Capital Gains in Oregon: Economic Effects of a Tax Cut

A report for
The AOI Foundation

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EXECUTIVE SUMMARY

1. Basic Facts About the Capital Gains Tax in Oregon

While the federal government cut capital gains tax rates in the 1980s, Oregon actually increased its rate from 4% to 9%.

Over half of all families own assets subject to the capital gains tax, and nearly 2/3 of all families will own such assets at some time.

Oregon's state capital gains tax rate is the second-highest in the United States, and one of the highest rates in the world.

Revenue from capital gains is the most volatile major source of revenue the state has.

2. How Are Capital Gains Different?

The capital gains tax is levied on gains due to inflation, which constitute the bulk of gains recorded by lower-income and middle-income taxpayers.

The combination of the corporate income tax and the capital gains tax can take away as much as 57% of an investor's pre-tax gain.

The capital gains tax significantly reduces capital spending. Lower investment spending within a state leads to weaker economic growth.

The capital gains tax causes "lock-in" of investment, leading seniors to hold riskier investment portfolios than they desire.

3. The Economic Effects of a Capital Gains Tax Cut

Cutting the capital gains tax rate would stimulate investment and capital formation, increasing labor productivity and thus increasing wage rates as well as the overall pace of economic growth.

In the context of inter-state and international competition, cutting the state's capital gains rate to four percent could boost real per capita income growth by over one percent per year.

Venture capital funding for Oregon businesses would increase by 13% to 17% after a cut in the capital gains tax.

Lower tax rates would increase asset values of Oregon's small businesses, farms, and investment property by 4.5%, help seniors reduce the risk of their retirement funds, and provide greater purchasing power to Oregon investors.

4. The Revenue Effects of a Capital Gains Tax Cut

The static revenue loss from the capital gains reduction would be approximately $217 million a year average through 2007.

Offsets to this loss would come from faster turnover of assets, higher asset values, and increases in the overall economy. Varying estimates of these offsets result in revenue estimates ranging from a net cost of $180 million per year to a net revenue increase of $148 million a year. These cost estimates take into account the economic effects of lower government revenue.

5. Who Would Benefit from a Capital Gains Tax Cut?

The tax cut "helps most people and hurts no one."

The middle class would benefit from the cut, in addition to the obvious benefit to people in higher income brackets.

Workers would benefit from lower capital gains tax rates through stronger demand for labor, which would push up real wage rates.

Senior citizens would benefit, as they now bear a disproportionate share of the tax burden, as well as a large "excess burden" through holding riskier portfolios.

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Introduction

The AOI Foundation has asked for an analysis of capital gains taxation in Oregon, with specific consideration of the proposal to lower both the personal and the corporate tax rates on long-term capital gains to four percent.

This report seeks to objectively describe the effects of such a tax cut on the economy and on state revenue, and to determine the major beneficiaries of such a tax cut. The agreed terms of the project called for a review of major published research on the subject, and application of that research to Oregon's particular situation.

The report begins with a brief survey of basic facts about the capital gains tax in Oregon. Next we consider the factors that differentiate capital gains from other sources of income. We then consider the economic effects of a capital gains tax cut, followed by an analysis of the revenue effects of a tax cut. Finally we determine who would benefit from such a cut.

1. Basic Facts about the Capital Gains Tax in Oregon

Oregon Tax Rates

Oregon taxes long-term capital gains[1] at the same rate as regular income, for both personal and corporate taxpayers. For many years, Oregon shared the national approach, which was then to count only a portion of capital gains; that portion was subject to the statutory tax rate. The effect was a lower tax on capital gains. For example, when the federal exclusion was 60%, that meant that only 40 cents of each dollar of gains was subject to tax. With Oregon's highest personal income tax rate at ten percent back then, the effective rate on capital gains was 4.0% (calculated at Oregon's statutory tax rate of 10% times one minus the exclusion rate, or 0.10 * [1 - 0.6]).

The federal Tax Reform Act of 1986 eliminated the exclusion, but set a lower statutory tax rate for capital gains of 28%. The state of Oregon continued to link its personal income tax to the federal tax code, and it lowered its maximum tax rate to 9%, but it did not set a different tax rate for capital gains. As a result, the state tax on capital gains rose from 4% to 9%.

For some taxpayers able to itemize their deductions, Oregon tax payments reduce their federal tax liability. They pay 9% of their gain to the state, but they are able to deduct that payment on their federal tax return. For such taxpayers in the highest federal tax bracket, 39.6%, that deduction is worth 9% of their gain times the 39.6% federal tax rate, or 3.56% of the gain. In one sense, then, their effective Oregon capital gains tax is only 5.44% (the 9% tax rate minus the 3.56% federal tax saving). This is a fairly happy circumstance for Oregon. The taxpayers have a moderate effective tax rate, but the state collects on a large statutory tax rate. The difference is a loss to the federal government.

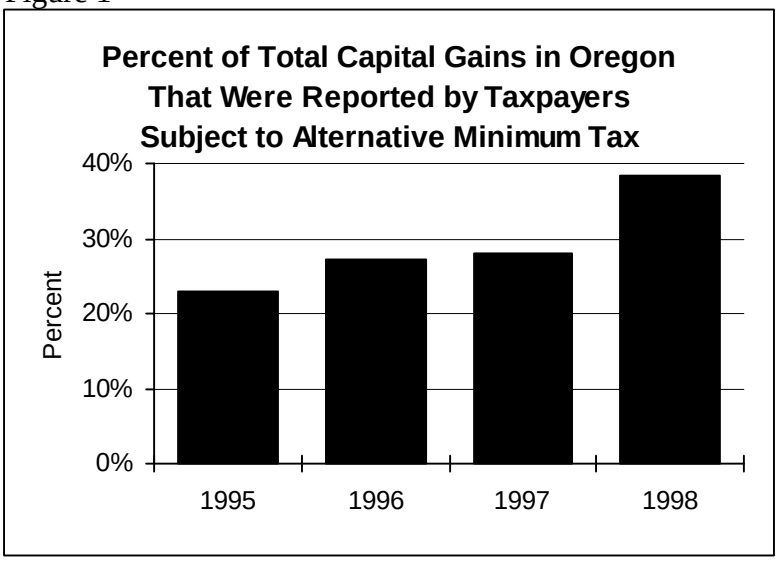
There are two difficulties here. First, the federal tax code phases out itemized deductions for upper income taxpayers, so that they may receive benefit from only 20% of their deductions.[2] At that point, the value of the tax deduction of nine percent is only 1.8% of the gain. For high-income taxpayers, the phaseout implies a combined tax rate of 27.2% of capital gains.

In addition to the phaseout of deductions, state taxes are not deductible by taxpayers subject to the alternative minimum tax (AMT).[3] Although AMT was designed for taxpayers in the highest income tax brackets, the threshold for being subject to the AMT has not been indexed to inflation. In fact, it applies to more and more people. Tax advisors recommend that taxpayers compute the AMT when their income exceeds $75,000. Congress's Joint Committee on Taxation estimates that the number of

[1] In the remainder of this document, we'll use "capital gains" to refer to long-term capital gains. Unless specifically mentioned, we are not discussing short-term capital gains.
[2] *2000 U.S. Master Tax Guide*, 1999, Section 1014.
[3] *2000 U.S. Master Tax Guide*, 1999, Section 1435.

taxpayers subject to the AMT will reach 12 million by 2007.[4] In Oregon, the percentage of capital gains reported by taxpayers subject to the AMT has risen dramatically in the last few years[5], and is likely to continue rising unless Congress revises the federal tax code.

Figure 1



The AMT will apply to the taxpayers most likely to have high incomes. It does not differentiate between a taxpayer with consistently high income and a taxpayer whose high income is transitory, due to the sale of a farm or business. Oregon's tax structure seems to be ideally structured for federal deductions, in that we have the income tax and property tax, both of which are deductible, but not the sales tax, which is not deductible. However, these large deductions are likely to trigger the AMT for Oregon taxpayers.

The bottom line for Oregonians is that if they have large capital gains, they may well be subject to the AMT, in which case their Oregon capital gains tax rate is a full 9%.

Tax Avoidance and the Actual Tax Rate

One additional issue relative to the capital gains tax rate is whether the rate is really effective, or whether sophisticated schemes are used to avoid the tax. Early economic research indicated the potential for such schemes to work, but the empirical evidence clearly shows that actual usage is very small.[6] Thus, the legislated rate is the applicable rate for economic analysis.

[4] See Congressional Research Service, 2000.
[5] Figures provided by Ed Waters, Legislative Revenue Office, by email 1/23/01, based on calculations by Oregon Department of Revenue.
[6] See Auerbach, 2000, and Auerbach, Burman and Siegel, 2000.

Capital Assets and the People Who Own Them

Assets subject to the capital gains tax include stocks, businesses, farms, land, real estate (usually except the primary residence) and various other assets.

The assets that generate capital gains, based on a 1993 study by the Congressional Budget Office, using Internal Revenue Service data, are as follows:[7]

Table 1

Assets that Generate Capital Gains

Asset	Percentage of Net Gains
Corporate Stock	32
Mutual Funds	
Capital gain distributions	7
Sale of shares	2
Real Estate other than personal residence	10
Small businesses, business property	28
Livestock, timber, farmland	3
Other	18

Although corporate stock is the largest single category, note the large role of small business. It would be a mistake to think of the capital gains tax as applying only to stock market speculators. It applies to people running small businesses and farms, and people who own rental property or land.

