CAPITAL GAINS TAX
AND ITS EFFECTS ON INVESTMENT

Andy Long
Debbie Bosanek

- Secretary of Warren Buffett
- Pays higher tax rate than her boss
  - Debbie: 34%
  - Warren: 17.4%
- Display of unfairness in tax system during SOTU
- Applies to gains on long-term investments
- Lower tax rate than ordinary earnings

<table>
<thead>
<tr>
<th>Income Tax Bracket</th>
<th>Capital Gains Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>15%</td>
<td>0%</td>
</tr>
<tr>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>28%</td>
<td>15%</td>
</tr>
<tr>
<td>33%</td>
<td>15%</td>
</tr>
<tr>
<td>35%</td>
<td>15%</td>
</tr>
<tr>
<td>39.6%</td>
<td>20%</td>
</tr>
</tbody>
</table>
Should it be changed?

- Belief that it favors the rich
- Increase the rate for higher brackets
- Higher rates decrease investment
- Tax should not be changed
The Question at Hand

- Does the tax on long-term capital gains affect investment behaviors in an economy?
The Importance

- Such a relationship could assist in tax legislature
- Useful in determining optimal tax revenue
- Tax Policy makers would benefit most from this research
The Joint Committee on Taxation states that the “lock-in” effect may prevent higher tax revenue from increased tax rates.

Leonard Burman, professor on tax and policy at Syracuse, suggests that there is “no obvious relationship between tax rates on capital gains and economic growth”.

Current Research
Top Capital Gains Tax Rates and Economic Growth 1950-2011

Correlation = 0.12

Source: Leonard E. Burman
My Research

- Purpose is to determine relationship between tax and investment behavior, not overall economic growth.
- More narrow focus on historical investment, in both the short- and long-term
- Properly adjust to eliminate lurking variables
<table>
<thead>
<tr>
<th>Year</th>
<th>Maximum Tax Rate on Long-Term Gains</th>
<th>Realized Long-Term Capital Gains</th>
<th>Percentage Change from last year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>20.00</td>
<td>318,944</td>
<td>91.72%</td>
</tr>
<tr>
<td>1987</td>
<td>28.00</td>
<td>140,386</td>
<td>-55.98%</td>
</tr>
<tr>
<td>1997</td>
<td>29.19</td>
<td>330,360</td>
<td>41.26%</td>
</tr>
<tr>
<td>1998</td>
<td>21.19</td>
<td>424,762</td>
<td>28.58%</td>
</tr>
<tr>
<td>2003</td>
<td>21.05</td>
<td>294,811</td>
<td>17.31%</td>
</tr>
<tr>
<td>2004</td>
<td>16.05</td>
<td>466,224</td>
<td>58.14%</td>
</tr>
</tbody>
</table>
An increase in taxes will have a greater effect on realization of gains than a tax decrease.

Decrease will cause one to hold onto investment, but may not necessarily cause one to realize the gain, even if it is cheaper to do so.

In the short-term, investment is clearly affected by the tax on capital gains.

How is it affected on a long-term scale?
- **Annual GDP back to 1980 (in 2009 dollars)**
- **Gross Capital Formation %**
  - Includes aggregate expenditures on inventories, PP&E, as well as construction of other assets.
- **Other Market Conditions**
  - Omitted years of recession, as well as the year after (recovery phase)
    - 1982 and 1983
    - 2001 and 2002
    - 2008 and 2009
Annual Investment as a function of Tax Rate

$y = -1709\ln(x) + 7421.7$

$R^2 = 0.5762$
Annual Investment as a function of Tax Rate
Analysis of Results

- R-square = 0.5762
  - This value indicates how well the data fits the function. Essentially, it means that 57.62% of the data can be modeled by this equation.
- Acceptance or rejection is subjective
Accept or Reject?

- **Accept**
  - There is a strong relationship between tax rates and investment
  - Increased taxes could bring harmful economic consequences
  - Therefore, the max tax rate should not be increased

- **Reject**
  - There is no apparent relationship between tax rates and investment
  - With no apparent relationship, tax revenue could be increased with higher taxes
  - Therefore, the max tax rate should be increased
I must reject the model
- Not enough data
- Too many lurking variables
- Alternative correlation
  - Investment consistently shows upward trend
  - Tax rate consistently shows downward trend
  - Early data had low investment paired with high tax rate
Next Steps

- Determine if other factors are appropriate to be included in the adjusted data.
- Perform additional testing as more historical data becomes available.


Questions?