



# Burch Conference, June 2009

## Day 3: Systems of International Taxation

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Residence-Based Taxation  
Source-Based Taxation and Anti-Abuse Rules  
Expense Allocation  
Foreign Tax Credit Limits  
Destination-Based Taxes, Including Consumption Taxes  
Taxes Other Than Income Taxes



# Corporate inversions and U.S. worldwide taxation.

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- American firms dissatisfied with U.S. worldwide taxation typically have the option of expatriating with a corporate inversion.
- Only a small number have availed themselves of this opportunity; there was a flurry of such activity at the end of the 1990s/early 2000s, but it ended just after 9/11/2001.
- Corporate inversions are not terribly important quantitatively for the United States, but nonetheless are significant for two reasons.
  - They tell us something about the incentives and burdens associated with worldwide taxation.
  - The threat of future inversions may constrain current tax policy to a certain degree.



# Desai and Hines study.

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- What characteristics are associated with an expatriation achieved by a corporate inversion?
  - Large firms
  - Firms with extensive foreign assets
  - Firms with lots of debt
- Share prices rise on average by 1.7% on the announcement of plans to invert.
- 10% higher debt/asset ratios are associated with 0.7% greater market reactions to inversions.
- 10% prior share price appreciation is associated with 1.1% greater market reaction to inversion announcements.
- Bottom line: it appears that those who invert may be furthering shareholder interests by doing so.

TABLE 3  
DETERMINANTS OF EXPATRIATIONS

|   | (1)                 | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Constant</b>   | -6.5493<br>(0.6507) | -6.6944<br>(0.8039) | -7.5456<br>(1.1487) | -5.5038<br>(0.6925) | -6.6155<br>(1.0592) | -6.7861<br>(1.3899) | -6.5565<br>(1.4794) |
| <b>Log Total Assets</b>   | 0.4813<br>(0.0885)  | 0.3408<br>(0.1141)  | 0.6142<br>(0.1365)  | 0.5010<br>(0.1107)  | 0.3640<br>(0.1480)  | 0.4936<br>(0.1658)  | 0.4790<br>(0.1716)  |
| <b>Foreign asset share</b>  |                     | 3.6756<br>(0.9484)  |                     |                     | 4.9915<br>(1.2015)  | 4.8180<br>(1.5524)  | 4.7076<br>(1.5707)  |
| <b>Leverage</b>   |                     |                     | 3.3517<br>(1.1488)  |                     | 0.5964<br>(0.2208)  | 1.1070<br>(0.4933)  | 0.9128<br>(0.5305)  |
| <b>Average foreign tax rate</b>                                     |                     |                     |                     | -2.6535<br>(1.7897) |                     | -2.1893<br>(2.1100) | -2.6898<br>(2.4759) |
| <b>Interaction of Leverage<br/>and Average Foreign Tax<br/>Rate</b> |                     |                     |                     |                     |                     |                     | 1.3697<br>(3.4423)  |
| <b>No. of Obs.</b>  | 663                 | 663                 | 340                 | 215                 | 340                 | 113                 | 113                 |
| <b>Log Likelihood</b>   | -73.5496            | -58.7318            | -56.1250            | -43.6553            | -46.0401            | -28.8871            | -28.8379            |

NOTE: The table reports estimated coefficients from logit regressions in which the dependent variable equals one if a firm announces plans to expatriate at any time and equals zero otherwise. Log Total Assets is the log of the book value of total assets. Leverage is the ratio of the book value of long term debt to the book value of total assets. Foreign Asset Share is the share of all assets held abroad. Average foreign tax rate is the average tax rate paid on foreign income. The interaction term is the product of leverage and the average foreign tax rate. All variables are measured as of yearend 1997. Robust standard errors are presented in parentheses.

