with no endowment of financial resources.

- The case for public provision of higher education is weak, not only because of the aforementioned factors but because of the risk of inefficient policy maker intervention in focus and curriculum decisions as a quid pro quo for public support. It is interesting to note as illustrated in Exhibit 11[40] that private institutions tend to spend more on instruction, research, academic support, and student services, and markedly less on public service and other functions less obviously linked to learning.

Type of School	Instruction	Research	Public Service	Academic Support	Student Services	Other
Private						
All	18.41	4.09	6.71	4.67	8.06	58.05
4-Year	16.96	4.67	6.67	3.80	7.10	60.80
2-Year	24.98	1.47	6.89	8.57	12.39	45.71
Private						
All	32.72	11.13	1.44	8.92	7.87	37.93
4-Year	32.71	11.17	1.44	8.92	7.84	37.92
2-Year	33.74	0.12	1.03	8.75	14.09	42.28

Exhibit 11: Percent of Expenditures, by Function, US Private and Public Universities, 2010

It may not be coincidence that the oft-cited economic stimulus effect of higher education in the high-tech context is in local settings where a large, private university presence exists. In Silicon Valley, Boston, and New York, prominent private universities dominate, and are directly linked to the technological innovation that is at the heart of so-called high tech activity and the associated venture capital financing presence.

Higher Education Finance: Conclusion

A case is relatively easily made for reducing the dependence of Oregon's higher education institutions on broad-based taxation, and increasing its already material reliance on user charges. Access by poor students can be addressed, if the State wishes, by supporting student loan programs scored by scholastic ability and need. Full privatization of some large fraction of the existing university and college systems would insert sharper inter-institutional rivalry as well as greater responsiveness to student priorities.[41] Together, such reform likely would improve the quality of the services provided by Oregon colleges and universities. As McPherson and Winston (1993) observed:

> *"...quality is a problem in public higher education because student demands matter too little, and cost is a problem in private higher education because student demands matter too much."*

By removing inept political influence, and increasing user discipline, privatized Oregon institutions of higher education would be encouraged to provide a better educational product in a cost-effective manner. The side effect might well be a system that provides greater economic development stimulus to the regional economy as well.

Financing Health Services

Health services activities of states encompass a wide variety of services, but the most fiscally prominent ones fall into the broad areas of certification and regulation of insurers, providers, facilities, and services. The nature and relative importance of the various activities varies from state to state. In Oregon, the footprint of the State is large in the health care realm, where it has four primary roles.

- The State licenses medical practitioners, facilities, and programs.[42] The State of Oregon also directly regulates hospital capacity through a Certificate of Need (CN) process; and operates a small number of hospitals, such as the Oregon State Hospital in Salem and, indirectly, facilities affiliated with public universities. Counties also directly operate clinics[43] that often serve as providers of care—particularly to Medicaid recipients—and are thus supported both directly by local governments (mostly counties) and through payments by the State to insurers. Under the Oregon Rural Health Clinic Act of 1977, federally qualified rural health clinics of various ownership structures have been established as well.[44]

- The State regulates private health insurance plan design and rates that may be offered in the state.[45] As a result, the rate levels, coverage, and structures depart from those which might be voluntarily offered in a purely private market setting.

- The State itself also provides health insurance to certain qualifying individuals and households through the federally subsidized and regulated Medicaid program.[46] Imposition of user fees in the form of co-payments ("cost sharing") is limited by Federal regulation.[47] ObamaCare has liberalized Medicaid eligibility requirements, expanded coverage mandates, increased future fiscal risks for states,[48] and superseded state programs.[49] Until recently, for example, Oregon operated a high-risk health insurance pool, the Oregon Medical Insurance Pool (OMIP).[50] This has been superseded by the actuarially unsound pooling of these risks in the ObamaCare program.

- In Oregon, the State and localities are involved in the provider side of health care as both regulators and as public providers of health services. The State licenses medical practitioners, facilities, and programs.[51]

Even from this brief summary, one can see that the State of Oregon has suppressed and overridden the role that charges for use play in the health insurance and provider marketplaces. In economic terms, this occurs as the result of the State's involvement in insurance rate level, structure and service mandate regulation, regulation of provider compensation through Medicaid, and regulation of market supply of health professionals and facilities through licensing and testing for every need.

The Rationale for the Current Approach to Health Care

The State's involvement in health care in Oregon is a manifestation of the widely held belief that the nature of health care is such that transactions in this field cannot be left to purely private market forces or self-regulatory organizations (SROs). The writings of some prominent economists have contributed to this view. Arrow (1963), for example, identified several aspects of the demand and supply in the market for health care that are not typical in other markets which, arguably, form the basis for the massive public intervention in this marketplace.

Demand for medical services is unpredictable. Illness is not a steady and planned form of consumption, but rather irregular and uncertain. Consumers thus have difficulty budgeting for illness.

Also, consumers are also presumed to suffer informational deficits that put them at a disadvantage in making care decisions. Specifically, it is assumed that consumers do not know the prospects of the service having the intended effect even if administered perfectly,[52] and they do not have the ability to evaluate the skills of the doctor. In contrast, the doctors are presumed to know these things, leading to "informational asymmetry."

The remedy for the unpredictability aspect of illness can be addressed by employing insurance to protect the consumer from financially devastating, albeit rare, outcomes. However, this then raises the prospect of so-called moral hazard problems common to insurance markets. Specifically, a consumer may know that she is sick, but can conceal it from the insurer to obtain insurance at a price or a time that is, in the long run, actuarially untenable for insurers. In addition, a consumer may lead a less healthy lifestyle knowing that they have insurance to fix any health problems that arise. Also, the fact that a patient is insured makes that patient less sensitive to the cost of care, and can encourage the doctor to over-provide care out of a profit motive. Arguably, these moral hazard problems and the ability of the doctor to manipulate consumer demand may lead to over-development and use of medical services.

"Milton Friedman argued against occupational licensing…, recommending instead that practitioners only prove that they have the skills they say they have ('certification')."

From this perspective:

- Licensing and certification of doctors and facilities is justified to address the information asymmetry problem; patients then can theoretically rely on the doctor's advice without question. From this, regulation of the supply of physicians, hospital beds, drug availability, etc., are justified as a cost-containment and quality-preservation mechanism.

- Regulation of insurance is justified to make sure that insurers do not excessively limit coverage because of moral hazard concerns, and insurers can be mandated to supply services that have social benefit (e.g., coverage of inoculation) but might not otherwise be covered by insurance,[53] and compel coverage of adversely selected risks.

- Provision of subsidized care through Medicaid-type insurance programs is justified as a means of allowing lower-income individuals and households access to expensive medical care.

In sum, therefore, fundamentally the large footprint of Oregon and other states in the health care sector is based on the presumed superior knowledge of doctors and the State, and the relative uselessness and ignorance of the health care consumer and insurers. Thus, user charges are seen as (a) a deterrent to seeking care and (b) an inferior means of stimulating supply of needed insurance and services relative to those deemed important by the wisdom of the State regulators.

The Rationale for Greater Reliance on User Charges in Health Care

Advocates of greater consumer involvement in health care spending and decisions in general have greater faith in the ability of individuals and markets to provide intelligence that offsets information asymmetries. They also believe that there is a tendency for regulation to overreach in the missions described earlier, ultimately resulting in the embrace of inflationary, inefficient, and actuarially unsound policies whose negative effects outweigh the asserted benefits of not relying on market-derived user charges. They believe that this overreach is the proximate cause, in turn, for the relative cost of care and thus the bloating of programs to give the poor reasonable access to care.

We turn first to the licensing of providers and health care facilities. It is not at all clear that exclusionary licensing practices and long apprenticeships are needed to provide quality medical labor, nor quality health care institutions. In general, such policies are widely known to result primarily in protection of incumbent providers, and elevate the costs of the licensed service.[54]

- Contrary to popular assumption, doctors served the public without restrictive medical practice statutes as recently as the mid-20th century.[55]

- Milton Friedman argued against occupational licensing of doctors (and all others) because of his observation that the licensing regulations functioned primarily to protect existing providers and elevate prices,[56] recommending instead that practitioners only prove that they have the skills they say they have ("certification").

- Recent relaxation of the restrictions on the functions nurses can perform now allow them to diagnose illnesses and treat patients, and to prescribe medications without a doctor's involvement in 18 states (in 2012). They are reported to be as able to provide primary care as doctors and are generally more responsive to patient needs.[57]

- RAND (2010) studied retail clinics and found the quality, level of service, and cost to be equal to or superior to other conventional health care facilities. Many provide their services for a fee, and do not require insurance.

Insurance regulation in Oregon and most other states imposes mandates to cover events that are inherently not compatible with the function of insurance, and has stifled market-type remedies to provide access to first-dollar coverage[58] and inexpensive insurance plans.

- Oregon health insurance law, for example, mandates reimbursement of expenditures in 42 broad classes of procedures and products, including normal pregnancy and delivery, contraceptives, injuries from the use of controlled substances, periodic breast and pelvic exam procedures, and alcohol/tobacco cessation program treatments. These and most other Oregon mandates cover activities that are not inherently an illness, rare, expensive, or outside the control of the patient. The result is that the coverage is not functioning as insurance at all, but rather simply broad-based cost sharing which just results in higher costs,[59] and diversion of resources from treatment of disease.

- Under ObamaCare, there is a wide range of products and procedures for which reimbursement is mandated in the name of preventative care. Of the preventative mandated major coverage categories, 15 are for adults, 22 for women, and 26 for children. These include such things as the purchase of aspirin, blood pressure and cholesterol screening, diet counseling, and screening for tobacco use.[60] The theory is that giving first-dollar coverage to preventative procedures will save money in avoided disease and treatment costs. In fact, however, as Cohen et al. (2008) concluded after a review of over 500 studies, "Although some preventive measures do save money, the vast majority reviewed in the health economics literature do not." Nonetheless, under ObamaCare, insurance plans now must reimburse hundreds of individual procedures at 100 percent.[61] In three studies[62] of the preventative care literature, only two (childhood immunization and counseling adults on the use of low dose aspirin) were found to be cost-effective. Similarly, Maciosek (2012) calculated that if 90 percent of the US population used proven preventative services it would save only 0.2 percent of healthcare spending. Though not trivial, even these modest savings require greater voluntary practice of preventative care than is likely to occur under any insurance scheme, with or without cost sharing.