Who owns such assets? The most recent Survey of Consumer Finances by the Federal Reserve Board is shown in Table 2.[8]

The percentages are not necessarily additive, in that some of the 22.7% of families that own stocks may also be part of the 12.5% who own mutual funds. However, such double-counting was carefully researched in a Congressional Budget Office study of the 1992 Survey of Consumer Finance. The conclusion at that time was that 48.5% of all families owned a capital gain asset other than a home.[9] Since then, as the table shows, we've seen substantial increase in the ownership of stocks, mutual funds and other managed assets, with a smaller increase in small business ownership and a small decline in ownership of investment property. Given these increases in asset ownership, it's likely that today over half of all families own assets subject to the capital gains tax.

[7] Burman & Ricoy, 1997
[8] Kennickell, Starr-McCluer and Surette, 2000.
[9] Burman and Ricoy, 1997.

Table 2

Ownership of Capital Assets

	Percent of Families Holding Asset	
Type of Asset	**1992**	**1998**
Stocks	16.5	22.7
Mutual Funds*	7.7	12.5
Other managed assets	5.4	8.6
Residential property, not primary residence	8.5	8.5
Non-residential investment property	10.9	7.7
Business Equity	26.9	28.5

* excluding money market mutual funds

Ownership of capital assets increases as income and wealth increase, of course. That correlation, however, is the combined result of two separate effects: a pure income distribution effect, and a life cycle effect. The first is fairly obvious. Put two families of the same age side by side, and the family with higher income is more likely to own capital assets.

The life cycle effect reflects the predictable changes that a family experiences as it ages. Young families are likely to have low incomes and low levels of capital assets. As they add assets, they first add a car and furniture, then a home most typically. After their earnings have increased, they begin to buy stocks or to start a business. Later during their working years, when their income is high, they prepare for retirement by shifting some of their stock holdings into safer, income producing assets, such as bonds, certificates of deposit or annuities. They may also sell their business or farm.

Suppose that we had a perfectly egalitarian society across age groups. That is, all families headed by a person of a given age had identical incomes and assets. You would still find statistical evidence of an uneven distribution of capital gains just because of the life cycle effect.

The importance of this phenomenon for capital gains tax policy is that it may appear that higher tax rates won't hurt the low income family. That is not true if the low income family is going to accumulate assets as it gets older. The CBO study which showed 48.6% of all families in 1992 owned capital gains assets also showed that in the 55 to 64 year old age bracket (for the head of the family), 59.5% of all families owned capital gain assets. That figure is certainly higher today, so it's likely that two thirds of all families own capital gains assets at some time in their lives.

The Corporate Capital Gains Tax

The corporate tax on capital gains applies to companies that sell capital assets at a profit. It is generally the same tax rate as regular income under both federal and state tax laws. Capital gains are a relatively small part of corporate income. The most recent Internal Revenue Service data show that long-term capital gains net of long-term and short-term losses totaled 11% of net income.[10]

The corporate income tax has been rarely, if ever, addressed in the academic research, but it should display roughly the same behavior effects as the personal income tax: a disincentive to invest for long-term gains, a disincentive to reallocate assets, and a disincentive to realize capital gains.

How Oregon Compares

Oregon has the second highest capital gains tax rate of any state in the country.[11] Our 9.0% rate comes close to the highest tax, California at 9.3%, as Figure 2 shows.

If the capital gains tax makes a difference in any location decision, then Oregon is certainly at a competitive disadvantage compared to the rest of the country. Compounding Oregon's lack of competitiveness within the nation is America's lack of competitiveness with the rest of the world. The Table 3 shows the tax rate on long-term capital gains for major countries.[12]

[10] Internal Revenue Service, 2000, table 13, pp. 281-282.
[11] Keating, 2000, Appendix A.
[12] American Council on Capital Formation, 1998, Table II. Australia was updated for a recent change based on American Council on Capital Formation, 2000.

Figure 2

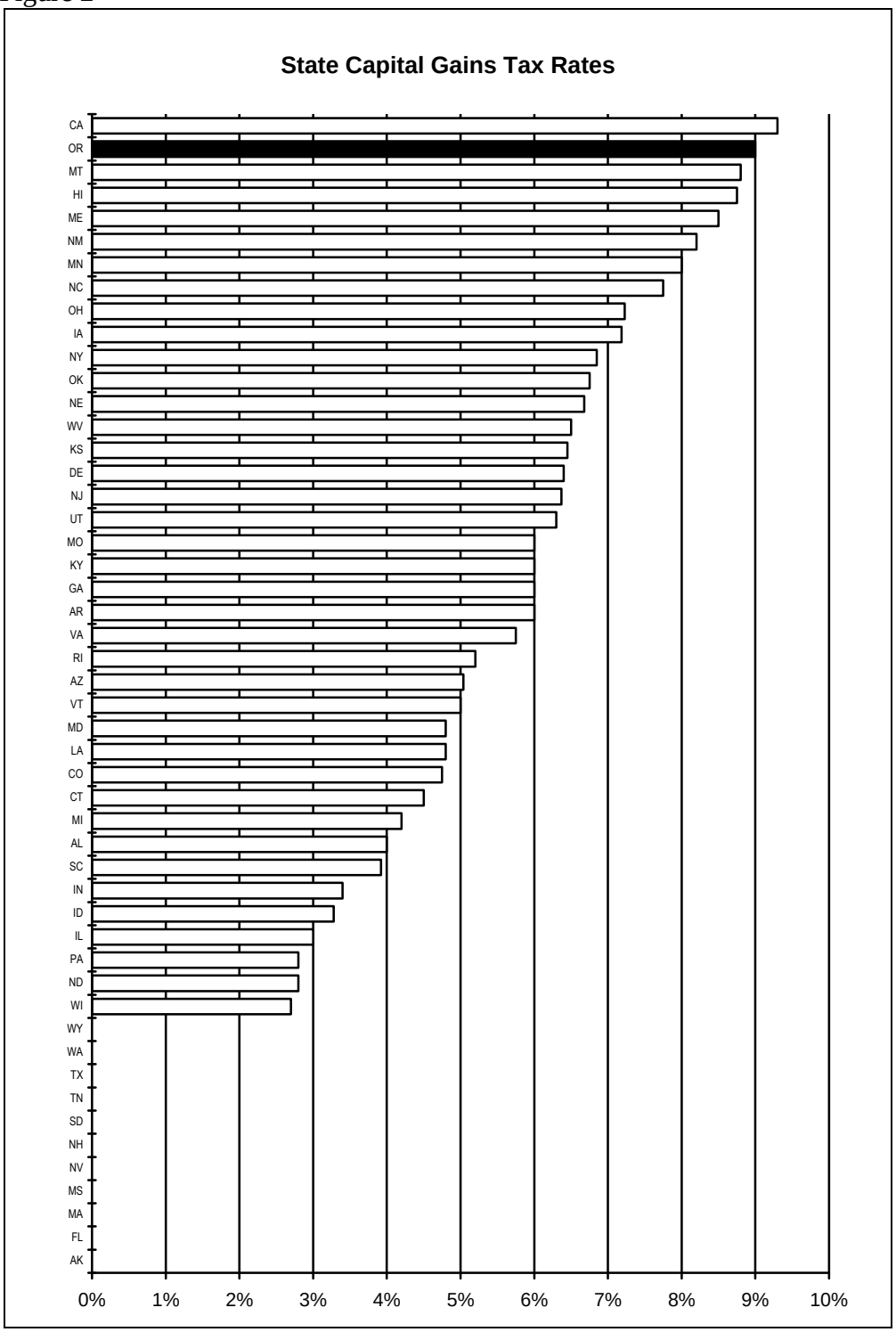

State Capital Gains Tax Rates
CA
OR
MT
HI
ME
NM
MN
NC
OH
IA
NY
OK
NE
WV
KS
DE
NJ
UT
MO
KY
GA
AR
VA
RI
AZ
VT
MD
LA
CO
CT
MI
AL
SC
IN
ID
IL
PA
ND
WI
WY
WA
TX
TN
SD
NH
NV
MS
MA
FL
AK
0%
1%
2%
3%
4%
5%
6%
7%
8%
9%
10%

Table 3

Capital Gains Tax Rates Around the World

Country	Maximum Tax Rates on Long-term Capital Gains
Chile[a]	45
Denmark[a]	40
United Kingdom[a]	40
Sweden	30
Oregon (state & federal)	**29**
France[a]	26
Australia	24
Canada	24
China	20
exchange-traded stock	0
India	20
Japan	20
Korea	20
exchange-traded stock	0
Brazil	15
Italy	13
Indonesia	0.1
Argentina	0
Belgium	0
Germany	0
Hong Kong	0
Mexico	0
Netherlands	0
Poland	0
Singapore	0
Taiwan[b]	0

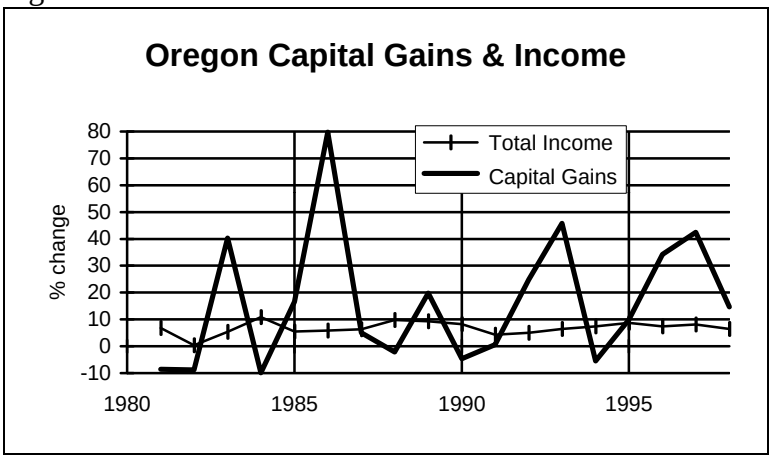
[a] Exemptions or exclusions may lower the rate
[b] Local company shares exempt