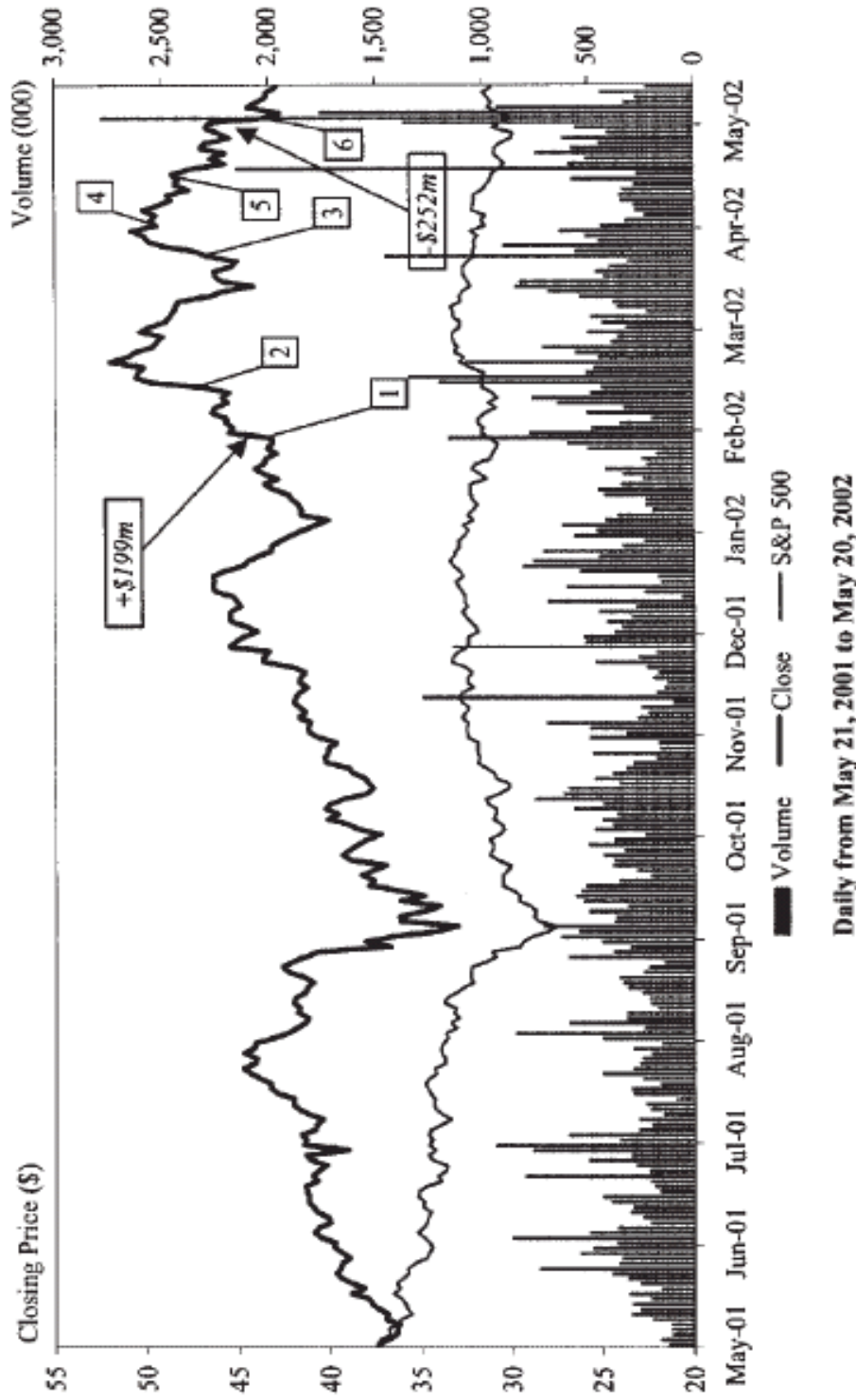


## Stanley Works: A study in bad timing.

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- On 8 February 2002 Stanley Works announced plans to invert to a Bermuda/Barbados structure.
- The accompanying announcement indicated that Stanley's average tax rate would fall by 7-9% from its then-value of 32%.
- The market value of Stanley's stock rose by \$200m on the announcement.
- Congress and the Connecticut Attorney General together helped quash the inversion, leading to a 10 May decline of \$250m in the value of Stanley stock following an announcement by the CT AG.
- Stanley subsequently announced it would not invert.