- Oregon was one of the last states to embrace Medical Savings Account (MSA) or Health Savings Account (HSA) policies as a means to providing consumers with a tax-favored savings account that could be used to make payments for medical expenses not covered by insurance. It was not until 2007 that Oregon permitted marketing of such plans in concert with high-deductible, catastrophic care coverage.[63] High deductible plans with MSA/HSA-type facilities have been demonstrated to simultaneously allow households to economically obtain coverage against catastrophic illness while amplifying consumer discipline in the pricing of health care services. Indeed, this principle of consumer-directed health care is at the heart of the Singapore MediSave (an MSA) and MediFund (a catastrophic coverage plan) that have contained healthcare costs dramatically, while providing care on a par or superior to other, more costly systems in the developed world.[64]

We now examine the implicit assumption that states need to provide subsidized health insurance without significant user cost responsibility to provide economical access to care for the poor. Health care spending increased from less than four percent of per capita gross domestic product (GDP) to 12 percent in 1996 (and 17 percent today). In addition, the proportion of health care expenses reimbursed by insurance (private or public) has risen to 90 percent nationally from only 10 percent in 1940.

The evidence suggests that it is the growth in comprehensive coverage, without user cost responsibility, that underlies the explosion in the unit cost of health care. This rise in the unit cost of health care, in turn, aggravates the economical access to health care to the both the poor and individuals who choose not to be insured.

- Health insurance coverage, in general, distances the consumer from spending decisions and reduces the pricing discipline on providers of services. As Exhibit 12[65] illustrates, using data from the period of coverage growth in the US, the higher the reimbursement ratio, the higher the ratio of medical care unit costs to other consumer costs. This follows from the fact that insurance (of all types) reduces the sensitivity of the insured party to the cost of the activities covered by insurance. Exhibit 12 examines this phenomenon using national data on coverage ratios and relative price indices for medical services. Under the pressure of expanded government and private insurance coverage over the years, the price of medical services has risen at more than twice the rate expected from general inflation factors.

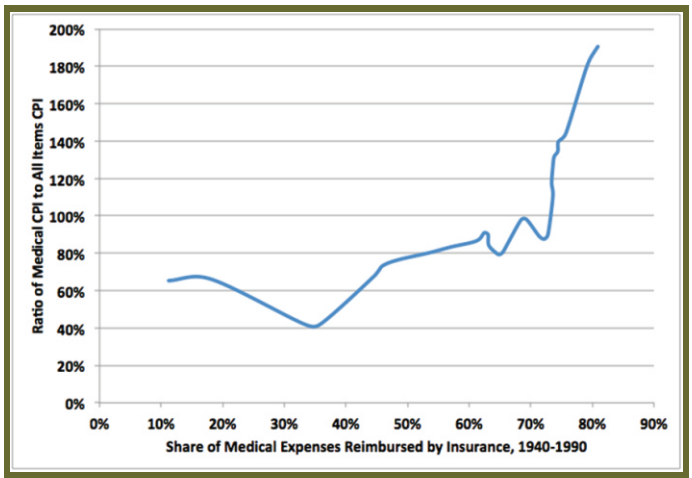

Exhibit 12: Expanding Insurance Coverage Drives Up Medical Cost Inflation

This phenomenon has also been studied econometrically by Finkelstein (2006) at MIT who finds that expanding levels and comprehensiveness of coverage are responsible for about half of the real per capita growth in US health care spending between 1950 and 1990. Thus, ubiquitous insurance coverage stimulates not only the relative unit cost of medical services, but also likely has a positive influence on the quantity of services sought.

- The over-utilization phenomenon associated with lack of user fees has been isolated by Gardiol et al. (2003) who employed a unique Swiss dataset that allowed isolation of the moral hazard-driven expansion in utilization from other factors. They found that consumers who have to pay the entirety of the cost of an outpatient procedure impose only half the cost on the health care system of those who do not have to pay anything on the margin.

- Direct payment by the patient for routine conditions is more cost effective, because insurance company overhead adds to the cost and premiums must reflect these costs. It is estimated that the administrative overhead of an insurance system adds about 25 percent on top of the underlying cost of care according to Kahn (2005). Health care spending increased from less than four percent of per capita gross domestic product (GDP) to 12 percent in 1996 (and 17 percent today). When the price illusion sparks such runaway growth in spending, of course, it is virtually certain that much of the growth is in the form of over-utilization and/or low-productivity expansions in the features of the services provided.

- Subsidized plans with limited cost sharing (user fees) are at the heart of state Medicaid programs designed to assist the indigent. The consequence of offering such plans, however, has been to distance the consumer even further from purchase decisions, increasing the cost of care and pushing more households into Medicaid (see Exhibit 13).

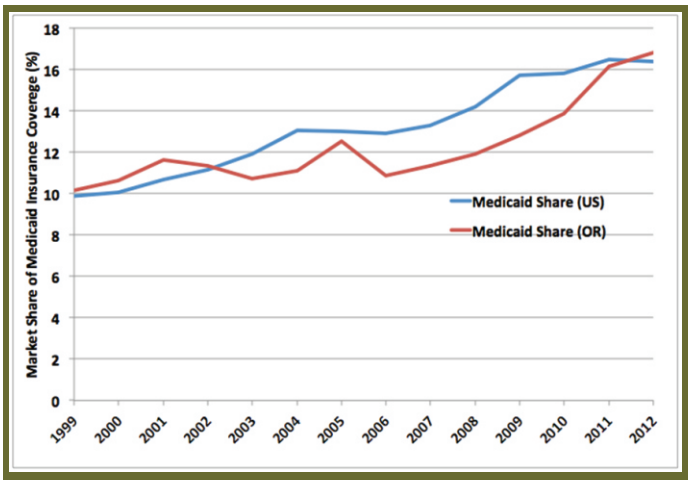

Exhibit 13: Medicaid13: Growing Share of the Insurance Market, 1999-2012

Oregon's Medicaid program, as was the case with the program in other states, grew rapidly as the cost of care rose and demand for Medicaid coverage grew. Oregon's program, the "Oregon Health Plan," attempted to limit moral hazard and costs by rationing the procedures covered by the plan.

However, as Fruits et al. (2010) found, the Oregon Health Plan enjoyed no cost savings—Oregon's costs were indistinguishable from other states' plans.

> *Within two years of its rollout, the Oregon Health Plan began to see the warning signs that the plan was fiscally unsustainable. Hoped-for cost containment never materialized, provider reimbursements declined, and physicians began restricting access to Medicaid patients…*

- The Oregon Health Plan came under further scrutiny when Baicker et al. (2013) exploited a lottery that was used to ration new enrollees to conduct the first study of the value of Medicaid using a scientific, experimental design technique. The researchers concluded there were no significant health outcome differences between those who randomly received Medicaid access and those who did not. Thus, the signature plan of Oregon–considered an innovation in providing care to the indigent and a signature feature of ObamaCare coverage expansion–proves to be of no material value to the health of the state's poor.

- Indeed, Medicaid assistance may also have the effect of stimulating the size of the population in poverty, especially children. For example, the birthrate for Medicaid beneficiaries is 3.3 times that of non-beneficiaries, even though the share of individuals of childbearing age is higher for the non-beneficiary population. As a result, although Medicaid beneficiaries represent 21 percent of the population, they represent approximately 48 percent of all births. If association of Medicaid with the higher birth rate is causal, then Medicaid's lack of cost sharing and pregnancy benefits may be amplifying the poverty problem dynamically.

Financing Health Care: Conclusion

Predictably, the failure to support the market use of actuarially sound user fees for health insurance, and imposition of actuarially unsound coverage mandates, has engendered a death spiral of rising unit costs, utilization and, ultimately, the loss of affordability of health care.

Although a simple plan of combining MSAs or HSAs with catastrophic care insurance, rated fairly by age and sex and supplied competitively without mandates across states, could have interrupted the death spiral. ObamaCare appears to have chosen, instead, to further distance the consumer from his role in disciplining costs and restraining excessive utilization. Rather, the initial data on the plans as of this writing confirms that insurance plans are even more actuarially unsound, with first-dollar coverage of dubiously preventative care mandates and cross-subsidization among the various age and sex classes of insurance seekers.

"'Public services are never better performed than when their reward comes in consequence of their being performed, and is proportioned to the diligence employed in performing them.'"

Financing Transportation Infrastructure

Adam Smith clearly appreciated the importance of what we today would call transportation infrastructure, not only as a means of encouraging commerce, but also controlling the spatial monopoly that otherwise would restrict output and raise prices. In his day, the remote regions were at a competitive disadvantage to the cities in getting to and selling in the cities, but also suffered from the monopoly that the cities had over goods and services the remote towns needed. The city dwellers also did not want to open up access to remote areas because it was seen as a threat to urban labor because of the lower wage expectations of workers in remote regions. Thus, Smith advocated transportation infrastructure to level the playing field between urban and rural citizens.

> *Good roads, canals, and navigable rivers, by diminishing the expense of carriage, put the remote parts of the country more nearly upon a level with those in the neighbourhood of the town. They are upon that account the greatest of all improvements. ... [However] it is not more than fifty years ago that some of the counties in the neighbourhood of London petitioned the Parliament against the extension of the turnpike roads into the remoter counties.*[66]

Smith was, however, dubious of the efficiency and necessity of government involvement in the finance of infrastructure. In his classically compact way, Adam Smith warned about the problem of a diffuse nexus between performance and payment:

> *Public services are never better performed than when their reward comes in consequence of their being performed, and is proportioned to the diligence employed in performing them.*

He also recognized the strength of the temptation to push finance burdens of public works on the broader society that properly belong on those who selectively benefit from government infrastructure development:

> *The greater part of such public works may easily be so managed, as to afford a particular revenue sufficient for defraying their own expense, without bringing any burden upon the general revenue of the society.*

Although his examples are drawn from the economy and society of the 18th century, they easily could apply to the financing of highways.

As Exhibit 14 illustrates, under public management and finance, major highway infrastructure (measured as freeway lane-miles), has lagged both total freeway vehicle-

miles traveled ("VMT") and peak period travel. This trend is more exaggerated in Oregon, where policies have been in place to retard building of major highways (as illustrated in Exhibit 15) in addition to continuing to rely on a crude taxation finance method instead of user charges.