The Volatility of Capital Gains

Capital gains is perhaps the single most volatile source of income to the state of Oregon. It is known to the Office of Economic Analysis as a major source of uncertainty to the revenue forecast. Oregon data, available from 1980 forward, show the high volatility of

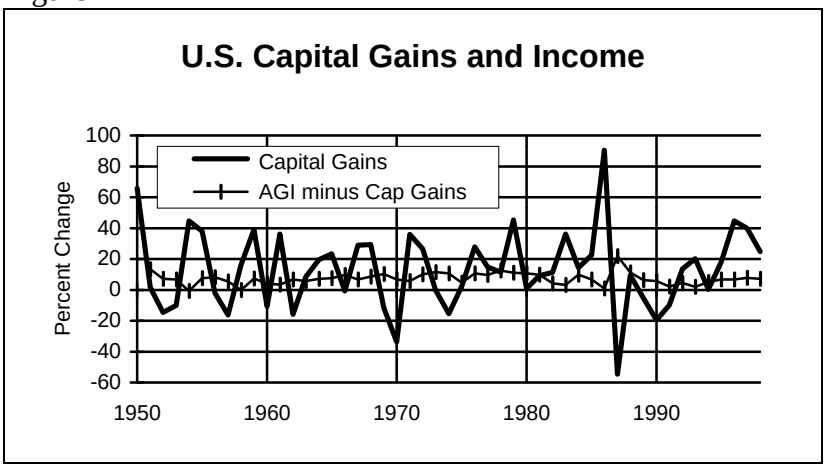
capital gains compared to regular income.[13] The percentage change of capital gains is 10 times more variable than the percentage change in total income.

Figure 3



The Oregon data show the volatility, but may offer the impression that the risk is mostly on the upside. U.S. data, which are available from 1950 on, show a pattern that indicates serious downside potential.[14] Notice the declines of 20%, 30% and even 50%! The significance of this volatility is that if Oregon were to reduce its capital gains tax, it would be smoothing out its revenue flow, improving its ability to forecast and plan.

Figure 4



Oregon not only has the third highest capital gains tax rate, but it ranks second among the states in the relative importance of the capital gains tax.[15]

[13] Data provided by Cora R. Parker, Office of Economic Analysis, via email on January 16, 2001.
[14] In the chart, AGI refers to Adjusted Gross Income, using the Internal Revenue Service definition. Data provided by Larry Ozanne, Congressional Budget Office, via email on January 10, 2001.
[15] Boyd, 2000.

Table 4

Relative Importance of Capital Gains			
	Adjusted Index of Capital Gains As % of AGI	Index of Income Tax as % of General Revenue	Index of Capital Gains Importance
Colorado	120.2	145.0	174.2
Oregon	**105.0**	**163.3**	**171.5**
New York	123.3	131.1	161.7
Connecticut	131.8	121.5	160.1
California	110.7	126.1	139.6
Minnesota	83.9	156.4	131.2
Massachusetts	76.5	169.8	130.0
Virginia	86.6	147.2	127.4
Idaho	102.4	117.8	120.6
Maryland	82.5	143.4	118.3
Illinois	105.8	110.4	116.8
North Carolina	80.1	141.7	113.4
Georgia	83.1	135.4	112.6
Utah	94.7	107.6	101.9
Nebraska	90.5	111.3	100.8
United States	**100.0**	**100.0**	**100.0**
Maine	92.9	107.1	99.5
Kansas	83.8	117.3	98.3
Vermont	110.7	88.7	98.1
Missouri	77.5	124.2	96.3
Delaware	88.4	107.6	95.1
Rhode Island	90.8	102.9	93.5
Indiana	66.3	132.1	87.6
New Jersey	86.5	100.8	87.2
Iowa	74.1	115.8	85.8
Montana	106.4	79.5	84.6
Arizona	103.0	81.7	84.2
Ohio	70.6	112.3	79.3
Pennsylvania	86.0	89.2	76.7
Oklahoma	69.2	109.8	76.0
Michigan	75.0	98.6	73.9
Kentucky	68.2	99.9	68.1
Hawaii	68.0	99.5	67.7
Alabama	72.7	82.7	60.2
Wisconsin	39.4	151.1	59.6
Louisiana	85.0	64.9	55.2
New Mexico	85.9	60.5	51.9
South Carolina	49.0	101.3	49.7
Arkansas	47.2	96.3	45.4
Mississippi	70.8	56.4	39.9
West Virginia	49.9	73.3	36.6
North Dakota	68.7	37.9	26.0
New Hampshire	127.2	10.6	13.5
Tennessee	90.5	5.4	4.9
Alaska	65.9		
Florida	158.6		
Nevada	145.8		
South Dakota	118.9		
Texas	101.4		
Washington	113.6		
Wyoming	169.2		

2. How Are Capital Gains Different?

As a general rule, equivalent sources of income should be taxed equally. However, in several very important aspects, income from capital gains is not equivalent to other income. In particular, much of the gains that are actually taxed are illusory, due to inflation rather than real increases in purchasing power. Furthermore, asset values are based on income after taxes, so a capital gains tax is a double tax. In addition, the capital gains tax has a pronounced effect on investment and capital formation, and thus influences wage rates and job opportunities for many people who may seem not to be affected by the tax. Finally, the capital gains tax reduces seniors' ability to manage their investments for a secure and independent future. The issues are explored in more detail below.

Taxing Inflationary Gains

When a worker receives a paycheck, he or she receives purchasing power. When an investor reports a capital gain, that gain may not constitute any increase in purchasing power.

The capital gains tax works on all gains, whether due to inflation or a real increase in value. Consider a simple investment of $100, held for one year. At the end of the year, the asset is sold for $109, for a return of 9%. That sounds decent, and is about the long-term rate of capital gains on common stocks in this country. After paying the federal capital gains tax of 20%, plus the Oregon tax of 9%, the investor has a return of 6.39%. However, the investor has not increased her purchasing power by that amount, because inflation has increased prices. Using the long-term average inflation rate of 3%, the investor has a "real return" of 3.29%.[16]

We can use this example to show the effective tax on real returns. The 9% capital gain is a 5.83% real return. ("Real" is economist jargon for "inflation-adjusted.) The real after-tax return of 3.29% implies an effective tax rate of 44%, far higher than the statutory tax rate of 29%.

How severe is the taxation of inflationary gains in practice? In what may be the only study of the subject, economists from the Urban Institute and the KPMG accounting firm looked at IRS data on people who realized capital gains in 1993.[17] They found that net gains before any inflation adjustment totaled $71.9 billion, but if adjusted for inflation, the gains become a loss of $19.4 billion. These figures probably overstate the problem somewhat, since taxpayers have an incentive to sell their losing investments and hold on to their most successful investments. However, even with some bias in the data, it's clear that the capital gains tax is much larger than the statutory rate indicates, sometimes even taxing phantom gains that do not produce increases in purchasing power.

[16] The adjustment for inflation is by division, not subtraction. 1.0639 (one plus the after-tax rate of return) is divided by 1.03 (one plus the rate of inflation) to yield 1.0329, which constitutes a 3.29% return.
[17] Burman and Ricoy, 1997.

The authors of that study looked at the real gains and losses by income class, and found that the highest-income taxpayers had after-inflation gains, whereas the middle and lower income taxpayers had the inflation-adjusted losses (but were taxed on them nonetheless). They also found that stocks alone had a positive after-inflation gain, implying that small businesses, farms, real estate and other investments had fairly pronounced real losses. So although the capital gains tax is often viewed as a tax on upper-income people, it can have a very severe effect on middle income taxpayers and small business owners.

Economists have proposed schemes to index asset values for inflation. It's a process that economists understand very well, but the general public finds difficult. It is rare in the world for countries to index assets for inflation, even though that is the technically preferred policy. The practical alternative is to levy a lower tax rate on capital gains.

Double Taxation with the Corporate Income Tax

The capital gains tax is also a special issue because it constitutes double taxation. Asset values are based on the asset's ability to generate after-tax earnings. Because the earnings of a corporation are taxed, the asset value is already reduced. In financial jargon, the asset value is reduced by the present value of expected future tax payments. To tax capital gains is then to levy a tax on top of a tax. An example will clarify the issue.

Suppose that an Oregon taxpayer buys one share of stock in an Oregon corporation. Table 5 compares the taxpayer's results under three different scenarios to determine the effective tax rates. The first scenario assumes no taxes; the second assumes only a corporate income tax; and the third assumes the present corporate income tax and capital gains tax.

Let's assume that during the year that the investor holds the stock, the company is able to increase its pre-tax earnings by one dollar per share. Those earnings will be taxed at the corporate tax rates of 35% federal and 6.6% state, except in our no-tax scenario. (The state tax is generally deductible on federal returns, so the federal tax rate is effectively less than the statutory tax rate.) The after-tax earnings increase then adds to the company's value. We assume that the price-earnings ratio that the market applies to the earnings is 14. (This is the historical average, but the end result is the same regardless of the actual PE ratio used.)