Figure 3. Stanley Works: One-Year Price History



|   |         |  |   |         |   |
|---|---------|--|---|---------|---|
| 1 | 2/8/02  | Announces intention to execute inversion transaction to Bermuda  | 4 | 4/11/02 | Senate to draft legislation eliminating and reversing inversion transactions  |
| 2 | 2/25/02 | Announces strategic alliance with Home Depot   | 5 | 4/26/02 | First quarter earnings rose due to cost cutting measures; results reflected "continuing weak markets"   |
| 3 | 4/3/02  | Increases analyst guidance figures based on strong retail sales; this and all other earnings estimates exclude the possible impact of reincorporation in Bermuda | 6 | 5/10/02 | Stanley Works agrees to hold a revote by shareholders after the initial vote only approved the inversion transaction by a very narrow margin above the required two thirds majority and the Connecticut Attorney General declared the meeting "rife with voting irregularities" |

Note: The dark line in the figure depicts daily closing stock prices for Stanley Works on trading days between May 21, 2001 and May 20, 2002, measured on the left axis. The light line depicts closing values of the S&P 500 index, normalized by Stanley's closing price on May 21, 2001. The lightly shaded bars measure daily volumes of Stanley stock trades, measured on the right axis as thousands of shares.

Source: Authors' calculations from data reported by CRSP and Compustat.



# Lessons from Stanley Works and other inversions.

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- How could the Stanley inversion be worth so much? Most likely explanation is that Stanley was planning to accompany the inversion with greatly increased debt in the U.S. loaned from the Bermuda parent.
- The use of inversions to increase leverage is probably not the driver in all cases.
  - Firms are more likely to invert if they already have lots of leverage prior to the inversion.
  - Also, firms with lots of foreign assets and low foreign tax rates are the most likely to invert.
  - This suggests that the desire to avoid Subpart F and other repatriation taxes is an important driver of many inversions.
- Inversions are important in part for what they tell us about what is happening in non-inverting firms.



## Another way to avoid worldwide corporate taxation: portfolio investment.

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- Paper: “Taxes, institutions and foreign diversification opportunities,” *Journal of Public Economics*, forthcoming.
- Authors: Mihir Desai (Harvard) and Dhammika Dharmapala (University of Illinois).
- Analyzes effects of corporate tax rates and investor protections on the choice between portfolio and direct investment.
  - Higher local taxes, which are not creditable for portfolio investors, depress portfolio investment.
  - Strong investor protections encourage portfolio investment.
  - These are measured relative to direct investment.





## The theory.

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- Portfolio investors get their returns net of local corporate taxes.
- They also get only those returns that corporate insiders and dominant shareholders permit them to get.
- Direct investors face fewer control problems, and are entitled to claim credits for foreign income taxes paid.
- Hence there might well be significant divergences between patterns of portfolio and direct investment.



# The study.

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- Looks at data on U.S. investment abroad, 1994-2005.
- Uses data from the Treasury International Capital reporting system.
  - Portfolio holdings of foreign securities by U.S. investors.
  - Based on responses to periodic surveys of banks, other financial institutions, securities brokers, and dealers.
- U.S. portfolio investment abroad, as measured in these Treasury data, exceeds U.S. outbound foreign direct investment as measured by the Bureau of Economic Analysis. And this conclusion is generally supported by other information.
- Tax rate measures: top statutory tax rates.
- Investor protection measures (LaPorta et al, 2006): disclosure requirements, ease of shareholder civil suits for damages for misleading statements or reports, extent of shareholder rights to call meetings or replace directors.



## Patterns.

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- There are sizable differences across countries in the portfolio/direct investment ratio.
- Some of these differences are clearly idiosyncratic (e.g., Finland), whereas others are probably related to tax and investor protection factors.
- Regressions suggest that, controlling for other factors including direct investment, foreign portfolio investment is highly sensitive to corporate tax rates and investor protections.