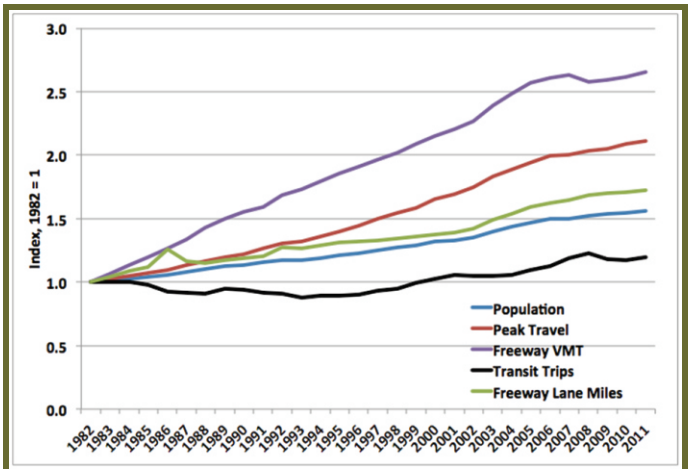

Exhibit 14: Highway Infrastructure and Travel Trends, US 1982-2011

The relatively greater severity of the recessions of 2000 and 2007 in Oregon have kept the underdevelopment of highway infrastructure from manifesting itself more dramatically (relative to the US) in increased delay. However, the transportation policies of the State have made adding highway capacity difficult. As a result, Portland's rank in terms of hours lost to delay per auto commuter among its large metro peers has degenerated from 39th in 1982 to 20th in 2011. In relative terms, this growing waste of travel time resources is worse in the Portland metro area than in metro areas in the nation as a whole.[67]

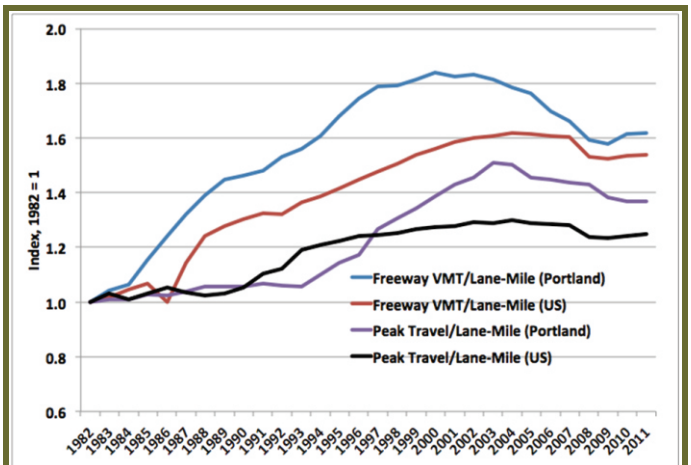

Exhibit 15: Oregon has not Managed the Growth in Highway Utilization and Capacity (US Metro Areas vs. Portland, 1982-2011)

The primary mechanism of road finance in Oregon is a motor fuel excise tax, with a weight-mile tax levied on heavy trucks. Although it is crudely usage-related (in the sense that more travel and fuel consumption yields more revenues), it is not charged differentially in a manner that is linked to the particular locus or road and traffic conditions under which the travel occurs. (More on this point later.)

A 3-county district (TriMet) in the Portland metro area has the most developed transit system and reflects the transit service approach favored by Oregon policy makers. Most of its operating costs are locally sourced. Actual user charges (fares) represent only 24 percent of the revenue for operating costs, while 57 percent comes from a 0.7 percent payroll tax levied on business payrolls in the district. The other 19 percent comes from federal and State operating grants and non-user charge sources. Most of the capital costs are from federal sources which, in turn, are diversions of motor fuel taxes and federal general funds.[68]

Thus, in this important public policy area, too, Oregon has a poor record of reliance on true, user charges. Although the same can be said of the US as a whole, Portland has aggravated the inefficiency problem by costly interventions in land-use regulations in an attempt to treat the symptoms of failure to employ user charges to operate and invest in highway infrastructure in an economically sound manner.

The Rationale for the Current Approach to Transportation Infrastructure Finance

Like most of its sister states, Oregon's reliance on government finance of transportation through taxation, rather than on user charges, is a legacy of historical events.

- First, government assertion of a role in highway transportation extinguished toll-financed, private roadway development and operation, and gradually advanced the notion of no-toll roadways. As Klein (1990) has documented, early roadway development in the colonies was often pursued by private corporations and funded by the levying of tolls. However, the US Constitution in Article I, Section 8, specifically authorizes Congress "to establish post offices and post roads," giving government its first toehold in this activity. Additionally, states were generally not allowed to levy tolls on these federal postal facilities. Thus, even early private development and tolling of roads was limited to secondary routes. Private toll roads were particularly common in California and Nevada in the mid- and late 19th century to facilitate private resource- and land-development activity.[69] State governments took over roadway building and operation in the early 20th century, though they were still built on a quasi-private, toll-finance basis. With the establishment of the Interstate Highway System in 1956, however, a no-toll policy with 90/10 federal-to-state funding model. These ubiquitous "free" roadways stifled

further toll road development, although in the eastern states, toll roads remained, albeit in competition with "free" alternative routes.

- Second, Oregon was a pioneer in usage of motor fuel taxation to finance roads. It introduced the first state tax on motor fuel in the US in 1919, according to Corning (1956). This practice spread to other states within a decade, and a case in Florida established that a gas tax was not a toll, did not violate the "no-toll" policy established by federal policy and could thus be collected even if generated on federal highways. Oregon's 1919 tax was 5 cents per gallon. Only the threat of future increases in fuel efficiency and use of non-taxed fuels (e.g., electricity) is causing government to reconsider the reliance on motor fuel taxes. Today (2013), the Oregon tax is 49.5 cents on gasoline and 54.7 cents on diesel fuel, inclusive of federal taxes. In real (inflation-adjusted terms), current fuel tax revenues for passenger cars are about 40 percent lower, per mile traveled, than in 1919.[70]

- Third, as a side effect of the ease of collection of the fuel tax method of finance, the nexus between use and payment by facility was broken. It puts the State (and federal government) in charge of the allocation of the revenues and selection of roadways to be developed. Benefit-cost, variation in price by time and place of use, and other quasi-private pricing and investment criteria are a threat to State control. The allocation of highway revenues and highway improvements is highly politicized and remains so today.

Public transit pricing and investment went through a similar private-to-public conversion, and moved from a largely user-fee based finance and investment model to a public subsidy model as well.

- Transit service was initially provided exclusively by private companies, and often by competing companies when motor buses became available.[71] Private ownership of urban bus service persisted in the US until the 1970's, and a competitive urban bus model was employed in Brazil until the 1980's, and is still employed today in Japan, by some accounts.[72] Private bus companies were demonstrated to have superior efficiency to public ones by Pozdena (1977) and Mizutani and Urakami (2002). Streetcar systems were also often private, and were commonly developed and operated by electric power companies and other private groups, often to develop urban residential land that was owned by the operator.

- As the use of roads by private automobiles became more prevalent, however, private transit services had difficulty competing with the "free" use of roads engendered by the interstate highway system and state analogues. The passage of the Urban Mass Transit Act in 1964, which offered capital grants to governments who bought private transit services, resulted in a mass conversion of the remaining private transit operators. Although there is no remaining detailed record of private transit services in Oregon, the transition of bus and streetcar lines to public ownership probably followed that of the Key Line in the Bay Area.[73]

Thus, to an important degree, the need to socialize and subsidize supply of transit services has been influenced strongly by the adoption of broad-based tax finance and development of the highway system.

The Rationale of User Charge Finance of Transportation Infrastructure

The basic rationale for true, user charge-based finance is two-fold.

- The economic theory of infrastructure finance strongly emphasizes that the user should be charged, at all times, the short-run marginal cost of usage.[74] That is, all of the resources used by an additional user on an existing facility should be reflected in the user charge that is levied. Thus, a vehicle adding itself to a congested, already capacity-strained facility should be charged more than a vehicle adding itself to the same facility when it is not congested. This is because that vehicle, though it bears its own congestion delay, slows all other traffic materially when a facility is congested, but sees no signal and bears no burden for imposing for that impact without.[75] Similarly, to properly signal wear-and-tear costs, a 12,000-pound truck should pay a higher user fee than a lighter vehicle and when it is using a facility that is more sensitive to wear-and-tear burdens than one that is built to a higher strength standard.

- If the short-run marginal cost-pricing regimen is applied, it is the case in most transportation infrastructure settings that the revenues collected and set aside should be sufficient to underwrite the full costs of adding additional capacity. However, investments in new capacity and/or preservation should be pursued only when the benefits (in reduced travel delay or road repair costs) exceed the construction and operating costs of the improvements. If this investment rule is followed, then a link is forged between the delay and wear-and-tear costs reflected (and collected) in the tolls and the virtue of improving the facility to spare these costs in a benefit-cost compliant sense. That is why the adjustment upward in tolls as congestion mounts is important, because it increases the funding potential of the set-aside funds.[76]

The reason that the current method of motor fuel- and weight-mile-based charges for roads is inappropriate is because it levies a relatively constant charge per mile of use regardless of the immediate conditions of the use being made of the facility. For example, as any driver knows, the level of congestion varies dramatically by the time of day of use, as well as the direction of travel, and even by the day of the week. Similarly, the amount of wear-and-tear that the vehicle imposes on road surfaces and foundations, bridges, and other structures varies with the type of materials, construction techniques, and the weight and spread of that weight (over the vehicles' various axles).

Exhibit 16 shows the value of the delay burden imposed by an additional vehicle by time of day and day of the week for a heavily used urban freeway segment.