There is a change in the share price because of the higher earnings. If the stock is sold at the end of the year, it is this change in share price that constitutes capital gains. (For simplicity, we assume no change in the PE ratio applied to the pre-existing earnings.) The first two columns assume no capital gains tax, so the increased share price flows through to the investor. The third column subtracts the capital gains tax from the investor's proceeds. Now we can see the net gain after taxes.

Table 5

Double Taxation of Income

	No taxes	Tax on corporate income only	Tax on corporate income & capital gains
Increase in earnings per share	$1.00	$1.00	$1.00
- Oregon corporate tax @ 6.6%	0	-0.07	-0.07
- federal corporate tax @ 35%	0	-0.33	-0.33
Increase in after-tax earnings	1.00	0.61	0.61
Times price-earnings ratio	x14	x14	x14
Change in share price	14.00	8.50	8.50
Capital gains tax upon sale			
- federal @ 20%	0	0	-1.70
- state @ 9%	0	0	-0.76
Net gain after taxes	14.00	8.50	6.03
Effective tax rate		39%	57%

This investment would have yielded $14 without taxes. With corporate income taxes only, the investor's return falls to $8.50, which is equivalent to a 39% tax rate. (This is equal to the sum of the two corporate tax rates after adjusting for the deductibility of state taxes.) When the capital gains tax is added in, the investor loses 57% of his pre-tax return to the tax collectors. Clearly, the capital gains tax constitutes double taxation, resulting in a very high effective tax levy.

What if the capital is invested not in a corporation but in a partnership, sole proprietorship, or S-corporation, so that income is not subject to the corporate income tax but instead passed through to the individual? The analysis above is still correct, once the corporate income tax rate has been changed to the relevant personal income tax rate. The key is that potential investors are interested in after-tax returns, and asset prices are based on such returns.

Effects on Investment and Capital Formation

The capital gains tax has a pronounced effect on investment and capital formation, which in turn has a large effect on labor productivity, which ultimately determines wage rates. The channels of transmission are three-fold. First, the capital gains tax raises the cost of

capital to businesses. Second, the capital gains tax reduces the cash available to people to fund new investments. Third, the capital gains tax is especially important in influencing venture capital. These effects of the tax are explored below.

Alan Greenspan, in testimony before Congress about the capital gains tax, said,

> "…its major impact … is to impede entrepreneurial activity and capital formation….While all taxes impede economic growth to one extent or another, the capital gains tax is at the far end of the scale. I argued that the appropriate capital gains tax rate was zero."[18]

Prospective investors—including people just saving for retirement—look at the spending they will eventually be able to do after their investments pay off. The higher the tax on capital gains, the higher the pre-tax return that investors must earn in order for them to offer up their savings in a business investment. This higher pre-tax return, though, constitutes a higher cost to business. Firms must forsake projects that don't meet this high hurdle rate.

The higher cost of capital is accentuated by a non-symmetrical treatment of gains and losses. That is, there is no limit on the gains that are taxed, but there is a $3,000 limit on the losses that may be deducted in any one year. Consider how this changes the economics of a simple $10,000 investment with an expected holding period of one year. Let's say that the investor figures the odds of success at 50-50. Success means the value of his investment more than doubles, say, to $21,000. Failure means that the entire $10,000 is lost. Economists would calculate the "expected value" of the investment as the size of each possible outcome multiplied by its probability. In this case, the expected asset return is $500. (50% of an $11,000 return plus 50% of a negative $10,000 return.) From a pre-tax perspective, this is a project that should be undertaken if the investor can tolerate the risk.

On an after-tax basis, though, the investor would be crazy to make the investment, as Table 6 demonstrates. With equal probability of success or failure, this project makes sense pre-tax, but is a loser after-tax. We used a fairly small investment to show that this effect is present most of the time, but the difference is much more substantial as the investment becomes larger.

[18] Cited in Joint Economic Committee, 1999.

Table 6

Effect of $3,000 Capital Gains Loss Limit

	No Tax	With Tax
If successful:		
value of asset	$21,000	$21,000
gain	11,000	11,000
taxable gain		11,000
tax at 29%		- 3,190
net return	11,000	7,810
If unsuccessful:		
value of asset	0	0
loss	-10,000	-10,000
deductible loss		-3,000
tax deduction at 29%		870
net return	-10,000	-9,130
Expected value		
50% of return: success	5,500	$3,905
50% of return: failure	-5,000	-4,565
Expected gain/loss	500	- 660

Thus, the tax on capital gains reduces investment spending, limiting growth of the capital stock over time. Capital—the buildings, equipment, computers and software used by business—directly affects labor productivity. And in the long run, it is labor productivity that determines wage rates. Thus, workers will find their wages higher over time if the tax code does not artificially discourage investment. But the capital gains tax does discourage investment, and part of the burden of the tax is lower wages for workers.

Two Columbia University economists, after studying the effects of the Tax Reform Act of 1986, concluded that, "… there is a significant relationship between the costs of capital and equipment investment."[19] They also found a strong relationship to investment in buildings.

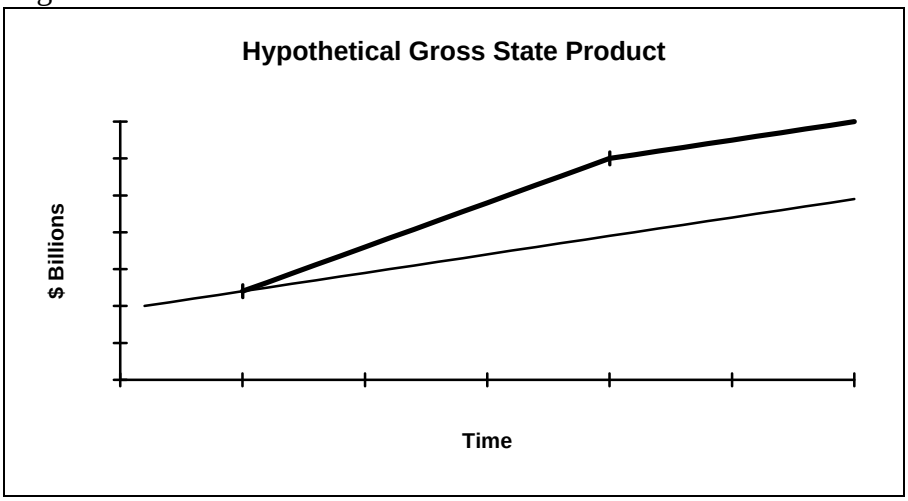
This result of basic economics is well understood at the national level, but it has also been found to be at work in individual states as well. Douglas Holtz-Eakin of Syracuse University examined data on all 50 states, and found that higher rates of investment did lead to more rapid economic growth.[20]

Economists generally believe that raising the rate of capital formation raises the economy's growth rate temporarily. After the period of more rapid growth, the economy grows at the old rate, but at a higher level of output than it could have sustained

[19] Cummins and Hassett, 1992.
[20] Holtz-Eakin, 1993.

previously.[21] (However, this approach needs revision when explicitly considering capital and labor mobility, as we will discuss in a later section.)

Figure 5



Holtz-Eakins' analysis found that the transition period—the period between the hash marks on Figure 5—is quite long. Half the adjustment, he found, would occur in 15 years. (The actual path is not as simple as the chart suggests.) In other words, we can expect this higher rate of growth to persist for quite some time.

Of particular interest, he also found that labor productivity was increased by higher capital spending. He concludes that we can expect higher real wages as a result, though in-migration of workers attracted to the state's higher wages would partially offset the improvement.

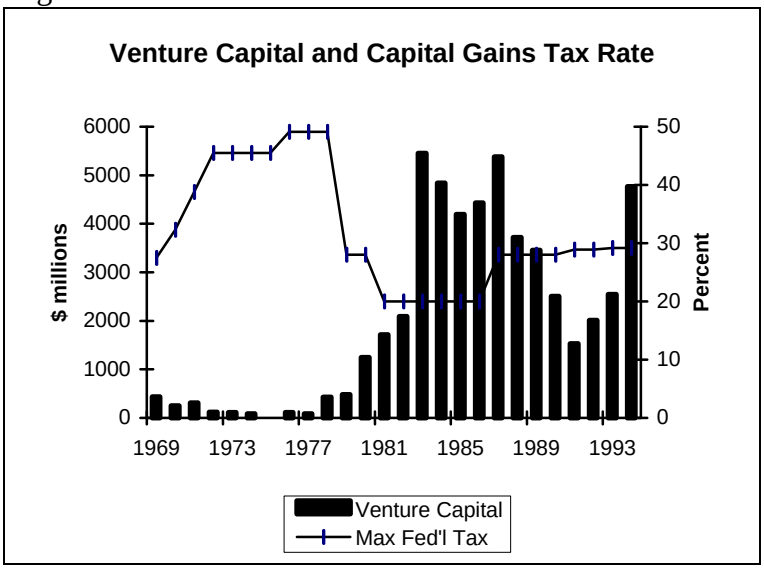
The second channel by which the capital gains tax affects investment is through cash available for investment. In a perfect world, the cost of capital alone would determine the supply of investment flows. In actuality, some businesses or investors are limited in their ability to borrow, or hesitant to take on high degrees of risk. Economists treat cash flow as a separate variable influencing investment. A business that sells an asset at a gain will have less cash available after paying the capital gains tax, and thus less cash available for new investments. Similarly, investors who have just sold an asset at a gain have less cash available to reinvest.