Figure 1: The Ratio of Outbound U.S. FPI to FDI, 2005

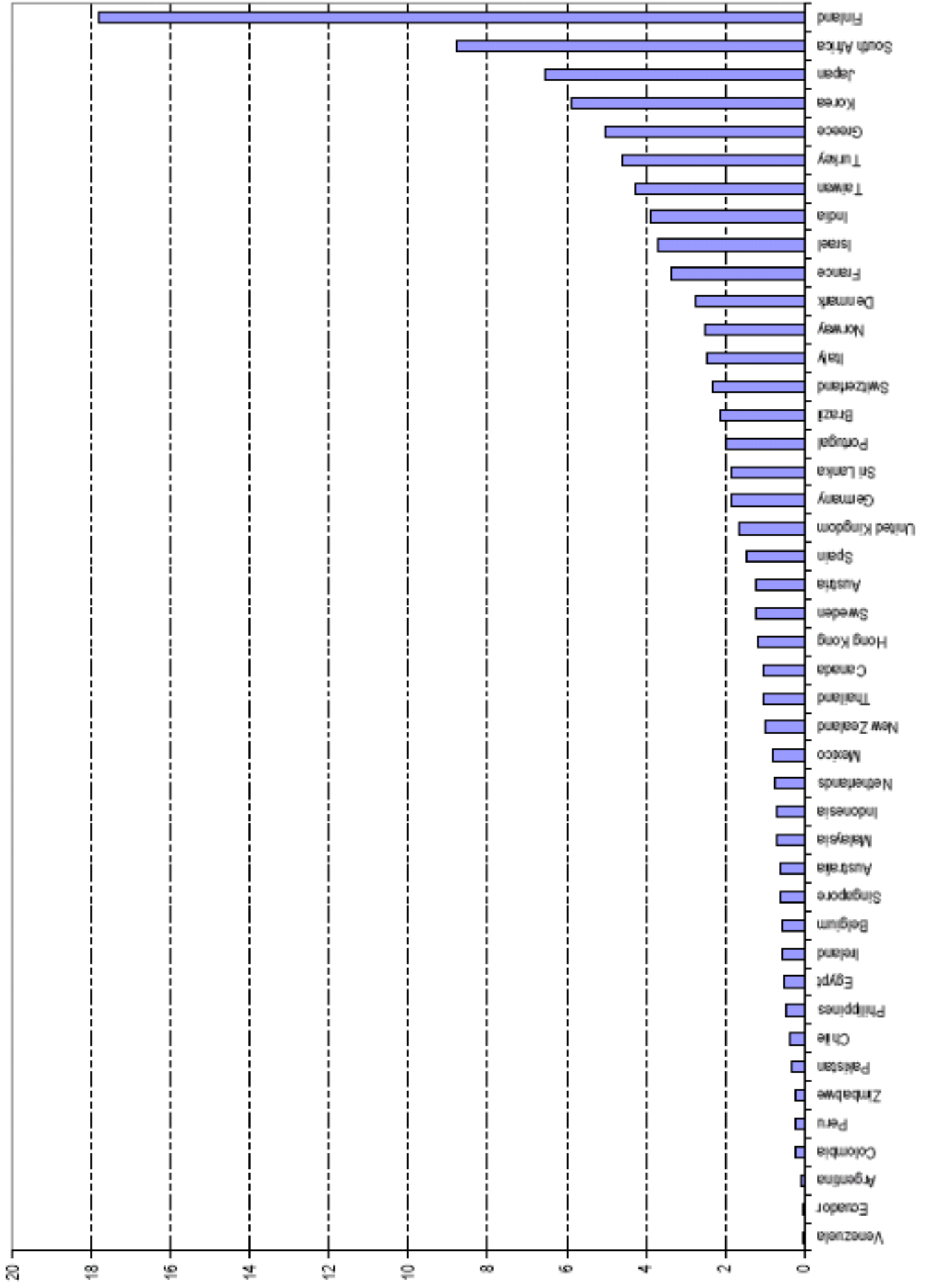