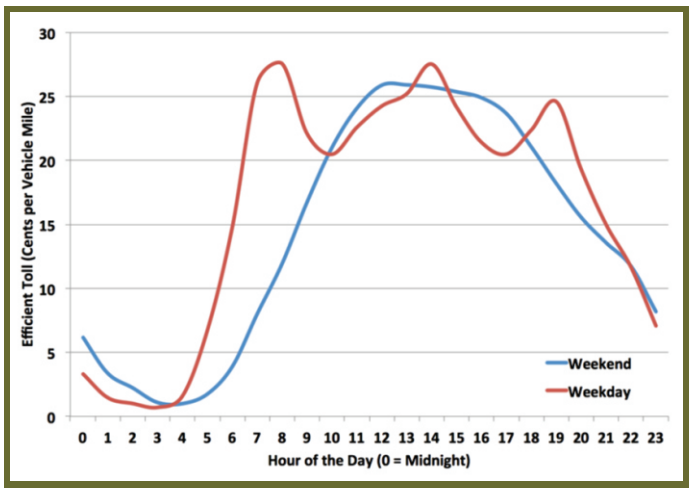

Exhibit 16: At Congested Times, an Additional Passenger Vehicle Imposes Delays on Others
(Cost per Vehicle Mile of an Additional Passenger Mile, Various Times of Day)[77]

These variations are caused by the variations in the demand placed on the capacity of an urban freeway (i.e., the number of vehicles wishing to use the facility). An efficient user charge would implement a toll with analogous variations.

In sharp contrast, the current method of financing roads uses a motor fuel tax that is invariant in the revenue collected to the specific conditions. This results in the following distortions:

- ***Overuse of existing roads relative to their capacity.*** This causes traffic turbulence[78] that actually reduces the number of vehicles that can traverse a mile of roadway per hour. This, in turn, creates the appearance of the need for additional capacity when none, in fact, may be economically justified or effective. It also results in inadequate collection of revenues to develop new capacity when it is actually needed. One of the reasons that current highway trust funds are inadequate to the perceived "need" for new structure is this failure to avoid hyper-congestion, and the resulting exaggeration of need.

- ***Distortion in the time of day and mode of highway travel.*** In particular, use of high occupancy vehicles (carpools, vanpools, and buses) on highways is very likely lower than it otherwise would be.

- ***Wasteful loss of time by users of the facility that otherwise would have productive use.*** If roads were priced using user charges, instead of broad-based taxes, travel times would be lower and travel service would be more reliable. The total cost to the user of travel would be lower than today, when the value of travel time savings is figured into the cost of travel.

- ***Distortion in land-use decisions*** is also caused by the unnecessarily high time cost of travel.

Importantly, the failure to properly price highway infrastructure also distorts transit policy. In particular, this has induced policy makers to develop and subsidize costly, dedicated rail, bus or bicycle guideways. This is an effort to create an alternative means of urban travel that can compete with under-priced roads.

Unfortunately, the cost of providing transit service is high, as illustrated in Exhibit 17 in the Oregon setting, according to Charles (2013). Indeed the operating costs per passenger mile and per trip are generally higher than the analogous costs for automobile use. Additionally, the amortization or depreciation of capital expenditures are not included in operating cost calculations. The capital costs of acquiring the necessary right-of-way, vehicles, and constructing dedicated guideways is particularly high, especially for rail-based properties. There is little doubt that, in most settings, better utilization of roads by high occupancy vehicles is less costly than building expensive transit services on dedicated rights-of-way.

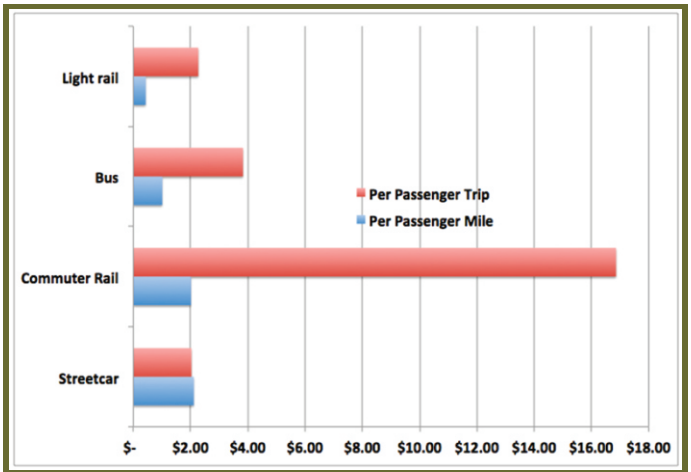

Exhibit 17: Operating Cost of Oregon Transit Services, per Passenger- and Trip-Mile (2012)[79]

As illustrated in Exhibit 18, the capital cost of light rail systems of the type employed in Oregon and other US cities, generally exceeds the $10 to $20 m. per mile cost of building analogous freeway lanes according to Hoback (2008).

In addition, if a freeway lane were dedicated to high occupancy vehicles (buses), the seated passenger capacity on a busway can approach six times the capacity of a light rail and about twice that of heavy rail line, according to Samuel (2002).

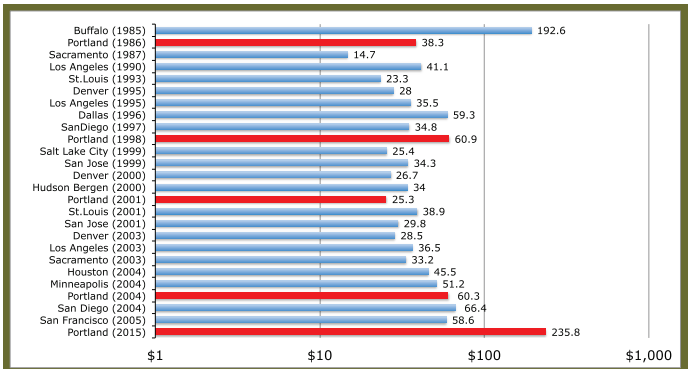

Exhibit 18: Capital Costs per Mile for Light Rail, by Year Built, in Millions of 2007 Dollars

Although rail transit may seem to make sense in areas of extreme population and job density (such as New York), even then, adding capacity is staggeringly expensive. New York's 2nd Avenue underground line, for example, is costing *$1.5 billion* per mile of track – far more than the benefits the users will ever receive.

Financing Transportation Infrastructure: Conclusion

Under the aegis of tax-based finance and public subsidy, the quality, reliability and effectiveness of transportation services are deteriorating in all metro areas, and especially in Oregon. User charge finance of transportation infrastructure has the potential to both utilize existing highway capacity more effectively, and if coupled with market-like investment criteria, fund cost-beneficial improvements in a timely fashion.

With user charge finance, travel times would improve, and the total cost of travel to users (in terms of time lost and out-of-pocket expenses) would be lower. Additionally, with the mispricing of highway capacity resolved, there would be no need (or economic rationale) for broad-based taxation to subsidize transit services. The existing operations would face more appropriately priced highway services, and thus not need subsidy to compete. In Oregon's case, the need for aggressive land use development restrictions also could be eliminated with the elimination of location decision distortions from mis-priced transportation.

Two policy changes are necessary to support a transition away from broad-based tax finance of highways.

- A new system of pricing would have to be employed that varied more intimately with the capacity- and wear-and-tear costs imposed by vehicles under various traffic conditions and road characteristics. Such technology already exists, and has been demonstrated in US cities, and is planned for deployment in Europe and elsewhere. It exploits so-called small on-board units that employ GPS-location technology and anonymous, cellular, or smart card based payment systems. First applied to heavy trucks, by 2008 the technology had been installed in over one million vehicles in the Czech Republic, Germany, the Netherlands, and Poland.[80] The rapid development and miniaturization of the technology has led to plans by the Netherlands to price highway travel on all roads by vehicles of all classes.[81]

- Reform of the investment decision-making process to base decisions on a benefit-cost framework, and dedication of collected revenues by facility or corridor. By collecting revenues and setting aside the revenues generated on a facility- or corridor-specific basis, the current, politically gerrymandered system of investment decisions, and the current levels of wasteful congestion could be managed without difficulty.

How to manage the political transition to such specific user charges is a discussion for another paper. However, Oregon has at least begun to study the effects of efficient tolling on its road finance system.[82] In addition, in other locales, such as Indiana, some transition is occurring through the transfer of operating and pricing control of formerly public highways to public-private partnerships who then have a

natural incentive to price roads to manage capacity utilization, maintenance, and improvement activity in a cost-effective, beneficial way.[83]

Financing Public Safety

Public safety has three major elements: policing, fire protection, and correctional treatment of wrongdoers. The latter can take the form of community services or incarceration. In Oregon, as in US states in general, the user charge contribution to these services is trivial. (See Exhibit 5.)

The Rationale for Financing Public Safety using Broad-Based Taxation

The oft-offered rationale for broad-based taxation to support public safety is that public safety is inherently a public good. That is, protecting others' safety has externality or spillover effects on others in the community. There is some validity to this claim, in that criminals and fires can have effects on other persons or property if not addressed aggressively the first time or place that a criminal act occurs or a fire breaks out. Similarly, corrections institutions house individuals who are mobile, so that if one jurisdiction fails to pursue or maintain the incarceration aggressively, that person can use their ultimate freedom to seek out other victims.

By this logic, therefore, crime and fires are a risk to the community as a whole and should be funded accordingly. Indeed, Spiegel (2003) argues that public safety fits the two criteria of a public good that economist Paul Samuelson articulated in the 1950's.

> *Following [Samuelson's definition of public good] public safety is a non-excludable and non-rivalrous commodity. As a non-excludable commodity non-paying consumers are not (and cannot be) excluded from consuming this product. That is, just by staying in a community (or a certain locality) you get to consume its public safety independent of how much you have contributed towards the provision of this good. Second, public safety is not a rivalrous commodity. That is, when one consumer enjoys the high level of public safety the amount of public safety enjoyed by other consumers of the community is not reduced.*

This, then, becomes the economic rationale for broad-based finance—i.e., if one lives in a community that is safe because of the commitment of public spending on safety, a newcomer to the community could enjoy that control without having to contribute to its finance. Thus, some broad-based system of taxation is necessary to extract his "fair share" of the costs of providing the safety services of that community.

The Rationale for Financing Public Safety using User Fees

As is often the case, the usual argument for finance based on broad-based finance of public safety has logical appeal at first glance. Additionally, at a certain scale of public safety, such as national defense, it is clear that whatever the level of national defense, all citizens are under the common umbrella and features of that defense. At a state and local level, however, when defending primarily against local crime and fires, it is not as clear that the "public good" justification is necessarily applicable.