Finally, capital gains taxes are of particular concern in venture capital investing. A Harvard Business School study found that the capital gains tax had a significant effect on venture capital funds raised.[22] The simple inverse correlation between commitments to

[21] Readers with a taste for mathematics should consult any intermediate macroeconomics textbook for the basic explanation.
[22] Gompers and Lerner, 1998.

venture capital funds and the maximum tax rate on capital gains is shown in Figure 6, modeled on a similar chart in the study.[23]

Figure 6



Most importantly, the authors of this study included state-to-state variation in venture funding and tax rates. They found that the combined federal-state capital gains tax rate had a significant negative effect on venture capital funding. Their work implies that a change in a state tax rate from nine percent to four percent would likely increase the funding of state ventures by 13% to 17%.

The venture capital research suggests that the effect of the capital gains tax is not entirely through lowering the cost of capital. The tax also effects the demand for venture capital. With lower tax rates, more corporate managers start up their own companies. This effect seems to be stronger than the increased supply of capital that is caused by capital gains tax cuts.

The venture capital argument has been criticized by defenders of the capital gains tax, largely based on research showing that a majority of venture capital is provided by tax-exempt sources, such as pension funds and charitable foundations.[24] However, this research applies more to organized venture capital partnerships than informal sources of venture funding, including friends, family, and "angel" investors. In addition, the data on sources of funding does not contradict the finding that lower capital gains tax induce more managers to start up new ventures.

[23] Venture capital commitments are from Gompers and Lerner, 1998. Tax Rates are from Burman, 1999. These tax rates include interaction effects with other parts of the tax code, and thus differ somewhat from the statutory tax rates.
[24] Poterba, 1989.

The sort of entrepreneurial activity funded by venture capital is crucial to economic growth. A survey across 21 countries found that, holding other factors constant, there was a very high and statistically significant correlation between entrepreneurial activity and economic growth.[25] Clearly, entrepreneurship is not something that we want to discourage through excessive taxation.

As we will see later, when we examine the effects of lowering the capital gains tax, we can expect to see higher funding of start-ups in Oregon, and higher rates of economic growth.

Self-Sufficiency in Retirement

Finally, the capital gains tax is different because of its perverse effect on people's efforts to be self-sufficient, especially in retirement. The capital gains tax has what economists call a "lock-in" effect. Investors are taxed when they sell an asset at a taxable gain, so tax minimizing behavior leads them to be "locked in" to their existing portfolio.

Consider a widow of age 70, with a stock portfolio structured 15 years back. Some investments have turned out well, while others have soured. Nonetheless, she and her late husband were wise and prudent in setting up a nest egg for retirement. However, a conservative "buy and hold" investment strategy has a striking drawback: some assets do better than others, and they come to dominate the portfolio. This effect increases over time, and thus the portfolio gets riskier as the widow ages, exactly the reverse of what she would like.

As an example, we looked at a hypothetical portfolio created 15 years ago, consisting of an equal investment in 26 of the 30 Dow Jones Industrial Averages stocks. (We selected all stocks in the index back then, except four that did not have consistent stock price data available.) The portfolio begins with each stock constituting 3.9% of the total. Fifteen years later, the largest stock constitutes 18% of the portfolio, and the second largest 11%.[26] The results would be even more extreme if the portfolio included some non-blue chips, such as fast-growing technology companies. If Intel, for example, were added to the portfolio, it would have constituted nearly half of the portfolio at the end of last year—after declining 60% in four months. That four-month decline would have cost the widow one-third of her portfolio value! That verifies the potential risk of the tax-induced buy and hold strategy.

[25] Reynolds, 2000.

[26] Calculations were based on split-adjusted prices for December 31, 1985 and December 31, 2000 for the following companies (using current names): Honeywell, Alcoa, American Express, AT&T, Bethlehem Steel, Chevron, DuPont, Eastman Kodak, ExxonMobil, General Electric, General Motors, General Tire, Inco, IBM, Navistar, International Paper, McDonald's, Merck, 3M, Phillip Morris, Proctor & Gamble, Sears, Texaco, Union Carbide, United Technologies and Venator.

Diversification is the accepted solution to such risk, and it is enshrined in ERISA guidelines for management of pension funds as well as Oregon's prudent investor rule.[27] Unfortunately, the capital gains tax seriously discourages diversification.

Accentuating the widow's disincentive to sell her successful investments is the absence of capital gains tax at death, when her heirs will receive a stepped up tax basis. Thus, our widow faces the following situation: what's best for her will not be best for her children if her money survives longer than she does; but protecting the assets for her children increases the risk that she will outlive her assets.

Although a moderate reduction in the capital gains tax does not entirely eliminate this problem, every percentage point of reduction makes solutions more palatable.

The risky portfolios that seniors hold because of the capital gains tax is a deadweight loss, or "excess burden" of the tax. Holding an inefficient portfolio is a loss to the taxpayer, but not a gain to the state revenues. Thus, reducing this excess burden helps the public in general.

3. The Economic Effects of a Capital Gains Tax Cut

We can describe two broad types of economic effects of a tax cut. First, some responses increase measured economic activity, such as gross domestic product at the national level, or gross state product in Oregon. Second, some effects may not be measured, but contribute to economic well-being. For example, seniors being able to hold less risky investment portfolios has a positive effect on well-being (or "welfare" in the technical economic usage of that term), though the effect is not part of the gross state product or personal income calculation. We will include in this category some efficiency benefits that should have effects that are substantial but hard to estimate with much precision.

Economic Growth

Two forecasts of the effects of capital gains tax cuts were conducted by professional forecasters using a full-scale model of the economy. These are economists who make their living forecasting the economy, and who have stood the market test.

In early 1997, when the federal capital gains tax rate was 28%, Allen Sinai (chief global economist of Primark Decision Economics, and formerly chief economist for Lehman Brothers) considered the effects of halving the federal personal rate and reducing the corporate rate to 25%. His conclusions for the period 1997-2002:[28]

[27] For ERISA guidelines, see 29 CFR 2550.404a-1, and for Oregon's Prudent Investor Rule, see Oregon Revised Statutes 128.198.
[28] Cited in Joint Economic Committee, 1997.

- Real GDP up $51 billion per year, raising the growth rate by 0.1%
- Business capital spending up $17.6 billion
- Hourly compensation up 0.1%
- Federal tax revenues:
  change from U.S. Treasury baseline: + $17.2
  change from Joint Committee on Taxation baseline: + $4.5 billion
- Employment up 356,000 workers
- Unemployment down 0.2%
- Productivity growth up 0.1%

These are impressive results, and would generally scale up or down. Oregon's proposed changes reduce the total capital gains tax from 29% to 24%, which is about one third the size of the change that Sinai considered.[29] However, such scaling tends not to be linear, because small changes tend to have a larger per-unit effect than large changes. For simplicity, we'll scale down proportionately, but this will yield a conservative estimate of gains.

Oregon's Gross State Product was about $106 billion in 1998 (the most recent year for which we have data), or 1.2% of the U.S. gross domestic product. Oregon's share of Sinai's $51 billion GDP change would be about $612 million for halving the tax rate. For our smaller proposed state tax rate change, the Oregon effect comes out to be $208 million per year higher gross state product. We would similarly enjoy gains in wage rates and employment in the state.

DRI/McGraw Hill, Oregon's economic consulting firm, considered the same proposed change as Sinai studied and also concluded that the benefits would be large. DRI's estimated effects by the year 2007 are:[30]

- Real GDP 0.4% higher than baseline forecast
- Real capital spending 1.5% higher than baseline
- Capital Stock 1.2% higher than baseline
- Productivity 0.4% higher
- Federal tax receipts $7 billion higher

(Note that the two sets of results are presented in different form: Sinai as annual averages, and DRI as a comparison of ending values. Thus, they are not directly comparable.)

To consider how such a forecast would impact Oregon, taking the most recent level of gross state product and extending it forward to ten years from now using historic growth

[29] Although it may be confusing, we take a percent change of a percentage. The federal change from 28% to 14% is 50% of the previous tax rate. The change in Oregon from 29% to 24% is 5 percentage points, or 17% of the preexisting value. That 17% figure is one-third of the 50% federal change that Sinai considered.
[30] Cited in Joint Economic Committee, 1997.

rates gives us a $212 billion baseline.[31] Proportioning down DRI's 0.4% change for the smaller tax change being proposed implies a gain of $283 million.

Two important points deserve mention. First, these are net effects which have taken into consideration changes in government revenues, as either a reduction in spending or an increase in other sources of revenue.

Second, both studies conclude that labor income will increase from these tax cuts. The transmission method is simple: cutting the capital gains tax rate increases investment spending, which raises labor productivity, which raises demand for labor, which raises wages. DRI's chief economist David Wyss concludes that "The capital gains cut helps most people and hurts no one."[32]

Another analysis, by a team led by noted economist Patric Hendershott, looked at a change in the tax rate very similar to what is being proposed in Oregon. They did not examine levels of GDP, but they did conclude that capital formation would increase the overall business capital stock by $40 billion to $48 billion. That is just under one percent of the 1985 capital stock,[33] just a little below the DRI estimate of capital stock effect.

So far we have been proportioning down the U.S. changes based on the relative size of the Oregon economy. Now we consider how these effects would apply to a state change in the tax code. In this regard there are two issues:

1. How much would a change in the cost of capital help the state economy?
2. How much would the change in competitiveness help the state economy?

Regarding the first issue, consider the Oregon investors who hold only stocks listed on the national stock exchanges. The cut in Oregon's tax rate makes them more willing to hold assets, but that has only a tiny effect on the overall cost of capital of American business. There is negligible benefit to Oregon from this part of the change.