Figure 2a: Corporate Taxes, Investor Protection and FPI

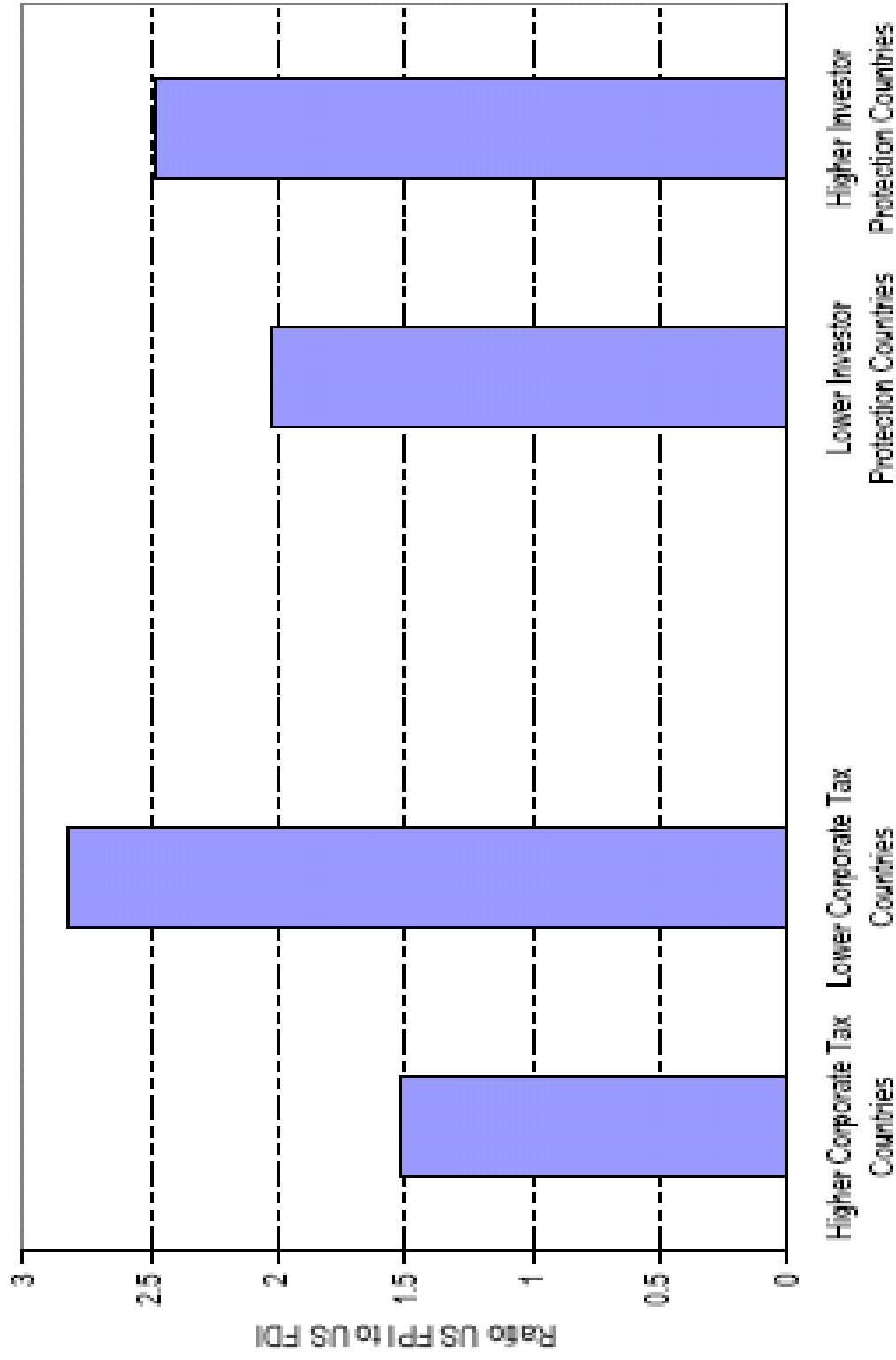
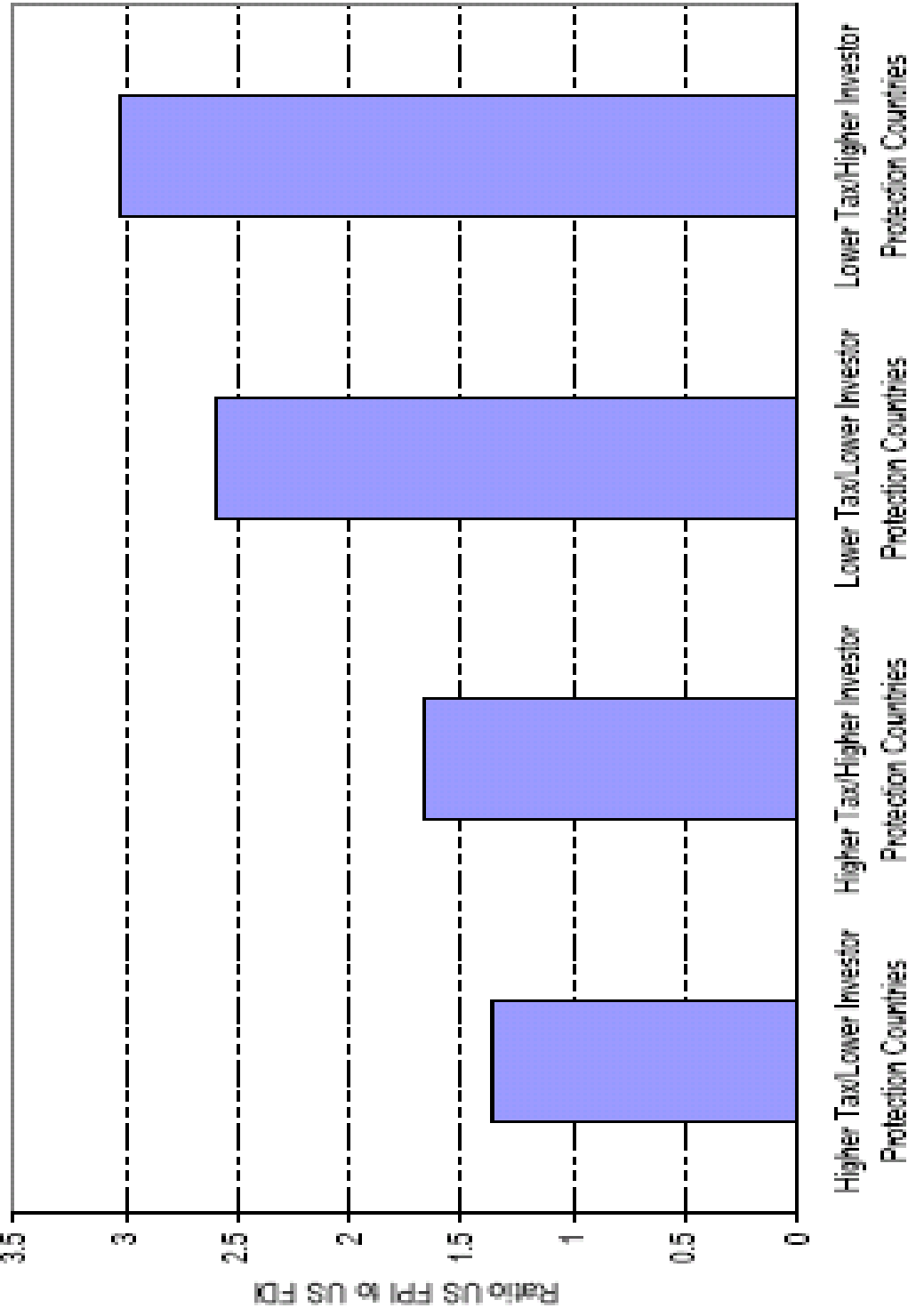