At the state and local level, criminality and fire risk is highly localized—not a general defense, as in the notion of national defense. The fact that a person pays, through property or other broad-based taxes, to support public safety expenses does not mean that they receive defense against crime and fire risk in equal measure to others in the community.[84] Moreover, amongst the members of the community, the risk of incidence of crime or fire varies widely depending upon the attractiveness of the activity, wealth, or vulnerability of the individual. This creates two types of inefficiencies.

- Inadequately differentiated supply or responsiveness of the public safety officials to the individual circumstances and risks.
- Reduction in the incentive that individuals have to self-mitigate against risk, given that they are already paying for police and fire services.

Greater use of user charges would thus improve the efficiency and equity of the supply of public safety services. Public or private safety officials would be better incentivized to provide timely and adequate response if they did not receive payment unless they responded in a manner consistent with the user fee they levied.[85] Conversely, if the nature of the individual, property, or neighborhood is such that it requires a disproportionate safety response (and a higher user fee), an incentive to redress the sources of high risk is warranted. In either case, these differentiated incentives are absent with the use of broad-based taxation that reflects neither the cost nor benefit of safety responses.

Empirically, there is evidence that the private market behavioral response to public safety threats is consistent with the fact that public safety is not supplied or demanded in the equal-protection manner implied by characterizing safety as a public good. The inadequacy and insufficient differentiation of tax-based public safety finance is evidenced by the many casual facts and formal studies of the issues.

> *"[T]he fact that private security firms in the US employ more staff and resources than federal, state, and local governments combined is evidence that the tax-based model undersupplies desired safety services."*

Policing

The evidence of dysfunction of policing incentives under broad-based taxation in the public sector is supported by a large body of evidence and behaviors.

- According to Beattie (2012), in early 19th-century Great Britain, the police function was entirely privatized and performed by private watchmen and "thief-catchers" funded by private individuals and incentivized by rewards for catching criminals. Legal punishment was compulsion to return stolen property or to pay restitution.

- As Slansky (1998) has argued, the fact that private security firms in the US employ more staff and resources than federal, state, and local governments combined is evidence that the tax-based model undersupplies desired safety services.

- Stewart, J. (1985) and Spitzer and Scull (1977) link the rapid growth in the modern private policing enterprises to the de-prioritization of certain classes of crimes by public safety providers, evidencing the non-public-good nature of policing services.

- Cameron (1964) describes how, in some locales, and for certain crimes, criminals have in the past been arrested and dealt with in private courts staffed by federal judges with the power to send the convicted to private prisons.

- Justice officials seem to recognize the need to collaborate with private providers. In South Carolina, for example, all Security Officers have the authority and power to make an arrest just as do Sheriff Deputies.[86] US Department of Justice (2009) details the efforts of the DOJ to organize cooperative public-private policing consortia.

- Minneapolis SafeZone, a precursor to the Safe City program, connects beat officers with private security personnel in more than 35 organizations through e-mail, radio, cell phones, pagers, and other means to share crime alerts, crime tips, pictures, video, incident reports, and online victim impact statements. The Minneapolis Police Department reported a 44 percent reduction in robbery in the first year and, most notably, a nearly 100 percent conviction rate. The program's 30 Target Corporation-supplied cameras, and hundreds of additional cameras controlled by SafeZone members, have led to more than 750 arrests.[87]

Fire Fighting Services

The public good argument is even more difficult to make for fire-fighting services. Residential and commercial mortgage and other property contracts typically contain provisions requiring fire insurance be held to protect those with liens on the property. Thus, the primary purpose of fire fighting services is to deal with fires promptly to limit damage and to keep the fire from propagating to other properties. The latter is, indeed, an externality or spillover effect of an unattended adjacent fire, but recognition of this issue does not require broad-based tax finance of municipal fire departments.

- Subscription fire departments, in fact, were the norm historically in the early US, whereby a property owner would subscribe to the services of a particular private fire brigade that would, in turn, be paid for the costs of extinguishing a particular fire. Case-iron plaques above the front door identified the subscribed-to fire brigade. The price paid for the actual services of the fire brigade could be written into the subscription agreement and made a function of the speed of response and containment of damage.

- Modern examples exist today such as that in Chatham County, Georgia. The Southside Fire Department (SSFD), a privately run and subscription-funded fire, EMS, and security company. In existence for 52 years, the SSFD services half of the County on a budget of only $10 million from the subscription fees. According to Murray and Melchiorre (2011), the discount offered on the homeowner's fire insurance premium outweighs the cost of the subscription itself.[88]

- Other models that would better introduce user fees in fire suppression are outsourcing services to private fire companies, who could be paid on a performance basis by an existing public fire district. See, for example, Stanek (2006).

Correctional Services

The current, typical practice regarding incarceration involves the sentenced individuals being sent to publicly operated institutions, at public expense using broad-based taxes as revenue sources. As the cost of publicly run and tax-financed correctional facilities rises, the notion of charging inmates for services is gaining acceptance. As reported in a recent Time magazine article,[89] correctional institutions in California, Florida, Illinois, New York, and Texas charge fees for clothing, blankets, administrative fees, supervision and transportation fees, or other goods or services provided the prisoner. Other states and counties are considering daily fees analogous to lease or hotel fees.[90] Such user-fee based incarceration offers the prospect of reducing public costs and providing another incentive for individuals to not risk incarceration.

- The fees could be levied not only as liens on income or property that the prisoner earns or holds outside the prison, but also could be levied as an offset to a wage-based in-prison work program. The latter would remove the impression that the work program is "forced labor."[91] Rather, it would provide the prisoner an incentive to work hard and avoid accumulating debt in prison. Inmates currently are paid very low wages in the Federal Prison Industries program, which raises this concern. Although all physically capable federal inmates are required to work, only 16% of federal inmates work in "factories" analogous to the private sector. If they were "paid" a market wage, against which their in-prison fees were deducted, some the net revenue effect might be similar, but would better assert a market-like environment.

- Being in a private market-like environment may have benefits in inmate recidivism. At least, it is the case that inmates in privately run corrections facilities appear to have a lower recidivism rate.[92]

Financing Public Safety: Conclusion

Financing public safety through user charges, rather than broad-based taxes, affords an opportunity to provide more responsive, cost effective, and demand-tailored service than is currently provided, especially in the provision of police and fire services. In the policing function, this is occurring already in a stealth manner as progressively more services are provided by private, fee-charging entities and public officials recognize the utility of cooperative ventures with the private sector. Existing institutional arrangement would have to be disrupted in order for the private sector to exercise the same force of law as existing law enforcement, but Guillory and Tinsley (2009) articulate the potential role of private, subscription-based "patrol and restitution." Similarly, private subscription provision of fire services has empirical precedent, and but for the lack of laws facilitating this in most jurisdictions could be a more economical and responsive means of providing these services.

Charging a fee to inmates in a correction setting also has precedent, and public policy is moving slowly in this direction as the cost of incarceration in public settings rises. The levy of fees may serve as an additional deterrent, but the collection of the fees from the criminal class poses a natural limit to the spread of this approach, as does the slow adoption of private provision of correction services.

CONCLUSION

Oregon, like most states, has relied increasingly on broad-based taxation rather than charges to the user to finance services in education, health care, infrastructure operation and development, and public safety. The result has been to weaken the ability of the citizen-user of these services to influence decision processes, resulting in loss of accountability and responsiveness. The attendant centralized decision-making cannot hope to tailor services to the diversity of user needs and circumstances. In addition, centralization of authority opens policy making to undue influence by special interests.

The result is less effective, less tailored, and more costly provision of services. To paraphrase Benjamin Franklin's concern, the public, rather than being sovereign over the public sector, has become subject to its will and whim. All of the major functions of state and local government are affected to varying degrees by this inverted notion of whose needs and preferences have primacy.

K-12 Education. This is perhaps the area that displays the greatest dysfunction by failing to allow a significant role for user charges and consumer choice. One-size-fits-all policies, cloaked in the guise of equalization of funding, operate with little performance accountability and tailoring to user needs. The evidence is clear from countries where there is greater reliance on user charges through direct parental tuition charges and/or provider-blind public subventions. When parents control the school's funding, student performance improves significantly. This is because there is greater inter-school competition, institutional accountability, greater flexibility in the services delivered and variety in the scale of the schools that provide the service.

> *"To paraphrase Benjamin Franklin's concern, the public, rather than being sovereign over the public sector, has become subject to its will and whim. All of the major functions of state and local government are affected to varying degrees by this inverted notion of whose needs and preference have primacy."*

Higher Education. Like most land-grant states, Oregon's higher education landscape is dominated by publicly financed and publicly operated colleges and universities. The fiscal burden of state-dominated higher education has resulted in some increase in reliance on tuition charges. Nevertheless, considering that most of the benefits of higher education flow to the individual, and not the general public, subsidizing every student makes little sense, and distorts parental and student decisions about choice and completion of degrees. The institutions themselves would be more responsive to rapidly evolving educational needs if the institutions, like privatized universities, were more intimately dependent on the customers' willingness to pay. The public sector could then focus more effectively on eliminating financial barriers faced by students with high scholastic potential but limited resources.

Health Care. Health care is another area where government intervention in health care finance fails grievously to engage user charges and competitive forces. Through the imposition of actuarially unsound coverage mandates, and the failure to engage the user in payment for non-catastrophic care services government policy has created a death spiral of rising unit costs, utilization and, ultimately, the loss of the affordability of health care that was enjoyed by most in the early 20th century. Simple means are readily available to properly introduce user charges, as demonstrated by the superior performance and fractional cost burdens of health care in places like Singapore.

Transportation Infrastructure. Nominally, highway infrastructure is financed by "user charges," primarily in the form of flat-rate taxes on fuel consumption. There is a crude relationship between the quantity of travel, fuel consumption, and the charges paid. Unfortunately, however, they do not match the actual costs imposed by use in the diverse circumstances that exist on our roadways. These costs vary with the levels of burden on existing capacity and the wear-and-tear imposed by vehicles of various types and the specific facilities they use. Tolling technology now permits this differentiation. This offers the prospect that user charge finance, coupled with benefit-cost based investment decisions, could address congestion, deterioration, and other infrastructure challenges.