On the other hand, many Oregon businesses are locally owned and operated. Because for many businesses ownership and operation by the same person or family is more efficient, we have much of our economy dominated by firms with a very local cost of capital. Lowering the state capital gains tax would affect that portion of the Oregon economy by as much as the national estimates suggest.

At this stage, then, we look at how Oregon's businesses divide between national players and local players. We know of no hard data on the subject—and not even any good

[31] 1998 GSP was $105.752, according the U.S. Bureau of Economic Analysis. Computing an historical 10-year growth rate using their figures yields 5.5% annual growth. We compound that growth rate to the year 2011 to arrive at our baseline.
[32] Testimony before U. S. Congress, House Committee on Ways and Means, March 19, 1997, quoted in Joint Economic Committee, 1997.
[33] Bureau of Economic Analysis, 2000.

estimates. We examined the sectors of Oregon's Tax Incidence Model to categorize them judgmentally as national, regional or local. In cases where a sector was mixed, we looked at detailed subsectors (generally 4-digit SIC codes) and categorized each of them, and then added the subsectors back up to get sectoral proportions among the categories of ownership. We concluded that about half of Oregon's private sector economy resides in the locally owned and locally operated category.[34] That conclusion is consistent with the sources of capital gains shown in Table 1. The "Other" category of Table 1 is a mystery, but the remaining components split evenly between national-market assets and local-market assets.

Thus, we can take our earlier estimates and cut them roughly in half, so that gross state product would average $104 million higher, or end up $141 million higher at the end of 10 years.

However, the second factor listed at the beginning of this section, the change in competitiveness, bears serious consideration. Here we will consider a hyper-competitive regional sector of the economy, and then general competitiveness among the states. Our national-local split, which we categorized as roughly half and half, actually included a small regional sector as part of the local half. By "regional" we mean a sector that is locally owned, and serves a market area that includes two or three or four states. Examples would be dairy farms or machine shops. This regional sector is very competitive. Although the size of this sector in the region is only somewhat sensitive to the cost of capital, its *location* within the region is hyper-sensitive to cost factors. In many cases, the businesses will either be in Oregon or Washington.

The regional competition comes not just because business owners may move across the river. A more significant factor may be the owner's interest in expansion. Imagine two similar business owners, with generally similar total cost structures (though the individual cost components may differ, the totals comes close to equality). Both of these owners may see an expanding regional market, but one has a lower cost of capital. His consideration of risk and rewards leads him to expand before the owner with the higher cost of capital. After the market expands enough to meet the return threshold of the high cost of capital owner, that poor owner finds his competitor has already taken the market. The economics of expansion will always look poor to the high cost competitor. Thus, a small cost differential can lead to a huge shifting of activity into neighboring states, even if no entrepreneur moves across the river. We know of no research that looks at this factor explicitly, but the effect would be to increase the estimates given above.

Oregon's competitiveness is also affected by our taxation of corporate capital gains. The presence of a company in this state, as measured by its sales, earnings, and employment, triggers a state tax liability. Corporations can choose whether or not to locate in Oregon.

[34] Details of this calculation are available from the author. The division based on employment levels was 47% national, 2% regional, and 51% local. Division based on wages was 56% national, 2% regional and 42% local. Neither of these calculations include proprietors' income or corporate earnings. Given the imprecision of the estimates, a simple 50-50 split seems appropriate.

A company that expected to have capital gains would take into consideration the state taxes it would be charged. Although the state capital gains tax is unlikely to be the single most crucial factor in corporate decisions, it rolls into the full cost analysis that a major company would make before siting a significant part of its activity. A moderate cut in the state capital gains tax will translate into a lower overall cost of doing business in Oregon, which could provide enough of a differential to trigger a favorable location decision. We would not expect this to be a large effect, as such location decisions are not nearly as important as the growth of local businesses. However, the effect is large enough to be considered.

Particularly intriguing is research on the effects of capital and labor mobility. Most growth models assume a closed economy (no foreign trade) and population growth that is unaffected by the economy. These assumptions clearly don't apply to Oregon. We trade heavily with the rest of the country as well as the rest of the world. Population moves in and out of the state, and even birth rates are sensitive to economic conditions.

Mobility of capital and labor lead to hyper-competitive environments. Economists Assaf Razin, of Stanford and Tel Aviv University, and Chi-Wan Yuen of the University of Hong Kong, have modeled the effects of capital taxation on the United States as a country with capital and labor mobility. Their assumptions about both mobility and the tax practices (taxing by location of resident rather than location of the income source) apply quite well to Oregon. They summarize their conclusions:

> We discover relatively large effects of capital income taxes on long term growth of per capital income under free capital mobility.[35]

Their figures suggest that taxes on capital income are far more powerful under the more realistic assumptions than under the typical assumptions used in analyses such as we described above by DRI, by Hendershott, and by Sinai. Applying Razin and Yuen's estimates to Oregon's proposed tax cut leads to the conclusion we could increase the rate of growth of personal income per capita from the 2.2% now forecast by the Office of Economic Analysis for the 2000-2007 period, up to 3.3% per year. Unlike the traditional growth models that show a temporary period of faster growth, Razin and Yuen show that the more realistic assumptions lead to permanently higher growth rates. The computer model that Razin and Yuen used is not so finely tuned that the results are certain to be 3.3% rather than, say, 3.2%. However, their work does support the conclusion that Oregon would achieve a large economic boost by reducing the capital gains tax rate.

In addition, none of these studies included effects for increased entrepreneurial activity in terms of venture capital investing. Although venture capital is not a large percentage of total economic activity in the state, it is an important contributor to growth. As noted earlier, venture capital funding for Oregon businesses is likely to increase by 13% to 17% as a result of the lower capital gains tax rate.

[35] Razin and Yuen, 1996.

Asset Values

Changes in asset values are not included in the changes to gross state product, but we can quite reasonably expect that Oregon's farms, small businesses and investment real estate will appreciate in value after the tax cut. The conclusion that a lower capital gains tax rate causes higher asset values is well documented. Academic studies have come to that conclusion using evidence from a change in Canadian tax policy,[36] a change in U.S. policy regarding small business investments,[37] and the 1997 change in tax rates.[38]

Higher asset values benefit the owners of Oregon's farms, businesses and investment property when they sell. The higher capital gains realizations will cushion some of the revenue loss, as we will describe in a later section. Higher asset values will also help the middle-class farmers and business owners secure for themselves a comfortable retirement. We estimate that the market value of Oregon's small businesses, farms and investment property would rise by 4.5% after the capital gains tax rate is cut.[39]

Less Risky Investment Portfolios

Oregon's seniors will bear a lower cost when they choose to hold less risky investment portfolios if Oregon's capital gains tax is lowered. That provides the solid revenue benefit of greater tax revenues from the faster turnover of assets, plus spending increases from seniors who are more secure in their retirement. Of even greater value is the peace of mind that accrues from being able to reduce their risk in investment portfolios.

Greater Purchasing Power to Oregon Residents

The lower taxes will increase the amount that Oregonians have to spend and invest in the state. Although a reduction in state tax revenues may, depending on what other changes are legislated, reduce government spending, there will be an offsetting gain from additional spending and investing by Oregonians who now have higher after-tax assets.

4. The Revenue Effects of a Capital Gains Tax Cut

The effect of a capital gains tax cut on state revenue is far more complicated than a simplistic analysis would indicate. We begin by following the analysis by Oregon's

[36] Amoako-Adu, Rashid and Stebbins, 1992.
[37] Guenther and Willenborg, 1999.
[38] Lang and Shackelford, 2000.
[39] The cost of capital is estimated before and after the tax cut assuming a capital structure of 30% debt costing 6% and 70% equity costing 12%, with a 40% corporate income tax rate and a 9.42 year average holding period (based on the holding periods reported in Burman and Ricoy, 1997).

economic consulting firm, DRI/McGraw Hill, described earlier as to the economic effects of a tax cut. DRI developed this basic statement of effects on tax revenues:[40]

1. The static revenue effect is to reduce revenues in proportion to the tax cut.
2. Turnover of assets increases, increasing collections of tax revenue, with an especially large effect in the first year, but with some permanent effect as well.
3. Assets are valued more highly because of the lower capital gains tax rate, raising asset prices and thus tax revenues.
4. There is some income reclassification as taxpayers put more effort into shifting regular income into capital gains.
5. The economy grows at a faster rate, which further increases tax revenues.

To this list we add retention of taxpayers within the state of Oregon.

DRI's forecast of the revenue impacts of a 50% reduction in federal capital gains tax rates, beginning in 1998, is shown below:

Table 7

Estimated Impact of a 50% Capital Gains Exclusion
(Federal revenues, billions of 1997 dollars)

	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**Total**
Static Impact	($15)	($16)	($16)	($17)	($18)	($18)	($19)	($20)	($21)	($21)	($180)
Higher Turnover	$15	$7	$2	$2	$3	$3	$3	$3	$3	$3	$44
Asset Prices	$12	$12	$11	$10	$9	$8	$7	$7	$6	$6	$88
Income reclassification	($1)	($2)	($2)	($2)	($2)	($2)	($2)	($2)	($2)	($2)	($19)
Higher GDP	$0	$1	$2	$3	$4	$6	$8	$9	$10	$11	$54
Total	$11	$2	($3)	($4)	($4)	($3)	($3)	($3)	($4)	($3)	($13)

This table will form the basis for Oregon-specific analyses. It begins with the static revenue impact, which is found by multiplying the change in tax rates by the pre-existing volume of capital gains realizations.