Figure 2b: Corporate Taxes, Investor Protection and FPI





## Findings.

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- Foreign portfolio investment appears to be very tax-sensitive.
- The estimated tax elasticity is -2.1, which is quite large. This implies that increasing a local corporate tax rate by 10% reduces inbound portfolio investment by 21%.
- It is noteworthy that these tax effects appear only with equity investment, and not at all with debt investment.
- Investor protections also significantly influence portfolio investment. A one standard deviation increase in the investor protection measure (the difference between Italy and Norway) increases portfolio investment by 24%.
- These results appear in regressions that control for population, GDP, distance from the US, foreign trade characteristics, and other factors that might influence portfolio and direct investment.



## Implications.

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- The results suggest that portfolio investment is something of a substitute for direct investment. Hence tax effects on direct investment spill over into the market for portfolio investment.
- The results also suggest that we might see very different patterns in other countries, or in the U.S. if we were to exempt active foreign income earned by direct investors.





## Limits on tax benefits.

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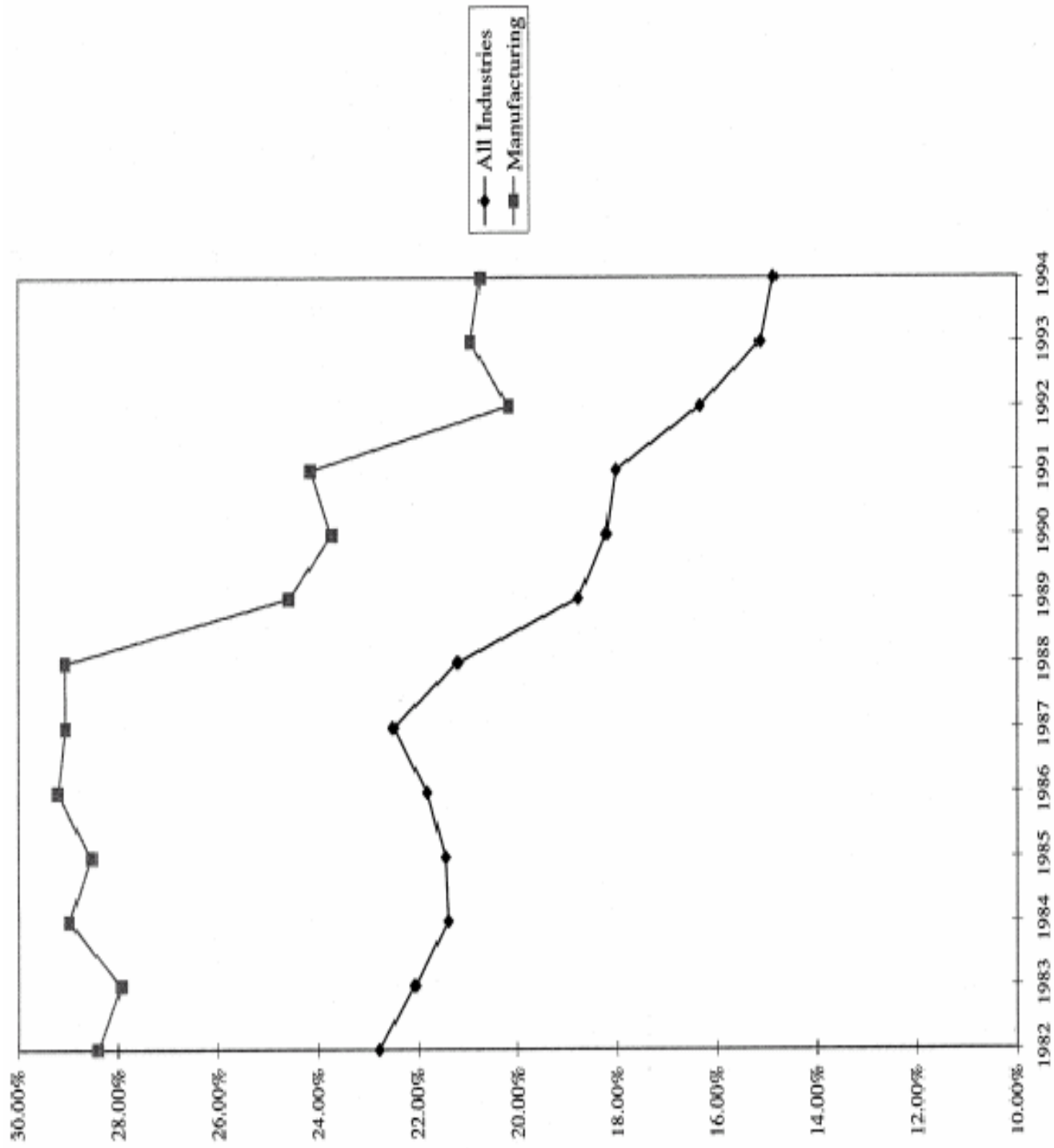
- Many governments impose rules limiting tax benefits.
  - Thin capitalization rules.
  - U.S. expense allocation rules for interest, R&D, general administrative expenses.
  - Foreign tax credit limits.
- The limited evidence that we have suggests that all of these significantly impact taxpayer behavior, typically in rather inefficient ways.
  - Firms accumulate debt up to thin cap limits.
  - Expense allocation rules increase the cost of domestic borrowing and R&D, even for domestic projects.
  - Foreign tax credit limits introduce odd asymmetries for taxpayers at the limits.