Public Safety. Even in the area of public safety the use of user charges, rather than broad-based taxes, affords an opportunity to provide more responsive, cost-effective, and demand-tailored service. Here, user charges could play a greater role in incentivizing the public providers of service. The market is clearly willing to pay for tailored, responsive services as manifest by the explosive growth of alarm systems, private police, and guard services that is occurring already occurring. Mostly outside of Oregon, however, public officials also recognize the utility of cooperative ventures with the private sector in direct provision of police and fire services, and corrections facilities.

In summary, as Oregon struggles with its fiscal challenges, it should consider re-embracing user charges—both as a means of finance and to provide a means by which citizens can communicate their preferences for services.

ENDNOTES

1. Isaacson (2003), p. 454.

2. Adams (1788) called such tendencies a "tyranny of the majority." The 19th century philosopher Alexis de Tocqueville (1835) echoed the concern that the judgment of the wise would be subordinated to the prejudices of the ignorant. Olson (1965) argues that the distortions come from well-organized minorities, with a concentrated self-interest, who enjoy public choices that favor them over those of the majority.

3. Although most scholars attribute the statement to Franklin, it was expressed in print only by Alexis de Tocqueville in de Tocqueville (1835).

4. Direct taxation is taxation of an individual or business. An indirect tax is one that, though ultimately borne by individuals or businesses, is levied on goods, services or property.

5. David B. Levenstam (1999), "Constitutional Challenge: Repealing the 16th Amendment wouldn't kill the income tax," Reason Magazine, January.

6. Oregon also employs a weight-mile tax on heavy trucks.

7. An exception is unemployment insurance, which is a state program for the first 26 weeks of unemployment.

8. Musgrave, R.A. (1959) and Musgrave, R.A. and P.B. Musgrave (1979).

9. Musgrave, R. A. (1939).

10. Smith, A. (1776). Book V, Chapter 1, Part II, p. 719, para. b20.

11. Smith, A. (1776). Part VI, Section II, Chapter II, pp. 233-4, para. 17.

12. Smith, A. (1776). Book I, Chapter 8, p.96, para. 36.

13. Smith, A. (1776). Book V, Chapter I, Part II, p. 710, para. c2.

14. Author from NCES and US Census data, retrieved in 2013.

15. See Mann (1846). In Oregon even more extreme views prevail. While serving on an Oregon Governor's Quality Education Commission, this author was told by a highly placed state education official that, "The real purpose [of K-12 schooling] is socialization, not education."

16. Some proponents of subsidized K-12 education argue that it is not external benefits, but external cost considerations that justify special subsidization for K-12 education to encourage achievement. In particular, those with less than a high school diploma display greater anti-social behavior and impose subsequent higher costs on society. An example of this posture is that of Greenstone et al. (2012) who report that in 2010, the rate of incarceration was three times higher for those without a high school degree than those with a degree. Similarly, they point out that the poverty rate for children whose mothers did not have a high school degree is nearly twice that of a mother with a degree. However, the social cost argument is irrelevant to the issue of tax- versus user-cost-based finance of K-12 education per se, since these behaviors developed and grew under the current system of tax-supported K-12 education. Indeed, these effects could easily be a manifestation of the fact that broad-based, tax subsidization impairs the productivity and responsiveness of K-12 education.

17. Selcer and Belkin (2006), Table 14.1, Page 301. Note that the 1840 literacy rate included all sexes and races in the computation. Hence, the rate of illiteracy in southern states is low because of the education status of slaves. The lowest rate was 78 percent in South Carolina. In Scotland, Adam Smith himself, though born to modest prospects, spent five years at the Kirkcaldy Grammar School until enrolling in the university at age 14 for three years. The costs were paid respectively by his mother and some funding provided in the will of his late father.

18. Article 23.

19. Patrinos (2010).

20. <http://www.eng.uvm.dk>, retrieved 2013.

21. Fraser Institute (1999).

22. Ripley, A. (2013).

23. <http://data.mineduc.cl/>

24. Böhlmark and Lindahl (2012).

25. Tooley (2006). User-financed education services offer higher quality as well as greater accessibility. Tooley reports on visits to 799 schools in India, Ghana, China, and Kenya. Of these, 25 percent were government, and 75 percent were registered or unregistered tuition-financed private schools. Although fees at the schools that levied user charges could approach 10% of family monthly income, families paid for these schools because public schools were often inaccessible or havens of feather-bedding. For example: In Hyderabad, when Tooley's researchers arrived at the schools unannounced, teaching was taking place in only 75 percent of government schools, versus 98 percent of registered and 91 percent of unregistered schools. In Delhi, learning was going on in

only 38 percent of government schools, versus 70 percent of the tuition-financed schools.

26. <http://www.ncee.org/programs-affiliates/center-on-international-education-benchmarking/top-performing-countries/australia-overview/australia-system-and-school-organization/>

27. <http://www.heritage.org/research/reports/2010/11/school-choice-in-canada-lessons-for-america>

28. Programme for International Student Assessment, a uniform international comprehension testing protocol.

29. See, for example, Hanushek (1996), Card and Krueger (1996), Verstegen and King (1998).

30. Indeed, Psacharopoulos (2006) emphasizes the importance of the institutional structure of schooling, and argues, "Decentralized education systems are associated with a higher level of achievement in international tests."

31. "The education of the common people requires, perhaps, in a civilized and commercial society, the attention of the publick, more than that of people of some rank and fortune." Smith, A. (1776), Book V, Chapter I, Part III, p. 784.

32. NCES Digest database, Table 208.

33. See Exhibit 5.

34. It also should be noted that the explicit and implicit costs of public university infrastructure, such as the opportunity cost of the public land and the depreciation expenses associated with structures, are not included in the public cost share reported herein.

35. The relationship between human capital accumulation and growth has been demonstrated empirically by many economists over the years, including Solow (1956), Psacharopoulos (1985), Mankiew et al. (1992) and others. Mankiew et al. (1992), for example, find that a 10 percent increase accumulated human capital increases labor income by approximately 3 percent.

36. See Psacharopoulos (1973) and Schulz (1963), respectively.

37. Indeed Long (2004) finds that the decision to seek higher education is insensitive to the cost of attendance. Further, Lovenheim and Reynolds (2011) find that nonattendance is decreasing among college-age students despite changes in student loan availability and independently of state university costs.

38. Pledging future labor to an employer in turn for financial assistance is called debt peonage, and was abolished with the 13th Amendment to the US Constitution as a form of slavery.

39. "The most efficient and equitable financing mechanism might be to provide the initial funding for a student loan scheme. Student loans contribute to efficiency because they provide incentives to students to work hard and choose subjects leading to employment. They also contribute to equity in the sense that those who will later on have higher incomes…pay for their own education."

40. NCES Digest, 2013. Tables 377 and 379.

41. In 2006, Ms. Kirby Dyess, a high-tech executive and vice president of the State Board of Higher Education, proposed that the board sell or close at least one of Oregon's seven state universities.

42. <https://public.health.oregon.gov/Licensing Certification/Pages/index.aspx>

43. See, for example: <http://www.clackamas.us/healthcenters/clinics.html>

44. <http://www.ohsu.edu/xd/outreach/oregon-rural-health/clinics/clinics-directory/index.cfm>

45. Insurers wishing to sell products in Oregon must submit their products and rates for review annually. Under the Affordable Health Care Act ("ObamaCare"), the State of Oregon is running its own exchange called Cover Oregon. ObamaCare has imposed overarching regulations on the plan offerings that individuals may obtain from the Oregon exchange or companies can obtain for their employees. Oregon is also participating in the federal program to encourage formation of non-profit, cooperative insurers. However, the fact remains that the health insurance market has regulated entry and coverage mandates.

46. Oregon does not itself operate the insurance plans offered under Medicaid, but rather compensates third-party insurers and providers. This coverage is provided by insurers and provider networks who are willing to participate in Medicaid. The individual states have some latitude to configure the coverage features of these plans, which are focused on providing access to insurance to low-income, handicapped and other special classes of the population. Oregon famously received a waiver from the Federal government to operate its Medicaid services under the name Oregon Health Plan and take the approach of proscribing the treatments and procedures that would be covered under its plan. Oregon's Medicaid program has had limited coverage and provider opportunities. County clinics and a small number of private networks offer provider coverage.

ENDNOTES *Continued*

47. Oregon also embraced the Medicaid State Child Health Initiative Program (SCHIP) which provides health insurance to children in families with incomes as high as 300% of the Federal Poverty level. Oregon's SCHIP implementation is described at <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Childrens-Health-Insurance-Program-CHIP/CHIP-State-Program-Information.html>. Ironically, the federal expansion of SCHIP was passed a year after the non-covered rate for children reached a 20-year low, and consisted mainly of children whose families qualified for Medicaid but chose not to use it.

48. The federal government is temporarily underwriting the costs of expanded eligibility and coverage, but states will be responsible for these costs in the future.

49. <http://www.medicaid.gov/AffordableCareAct/Medicaid-Moving-Forward-2014/medicaid-moving-forward-2014.html>

50. OMIP was essentially a regulated, high-risk pool facility, with regulated maximum rates and financed by levies on health insurers. However, OMIP is being phased out since ObamaCare no longer allows scoring of insureds on the basis of pre-existing conditions. The Oregon regulatory authority overseeing the Oregon exchange is the Oregon Health Authority (OHA).

51. <https://public.health.oregon.gov/Licensing Certification/Pages/index.aspx>

52. As Arrow (1963) put it, "The customer cannot test the product before consuming it.…"

53. Even absent moral hazard issues, insurance theory argues that it only has applicability in settings where the risk insured health problem is unpredictable, rare, and costly to the consumer to experience. Otherwise, insurance degenerates into an arbitrary cost-sharing scheme (with attendant costs of administration) and potentially an encouragement to over-consumption of services.

54. As Kleiner and Krueger (2008) point out, at least 29 percent of all jobs in the US require some form of licensing and that supply of the licensed service is depressed, and wages elevated.

55. Indeed, as Bardo (1967) recounts, New York did not pass a medical practice statute until 1927. The various contending institutions and associations of medical professionals recognized that such laws would restrict their ability to supply physicians to the marketplace.