Higher turnover of capital assets occurs because gains are said to be "unlocked." Some investors have a desire to sell their assets, in order to diversify or redirect their investments. Payment of the capital gains tax is the price of that asset turnover. As the price falls, turnover increases. The turnover is particularly strong in the first year.

[40] DRI/McGraw-Hill, 1997.

Asset prices rise, as we have discussed, because of the lower cost of capital. The higher prices imply that when assets are sold, they are sold at a higher price. On the downside, some income could shift from regular income into long-term capital gains.

Faster growth of the economy is a large factor in total revenue, in that it applies not just to the revenues from the capital gains tax, but to all other revenues the government collects as well.

We will now consider each of these factors, plus taxpayer retention. Our analysis will be limited to the personal income tax. The static revenue impact of the change in corporate tax rates is only $6 million a year, and there would be similar offsets to what we describe in the discussion of personal tax rates.[41]

Asset Turnover

The academic research literature universally concurs that the capital gains tax rate affects asset turnover, though the quantitative estimates vary widely.[42] One other point of solid agreement is that the first-year effects of a cut are quite large. This is indicated in Table 7 by the column for 1998 (the first year of the tax cut), in which the static revenue loss is entirely offset by additional revenue resulting from higher realizations of capital gains.

The percentage change in capital gains realizations from a one percent (not percentage point) change in the tax rate is called the elasticity. It's an important concept, because if the tax rate were cut by one percent of its previous value (as from 29.00% to 28.71%), an increase in realizations greater than one percent would cause an increase in tax revenue. That is, the increase in taxable gains would more than overcome the static revenue loss. (This arithmetic will be changed when considering a state tax rate change, as we will see below.)

Research on the capital gains tax has often focused on whether the elasticity is (in absolute value) greater or less than one. Larger values (more negative, that is) indicate that a federal tax cut would pay for itself through faster turnover of assets.

One study summarized the research literature in a table,[43] which we have augmented with our own review of later studies from 1989 through 1995.

[41] The static revenue loss was calculated by Ed Waters of Legislative Revenue Office, as cited by Gary Carlson of Associated Oregon Industries in an email December 11, 2000.
[42] Summaries of the research literature are in Auten and Cordes, 1991 and Burman, 1999.
[43] Auten, Burman and Randolph, 1989

Table 8

Long-term Capital Gain Realization Elasticities

	General		Short-term		Long-term	
Study	**Low**	**High**	**Low**	**High**	**Low**	**High**
Feldstein, Slemrod and Yitzhaki, 1980	-3.75	-3.75				
Minarik, 1981	-0.44	-0.79				
Auten and Clotfelter, 1982			-0.91	-3.46	-0.36	-1.45
U. S. Treasury, 1985 (panel data)					-1.16	-2.2
U.S. Treasury, 1985 (time series data)			-1.3	-1.3	-0.8	-0.8
Lindsey, 1987			-2.14	-2.14	-1.37	-1.37
Darby, Gillingham and Greenlees, 1988					-0.62	-1.51
Congressional Budget Office, 1988	-0.79	-0.99				
Auerbach, 1988					-0.06	-1.08
Auten, Burman and Randolph, 1989			-1.98	-1.98	-1.63	-1.67
Gillingham and Greenlees, 1992	-0.88	-2.67			-1.03	-1.61
Burman and Randolph, 1994			-6.42	-6.42	-0.18	-0.18
Bogart and Gentry, 1995 (range)					-2.55	0.11
Bogart and Gentry, 1995 (preferred)					-0.67	-0.67

Several points bear noting. First, some studies did not specifically identify the elasticities as short-term or long-term; we label these estimates "general." Second, there is a wide variation in estimates, for reasons of econometric methodology and data availability.

Our preferred short-term estimate is Auten, Burman and Randolph's of approximately -2.0 short-term and -1.65 long-term. It is close in magnitude to Lindsey's, and was estimated including the experience of the large 1986 change in tax rates, which improves its accuracy, and it includes the effects of state tax rates.

However, when economists at the Heritage Foundation performed a similar exercise, they concluded that likely elasticities were -5 in the first year, -3 in the second year, and -1.8 thereafter. Although these are larger than our preferred estimates, they are consistent with some of the research literature, and are certainly plausible.[44]

Our preferred elasticity estimates imply that asset turnover of Oregon residents would increase from a baseline level by 34.5% the first year, and by 28.4% every year thereafter.

Asset Prices

The increase in asset prices should apply to roughly half of the capital gains (the locally-owned half). We estimate that the change in the tax rate would boost the value of the

[44] Hodge et al, 1997.

local assets by 4.5%. We apply that by adjusting the total volume of capital gains upward by 2.25%.

Income Reclassification

The evidence for a significant effect from income reclassification consists of only one study, which reports that the effect is significant (in the statistical sense of the term), but not whether it is large. In the absence of better evidence, we will assume that this effect is negligible.[45]

Faster economic growth

Lowering the capital gains tax rate will certainly spur economic growth. We will look at two scenarios. One, derives from the Sinai and DRI forecasts discussed above, boosts gross state product by $100 million per year, which implies increased personal income of $81 million per year.[46]

For another scenario we apply Razin and Yuen's competitive model results and increase our personal income growth rate by 1.1% per year.

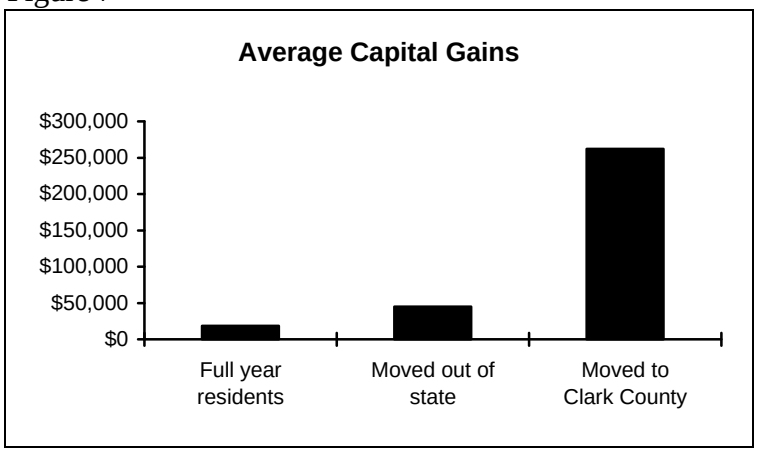
Taxpayer Retention

Oregon's high capital gains rate provides an incentive for taxpayers to move away when they are about to sell a business or other asset for a major capital gain. The size of this out-migration of tax revenues can be approximated by looking at the average capital gains of three types of taxpayers: those who lived in the Oregon the full year; those who moved out mid-year; and those who specifically moved to Clark County, Washington. These figures are charted in Figure 7. Oregon does not levy any tax on capital gains earned by a taxpayer after he has moved out of state, even if the taxpayer began the year as a resident.

This chart, with data for 1998, looks only at people who filed a full-year or part-year tax return.[47] Thus, it would capture all the gains of a person who moved out of state in June, then sold a business in July, even though the gains would not be taxable in Oregon. However, this chart does not include people who move out of state one year and sell their asset the following year. Oregon never knows how much revenue it lost.

[45] See the discussion of the subject in Burman, 1999, pp. 63-64.
[46] We take the most recent nominal personal income data as a proportion of nominal gross state product. Both data series are available from the U.S. Bureau of Economic Analysis at http://www.bea.doc.gov/bea/regional/data.htm.
[47] Data provided by Craig Fischer, Oregon Department of Revenue, by facsimile on 12/21/00.

Figure 7



We calculated that if the number of people who moved out of state did not change because of a tax cut, but their capital gains shifted down to the state average, there would be an additional $140 million of gains reported in the state. How much of this loss would be prevented by lower capital gains tax rates? We don't know for sure, but we do know two points: that we lost $140 million because of a 9% tax; and we would lose nothing if we had a tax rate of zero. We will thus proportion down the loss according to the decline in the tax rate, though this is only a rough estimate—the actual change need not be proportional. That gives us $62 million of gains, which at a 4% tax rate yields $2.5 million a year. Although 1998 was an above-average year for capital gains by people moving out of state, note that we are adding nothing for those people who left in a different tax year than their gain, for we know nothing about them. As a result, we believe our figures are quite conservative.

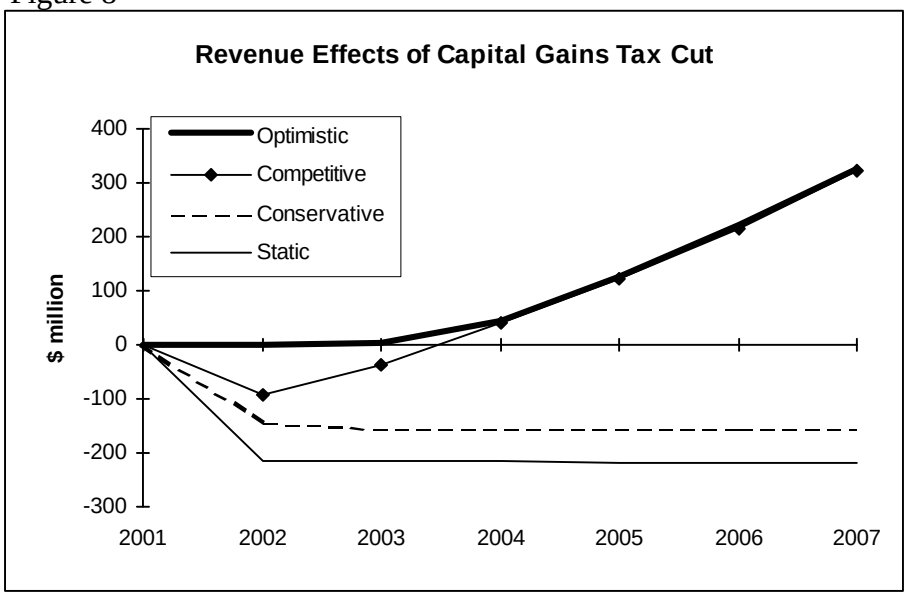
Revenue Estimates

We developed both static revenue estimates and dynamic revenue estimates based on various assumptions, described as follows:

Static:	The forecasted capital gains times the change in tax rates
Conservative:	Conservative estimates of elasticities and growth effects
Competitive:	Growth effects based on the Razin and Yuen research, conservative elasticities
Optimistic:	Combines Heritage elasticities and Competitive growth assumptions

The revenue estimates are shown in Figure 8.

Figure 8



There is no doubt there is substantial uncertainty about the revenue effects of a cut in the capital gains tax rate. The lines that go into positive territory indicate that the tax cuts generate sufficient growth to more than pay for themselves. These estimates, it should be noted, can be no more accurate than the baseline forecast developed by the Office of Economic Analysis. Although the state economist and his staff do an admirable job of forecasting state revenues, it's an inherently hazardous occupation, and no more than medium fidelity results can be expected.

The bottom line is that there will probably—but not certainly—be some cost to the state's revenues from such a tax cut, but that is the price to be paid for the benefits described earlier.

5. Who Benefits from a Capital Gains Tax Cut?

The most comprehensive description of who gains and who loses from a cut in the capital gains tax rate is from DRI's David Wyss:

> "The capital gains cut helps most people and hurts no one."[48]

We'll detail this conclusion by income class, for seniors, and for workers.

[48] Testimony before U. S. Congress, House Committee on Ways and Means, March 19, 1997, quoted in Joint Economic Committee, 1997.

Income Classes

Most discussions of the impact of the capital gains cut begin with the benefit to high income taxpayers. Although they will certainly benefit, their gains does not imply that others lose, because the world is not run as a zero-sum game.

The distribution of capital gains across income categories often includes calculations that include people with high capital gains income. This could include a farmer or business owner in the year that he sells an asset developed over a lifetime.

Consider, for example, the owner of a beauty salon, who has never earned more than, say $40,000 a year, but has over the years built up a business and bought the building it is in. The asset is now worth $200,000. The owner's tax basis in the business—the investment made at a young age, which compounded over time to be worth a fair amount—may be only $40,000, leaving her with a $160,000 capital gain. Like most small businesses, this company had no formal retirement plan, but the owner expects to live off of the interest from the business's sales proceeds, plus social security. If she earns 6% from that $200,000 (which net of taxes is only $153,600), she'll receive $9,200 a year.

In practical terms, a person who never earns more than $40,000 a year when working, and then collects $9,200 plus social security in retirement, is certainly not rich. But if we look at her tax return when she sells the business, we see her final year's earnings of $40,000, plus $160,000 of capital gains, and we declare this $200,000-a-year woman to be rich.

In addition, we have a life-cycle effect going on, in that people are more likely to sell assets at a taxable gain when they are in their 50s and 60s and earning a lot, than when they are in their 20s and 30s and just starting out.

To help deal with this problem, IRS data can be culled to look at capital gains as a function of income excluding gains. The data show that 88% of taxpayers who had capital gains also had other income, so we do not see a large class of people living exclusively off of gains. Those who do are most likely to be elderly. When capital gains are excluded from the income definition, gains are heavily weighted to the middle class. Table 9 is copied from a Heritage Foundation analysis of IRS data.[49]

Almost half (48.49%) of all gains are taken by people who have less than $75,000 in other income, which certainly qualifies them as middle class.

This should not be surprising given recent information about the rise in stock ownership. The Federal Reserve's Survey of Consumer Finances shows that 53% of families in the $25,000 to $50,000 income range own stock, and their stock holdings constitute a significant part of their assets.[50]

[49] Hodge et al, 1997.
[50] Kennickell, Starr-McCluer and Surette, 2000.

Table 9

Estimated Distribution of Individual Capital Gains Tax Relief

Regular Income Before Claiming Capital Gains	Percent of Filers Who Declare Capital Gains	Cumulative Percentage	Percent of Total Value of Capital Gains	Cumulative Percentage
Under $30,000	41.18%	41.18%	29.83%	29.83%
$30,000 to $39,999	11.12%	52.31%	5.25%	35.08%
$40,000 to $49,999	9.28%	61.59%	4.63%	39.72%
$50,000 to $74,999	17.42%	79.01%	8.77%	48.49%
$75,000 to $99,999	8.67%	87.68%	6.01%	54.50%
Over $100,000	12.32%	100.00%	45.50%	100.00%

Seniors

Capital assets are important to people over 65. According to Congressional Budget Office tabulations of data from the Federal Reserve, 59.5% of people between 55 and 64 own capital gains assets, whereas 46.5% of people over 65 own such assets.[51] Two facts are important here. First, people dispose of their assets—by realizing capital gains—as they enter retirement years. That trend continues as they age, with only 29.4% of people over 75 holding capital gains assets. The second important fact is simply that seniors still own a good amount of the nation's capital assets.

The same data source provides information on tax collections, which confirm that the capital gains tax is particularly burdensome to seniors. Capital gains constitutes just 5.2% of the tax bill of people under 65, but 17.5% of the tax bill for seniors.

The capital gains tax thus puts a disproportionate burden on seniors, particularly on those who have tried to provide for their retirement years by saving and investing.

Workers

All analyses of the capital gains tax, even by defenders of the tax, acknowledge that it plays a role in capital formation. They further concur that capital formation leads to higher labor productivity, which in turn expands demand for labor. The higher demand for labor will manifest itself through high wage rates and higher employment levels.

The only disagreement among the economists who study the matter is the degree of stimulus to investment and, thus, to workers. There is no serious challenge to the idea that workers will be at least a little better off.

[51] Burman & Ricoy, 1997.

One estimate of the effects of the 1997 federal capital gains tax cut is that it would add 720,000 new jobs to the economy.[52] Since the end of 1997, total employment in the country has indeed grown by 7.7 million jobs, so it's quite plausible that one tenth of the growth could be attributed to the capital gains tax cut.[53]

6. Conclusion

The weight of evidence indicates that a reduction in the capital gains tax would have substantial benefits to Oregon. It would stimulate economic growth and provide more equitable treatment for income earned by Oregonians, including many in the middle class and many senior citizens. In cutting this tax, the legislature would be reducing its dependence on the most volatile and hard-to-forecast revenue source it has. We strongly concur with Alan Greenspan's point that this tax is at the extreme end in its negative effects on economic growth. We believe that David Wyss's comments best summarize our research on this topic:

"The capital gains cut helps most people and hurts no one."

[52] Cited in Joint Economic Committee, 1999.
[53] Employment data are from the U.S. Bureau of Labor Statistics at http://stats.bls.gov/datahome.htm

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Appendix

Revenue Estimates Under Different Assumptions
($ Billions)

	2002	2003	2004	2005	2006	2007
Baseline Forecast						
Personal Income	97.083	104.229	111.603	118.758	126.231	133.936
Capital Gains	4.281	4.303	4.324	4.346	4.368	4.39
Personal Inc. Taxes	4.7733	5.1257	5.4894	5.8425	6.2114	6.5919
Corporate Taxes	0.494	0.548	0.572	0.592	0.606	0.634
Lottery Earnings	0.294	0.294	0.298	0.298	0.299	0.299
	Changes from Baseline Forecast					
Conservative						
Static	-0.214	-0.215	-0.216	-0.217	-0.218	-0.220
Increased Turnover	0.059	0.049	0.049	0.049	0.050	0.050
Higher Asset Prices	0.005	0.004	0.004	0.004	0.004	0.004
Improved Economy	0.005	0.005	0.006	0.006	0.006	0.007
Taxpayer Retention	0.002	0.002	0.002	0.002	0.002	0.002
Total Effect	-0.142	-0.154	-0.155	-0.155	-0.156	-0.156
Competitive						
Static	-0.214	-0.215	-0.216	-0.217	-0.218	-0.220
Increased Turnover	0.059	0.020	0.020	0.020	0.020	0.020
Higher Asset Prices	0.005	0.004	0.004	0.004	0.004	0.004
Improved Economy	0.057	0.123	0.199	0.284	0.378	0.484
Taxpayer Retention	0.002	0.002	0.002	0.002	0.002	0.002
Total Effect	-0.090	-0.065	0.010	0.093	0.187	0.291
Optimistic						
Static	-0.214	-0.215	-0.216	-0.217	-0.218	-0.220
Increased Turnover	0.148	0.089	0.054	0.054	0.054	0.054
Higher Asset Prices	0.008	0.006	0.006	0.006	0.006	0.006
Improved Economy	0.057	0.123	0.199	0.284	0.378	0.484
Taxpayer Retention	0.002	0.002	0.002	0.002	0.002	0.002
Total Effect	0.000	0.005	0.044	0.127	0.221	0.326

All figures are in billions of dollars. Alternative forecasts are presented as deviations from the baseline forecast, which is from the December 2000 forecast by the Office of Economic Analysis.