56. Friedman (1962).

57. These relaxed laws generally apply to nurse practitioners, who generally have masters degrees. <http://www.nytimes.com/2012/12/16/opinion/sunday/when-the-doctor-is-not-needed.html?pagewanted=1&_r=1&ref=todayspaper&>

58. First-dollar coverage is the popular term for 100 percent reimbursement by an insurance policy.

59. <http://www.cbs.state.or.us/ins/sehi/mandated_health_provisions.pdf>, retrieved June 2013.

60. <http://www.hhs.gov/healthcare/facts/factsheets/2010/07/preventive-services-list.html>, retrieved May 2013.

61. <http://www.bcbsnc.com/assets/campaigns/public/preventive/pdf/hcr_preventive_services_grp.pdf>

62. Austin Frakt (health economist) at: <http://theincidentaleconomist.com/wordpress/cost-savings-vs-cost-effectiveness-and-preventative-care/>.

63. The HSA is an evolution of MSAs. They were first authorized on an experimental basis in the mid-1990s, over the strong opposition of Senator Ted Kennedy, and were not offered by Oregon insurers. HSAs by were approved by President George W. Bush in December 2003 as part of Medicare Prescription Drug Improvement and Modernization Act of 2003 (P.L. 108-173).

64. See: <http://www.moh.gov.sg/content/moh_web/home/costs_and_financing/schemes_subsidies.html>. Their MediFund and ElderShield programs address poverty and old age issues.

65. Source: The author from US Census, Bureau of Labor Statistics and the Health Care Financing Administration data.

66. To residents of the Portland metropolitan area, many policies appear to be designed to maintain a single-center city policy, focused on the City of Portland. These policies include downtown parking restrictions, urban growth boundary limitations on suburban and ex-urban development, bias toward rail transit service with the City of Portland downtown as the hub, lack of support for rubber-tired transit services to or between outlying areas, etc. From Smith's perspective, this is not only prejudicial to other locales but intentionally anti-competitive.

67. The data source for these exhibits is the Texas Transportation Institute. <http://tti.tamu.edu/documents/ums/congestion-data/complete-data.xls>

68. Source: <http://trimet.org/about/funding.htm>, retrieved October 2013.

69. See, Klein and Yin (1996), Beito and Beito (1998).

70. Interestingly, the average fuel efficiency of today's fleet of vehicles (24.6 mpg) is not radically different from Henry Ford's Model T, which got 21 miles per gallon. See: <http://www.csmonitor.com/Innovation/2012/0307/From-Model-T-to-Prius-13-big-moments-in-fuel-efficiency-history>, and <http://www.csmonitor.com/Business/In-Gear/2013/0406/Average-fuel-economy-of-US-cars-reaches-an-all-time-high>.

71. See, O'Toole (2010).

72. Mizutani and Urakami (2002).

73. See: <http://www.actransit.org/about-us/in-the-community/history-of-east-bay-public-transportation/>.

74. The "short-run" focus means that only costs that vary with use should be included in charges. Charges for costs that do not vary with use (such as the fixed costs of the facility) should not be included in efficient pricing.

75. This capacity charge element of an efficient, marginal cost-based user fee is often referred to as "congestion pricing."

76. There are technical details to implementing this investment rule. These are described in the benefit-cost manual of the American Association of State Highway and Transportation Officials. See AASHTO (2010). This author is the primary author of this official manual.

77. The data from which this chart is derived is actual data for I-405 in Southern California in 2013 at traffic counter 764578. The value of the delay imposed uses a value of travel time of $7 per hour.

78. This state of affairs, called hyper-congestion, actually allows fewer vehicles to use a roadway per hour at any given speed, creating the illusion of insufficient capacity.

79. Charles (2014).

80. <http://www.roadtraffic-technology.com/projects/lkw-maut/>

81. <http://utcm.tamu.edu/mbuf/2010/presentations/pdfs/4-21_Jongman.pdf>

82. Batten, Pozdena et al. (2011).

83. The Indiana East–West Toll Road is a 156-mile toll road. It is owned by the Indiana Finance Authority and operated by the Indiana Toll Road Concession Company, a public-private partnership among Spanish Cintra Concesiones de Infraestructuras de Transporte and Australian Macquarie Atlas Roads.

84. Specifically, if public safety suppliers had incentives to treat the initial event aggressively and appropriately, there is no other externality to be addressed. Indeed, it is only the fact that the initial event is not treated aggressively that may propagate the behavior to others in the community. Seeing others treated lightly for their crimes, for example, offers an incentive to further criminality to the extent that the price of criminality is perceived as low by the offender. Therefore, it actually may be the failure or inadequacy of the initial treatment of the individual or event that creates the risk of propagation of the unsafe environment to other locations, persons and property. Thus, from the perspective of this paper, the question becomes, "How can individual police, fire and corrections efforts be incentivized to do their job right in the first instance?"

85. Some public agencies charge for answering false alarms from private security systems. Even here, a fee structure proves its usefulness. When fees are implemented, false alarm rates drop by as much as 90 percent. See: <http://www.esaweb.org/?TE_FalseAlarms> , retrieved October 2013.

86. Under South Carolina Code of Laws, Title 40, Chapter 18.

87. US Department of Justice (2009).

88. Although SSFD is a volunteer department, the model could be extended to for-profit operations. As with the original model of subscription fire brigades, multiple brigades competing on quality of staff, equipment and service could coexist in such a market. If, even with multiple providers, there were unsubscribed households, a simple mechanics-lien ordinance requiring unsubscribed users to compensate a brigade for the cost of their services could be employed to address the concern of spreading fires to or via unsubscribed properties.

89. "Welcome to Prison. Will You Be Paying Cash or Credit?" <http://nation.time.com/2013/08/21/welcome-to-prison-will-you-be-paying-cash-or-credit/#ixzz2dEFSsrcR>.

90. "California county to charge prisoners for their jail stay," Aaron Smith @CNNMoney November 9, 2011.

91. Inmates currently are paid very low wages in the Federal Prison Industries program, which raises this concern. As a result, only 16% of federal inmates work. If they were "paid" a market wage, against which their in-prison fees were deducted, some the net revenue effect might be similar, but would better assert a market-like environment. See: <http://www.bop.gov/inmate_programs/work_prgms.jsp>.

92. Lanza-Kaduce et al. (1999).

BIBLIOGRAPHY

Acemolglu, D. and J. Angrist (2000). "How large are human capital externalities? Evidence from compulsory schooling laws," NBER Macroeconomics Annual, Vol. 15.

Adams, John (1788). *A Defense of the Constitutions of Government of the United States of America*, Vol. 3, 291.

AASHTO (2010). "User and Non-User Benefit Analysis for Highways," 3rd Ed.

Baicker, Katherine Ph.D.; Sarah L. Taubman, Sc.D.; Heidi L. Allen, Ph.D.; Mira Bernstein, Ph.D.; Jonathan H. Gruber, Ph.D.; Joseph P. Newhouse, Ph.D.; Eric C. Schneider, M.D.; Bill J. Wright, Ph.D.; Alan M. Zaslavsky, Ph.D.; and Amy N. Finkelstein, Ph.D. (2013). "The Oregon Experiment–Effects of Medicaid on Clinical Outcomes for the Oregon Health Study Group," New England Journal of Medicine, 368:1713-1722, May 2.

Batten, C. and R. J. Pozdena (2011). "Efficient Fee Highway Cost Allocation Study: 2011-2013 Biennium Study," ECONorthwest for the Oregon Department of Transportation.

Beattie, J. (2012). "The First English Detectives: The Bow Street Runners and the Policing of London, 1750-1840," Oxford University Press.

Beito, David T. and Linda Royster Beito (1998). "Rival Road Builders: Private Toll Roads in Nevada, 1852-1880," Nevada Historical Society Quarterly 41 (Summer), 71–91.

Böhlmark, A. and M. Lindahl (2012). "Independent schools and long-run educational outcomes—evidence from Sweden's large scale voucher reform," IFAU.

Cameron, M. (1964). "Booster and the Snitch: Department Store Shoplifting," London: Collier-MacMillan Ltd. Cant, MC.

Card, David and Alan B. Krueger (1996). "School Resources and Student Outcomes: An Overview of the Literature and New Evidence from North and South Carolina," Journal of Economic Perspectives, Volume 10, Number 4, 31-50.

Charles, John (2014). "Why Cities and Counties Should Consider Leaving TriMet," Cascade Policy Institute.

Cohen, Joshua T., Ph.D.; Peter J. Neumann, Sc.D.; and Milton C. Weinstein, Ph.D. (2008). "Does Preventive Care Save Money? Health Economics and the Presidential Candidates," New England Journal of Medicine; 358:661-663, February 14, DOI: 10.1056/NEJMp0708558.

Cohen, Joshua T., Ph.D. and Peter J. Neumann, Sc.D. (2009). "The cost savings and cost-effectiveness of clinical preventive care," Center for the Evaluation of Value and Risk in Health, Institute for Clinical Research and Health Policy Studies, Tufts Medical Center, Research Synthesis Report No. 18, Robert Wood Johnson.

Cohn, E., and B. F. Kiker (1986). "Socioeconomic Background, Schooling, Experience and Monetary Rewards in the United States," Economica, 53: 497-503.

Corning, Howard M. (1956). *Dictionary of Oregon History*. Binfords & Mort Publishing.

Davies, S. and J. Aurini (2011). "Exploring School Choice in Canada: Who Chooses What and Why?", Canadian Public Policy, Vol. 37, Issue 4.

De Tocqueville, Alexis (1835). *Democracy in America*.

Elacqua, G., D. Contreras, F. Salazar, and H. Santos (2011). "Private School Chains in Chile: Do Better Schools Scale Up?", Policy Analysis, No. 682.

Finkelstein, Amy (2006). "The Aggregate Effects of Health Insurance," NBER, April. <http://www.nber.org/~afinkels/papers/Finkelstein_Medicare_April06.pdf>

Flyvbjerg, B., N. Bruzelius, and B. van Wee, "Comparison of Capital Costs per Route-Kilometre in Urban Rail," European Journal of Transport and Infrastructure Research, Vol. 8, No. 1.

Fraser, Colin (2003). "The Public School Market in the Netherlands: Money Follows the Child," Frontier Centre for Public Policy.

Fraser Institute (1999). "The Case for School Choice: Denmark." <http://oldfraser.lexi.net/publications/critical_issues/1999/school_choice/section_05.html>

BIBLIOGRAPHY *Continued*

Gardiol, Lucien, Pierre-Yves Geoffard, and Chantal Grandchamp (2003). "Separating Selection and Incentive Effects: An Econometric Study of Swiss Health Insurance Claims Data," Working Paper No. 2003-27, Départment et Laboratoire d'Economie Théorique et Appliquée (Paris, France), November 26.

Greenstone M. and A. Looney (2012). "Where is the best place to invest $102,000—in stocks, bonds, or a college degree?" The Hamilton Project, <http://www.hamiltonproject.org>.

Guillory, Gil and Carrie Ann Sitren (2007). "The Legal Landscape for Subscription Patrol and Restitution in Texas," Unpublished manuscript, presented at the Austrian Scholar's Conference, March. Retrieved October 2013 at <http://gil.guillory.googlepages.com/>.

Guillory, G. and P. Tinsley (2009). "The Role of Subscription Based Patrol and Restitution: The Future of Liberty," Libertarian Futures, VOL. 1, ART. NO. 12.

Hall, J. (2006). "Positive Externalities and Government Involvement in Education," Journal of Private Enterprise, Volume XXI, Number 2.

Hanushek, E. (1996). "School Resources and Student Performance," in Gary Burtless, ed., "Does Money Matter? The Effect of School Resources on Student Achievement and Adult Success" (Washington, D.C.: Brookings Institution Press), 74-92.

Hoback, A. (2008). "Sensitivity Analysis of Light Rail Transit Unit Capital Costs," TRB 2008 Annual Meeting.

Holcombe, Randall (1996). "Journal of Education Finance," Vol. 32, No. 2.

Isaacson, Walter (2003). *Benjamin Franklin: An American Life*, Simon and Schuster, paperback edition.

Kahn, James G. et al. (2005). "The Cost of Health Insurance Administration in California: Estimates for Insurers, Physicians, and Hospitals," Health Affairs, 24, No. 6: 1629-1639 doi:10.1377/hlthaff.24.6.1629.

King, E., P. Orazem, and D. Wohlgemuth (1999). "Central Mandates and Local Incentives: The Colombia Education Voucher Program," World Bank Economic Review 13, no. 3:467-491.

King, K. (2007). "Do spillover benefits create a market inefficiency in K-12 public education?", Cato Journal, Vol. 27, No. 1 (Fall 2007).

Klein, Daniel B. (1990). "The Voluntary Provision of Public Goods? The Turnpike Companies of Early America," Economic Inquiry 28 (October), 788-94.

Klein, Daniel B. and Chi Yin (1996). "Use, Esteem, and Profit in Voluntary Provision: Toll Roads in California, 1850–1902," Economic Inquiry 34 (October), 680-92.

Kleiner, Morris M. and Alan B. Krueger (2008). "The Prevalence and Effects of Occupational Licensing," NBER Working Paper No. 14308.

Ladd, Helen and Edward Fiske (2009). "The Dutch Experience with Weighted Student Funding: Some Lessons for the US," The Sanford School of Public Policy.

Ladd, Helen F., Edward B. Fiske, and Nienke Ruijs (2009). "Parental Choice in the Netherlands: Growing Concerns about Segregation," prepared for the National Conference on School Choice, Vanderbilt University.

Landau, Daniel (1983). "Government Expenditure and Economic Growth: A Cross-Country Study," Southern Economic Journal, Vol. 49, No. 3 (January), 783-792.

Lanza-Kaduce, L., K. Parker, and C. Thomas (1999). "A Comparative Recidivism Analysis of Releases from Private and Public Prisons," Crime & Delinquency, Vol. 45, No. 1, 28-47.

Lave, C. and R. J. Pozdena (1977). "Statistical Analysis of Transit Performance," UCI-ITS-WP-77-10.

Lave, C. A. and R. J. Pozdena (1977). "Statistical Analysis of Transit Performance," Irvine, California: Institute of Transportation Studies, University of California (UCI-ITS-SP77–2).

Levenstam, D. (1999). "Constitutional Challenge: Repealing the 16th Amendment Wouldn't Kill the Income Tax," Reason Magazine.

Locke, John (1689). *Two Treatises of Civil Government*, II, 57: 101.

BIBLIOGRAPHY *Continued*

Long, Bridget Terry (2004). "How Have College Decisions Changed over Time? An Application of the Conditional Logistic Choice Model," J. Econometrics 121(1–2): 271-96.

Lovenheim, Michael F. and C. Lockwood Reynolds (2011). "Changes in Postsecondary Choices by Ability and Income: Evidence from the National Longitudinal Surveys of Youth," Journal of Human Capital, Vol. 5, No. 1 (Spring), 70-109.

Lucas, Robert E (1985). "On the mechanics of economic development," Monetary Economics, XXII, 3-42.

Maciosek, Michael V., Ashley B. Coffield, Thomas J. Flottemesch, Nichol M. Edwards, and Leif I. Solberg (2012). "Greater Use of Preventive Services in U.S. Health Care Could Save Lives at Little or No Cost," Perspectives in Public Health, 132.

Mankiew, N. G., D. Romer, and D. Weil (1992). "A Contribution to the Empirics of Economic Growth," The Quarterly Journal of Economics, 107 (2): 407-437.

McPherson, M. and G. Winston (1993). "The Economics of Cost, Price, and Quality in U.S. Higher Education," in M. McPherson, M. Schapiro, and G. Winston, eds, The University of Michigan Press, Chapter 4.

Mizutani, F. and T. Urakami (2002). "A Private-Public Comparison of Bus Service Operators," Kobe University Working Paper 2002.25.

Moretti, E. (2004). "Estimating the social return to higher education: evidence from longitudinal and repeated cross-sectional data," Volume 121, Issues 1–2.

Murray, I. and Melchiorre, M. (2011). "Time to Re-Privatize Fire Departments," American Spectator.

Musgrave, R. A. (1939). "Voluntary Exchange Theory of Public Economy," Quarterly Journal of Economics, Vol. 53, No. 2 (February), 213-237.

Musgrave, R.A. (1959). *The Theory of Public Finance*, McGraw-Hill.

Musgrave, R.A. and P.B. Musgrave (1979). *Public Finance in Theory and Practice*, McGraw-Hill.

O'Connell, J. and G. Perkins (2003). "The Economics of Private Liberal Arts Colleges," The Journal of Business, Vol. 76, No. 3.

O'Toole, Randal (2010). *Urban Transit* .

OECD (2012). "Equity and Quality in Education: Supporting Disadvantaged Students and Schools," Spotlight Report: Netherlands.

OECD and Ministry of Education, Culture and Science (2011). "Overcoming School Failure: Policies That Work," Background Report for the Netherlands.

Olson, M. (1965). "The Logic of Collective Action: Public Goods and the Theory of Groups."

Patrinos, Harry Anthony (2009). "Private Education Provision and Public Finance: The Netherlands," prepared for School Choice and School Improvement: Research in State, District and Community Contexts, Vanderbilt University, Oct. 25-27.

Perry, J. and T. Babitsky (1986). "Comparative Performance in Urban Bus Transit: Assessing Privatization Strategies," Public Administration Review, Vol. 46, No. 1.

Pozdena, R. (1997). "An Alternative to Higher Education Funding Increases: The Use of Direct Student Assistance to Finance Higher Education Expenditures," Cascade Policy Institute, Policy Insight #101.

Pozdena, R. (1977), "Comparative Efficiency of Public and Private Bus Companies," UC Irvine Working Paper.

Psacharopoulos, G. (1985). "Returns to Education: A Further International Update and Implications," Journal of Human Resources XX (1985), 583-604.

Psacharopoulos, G. (2006). "The Value of Investment in Education: Theory, Evidence, and Policy."

Psacharopoulos, G. (1973). "Returns to Education," American Elsevier.

Rauch, J. (1993). "Productivity gains from geographic concentration of human capital: evidence from the cities," Journal of Urban Economics, 34, 380–400.

BIBLIOGRAPHY *Continued*

Ripley, A. (2013). "The $4 Million Teacher," The Wall Street Journal, August 3.

Samual, P. (2002). "Busway vs. Rail Capacity: Separating Myth from Fact," Reason Foundation Policy Update, No. 16.

Sklansky, David A. (1998), "Private Police, The 46," UCLA L. Rev., 1165.

Smith, Adam (1759). *The Theory of Moral Sentiments*.

Smith, Adam (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*.

Spiegel, Menahem (2003). "Public Safety as a Public Good," Topics in Regulatory Economics and Policy Series Volume 40, 2003, 183-200.

Spitzer, S. and A.T. Scull (1977). "Privatization and capitalist development: the case of the private police," Social Problems, 21, 18-29.

Stanek, S. (2006). "Privatized Fire District Keeps Costs Low and Service High," retrieved at <http://news.heartland.org/newspaper-article/2006/04/01/privatized-fire-district-keeps-costs-low-and-service-high>.

Stenning, Philip C. (September 2000). "Powers and Accountability of Private Police," European Journal on Criminal Policy and Research (European Journal on Criminal Policy and Research) 8 (3): 325.

Stewart, J. (1985). "Public safety and private police," Public Administration Review, 45:758-765.

Solow, R. (1956). "A Contribution to the Theory of Economic Growth," Quarterly Journal of Economics LXX, 65-94.

Tooley, James, Robert C. Enlow, and Lenore T. Ealy (2006). "Universal to Targeted Vouchers, in Liberty and Learning," *Liberty and Learning, Milton Friedman's Voucher Idea at Fifty*, edited by Robert C. Enlow and Lenore T. Ealy, CATO Institute, Washington, D.C., Chapter 10, 140.

US Department of Justice (2009). "Law Enforcement-Private Security Consortium: Trends and Practices in Law Enforcement and Private Security Collaborations," by The Law Enforcement-Private Security Consortium.

Verstegen, Deborah A. and Richard A. King (1998). "The Relationship Between School Spending and Student Achievement: A Review and Analysis of 35 Years of Production Function Research," Journal of Education Finance, Vol. 24, No. 2 (Fall), 243-262.

Weinick, Robin M., Craig Evan Pollack, Michael P. Fisher, Emily Meredith Gillen, Ateev Mehrotra (2010). "Policy Implications of the Use of Retail Clinics," Rand Corporation.