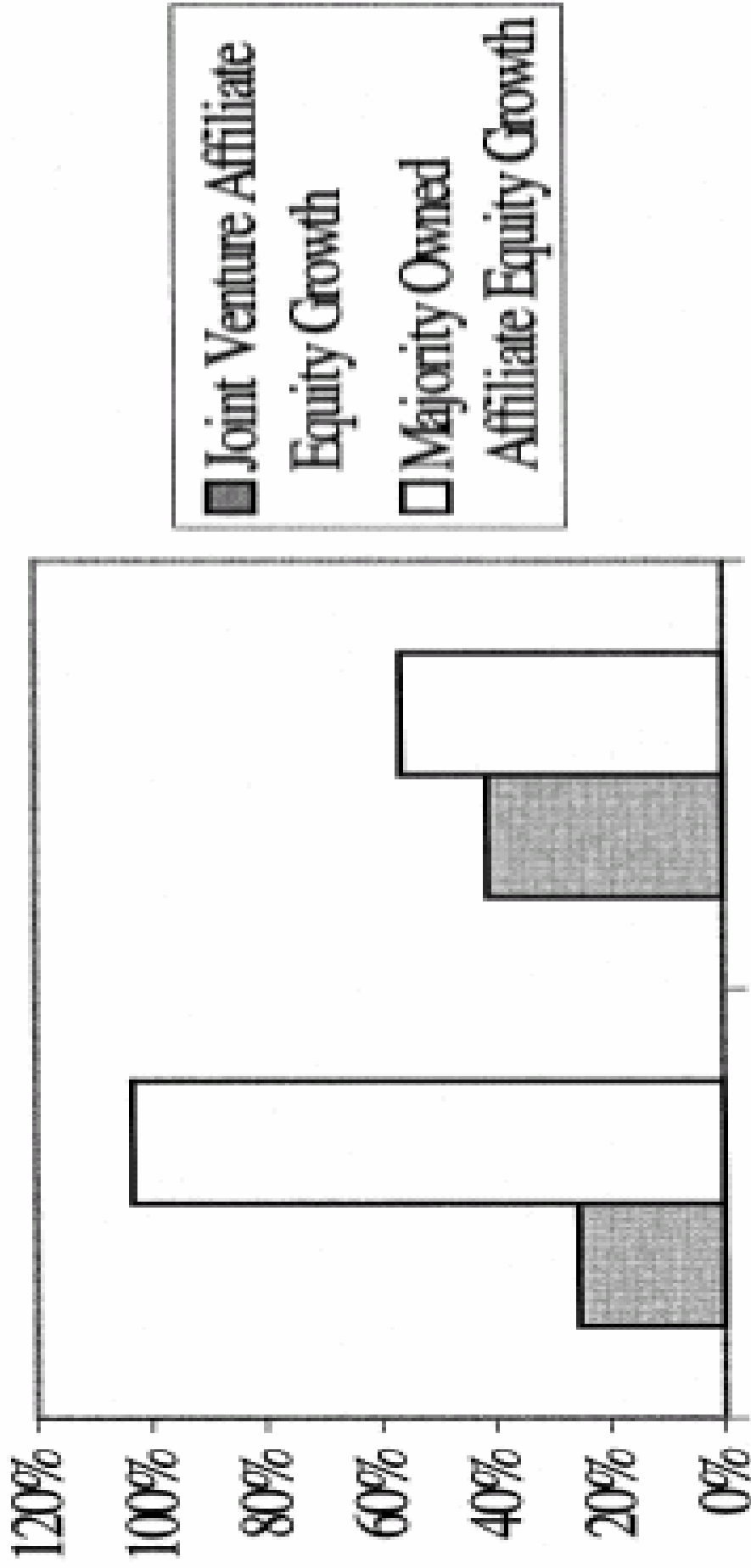


## Effects of foreign tax credit limits.

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- The Tax Reform Act of 1986 penalized foreign joint ventures by putting each corporation owned between 10%-50% by Americans into a separate “basket” for the foreign tax credit calculation.
- As a result, U.S. international joint ventures declined sharply after 1986: evidence from Desai and Hines, “Basket cases,” *Journal of Public Economics*, March 1999.
- During that time period, most U.S. firms had excess foreign tax credits, so the effect of the tax change should have been most pronounced for joint ventures in low-tax countries (since they could not apply excess foreign tax credits from elsewhere), and the evidence is consistent with that incentive.





### Low Tax Countries High Tax Countries

Fig. 2. Median % change affiliate equity, 1982-1989.

# Arm's length pricing and transfer prices

- A true ALP is of course very difficult measure in practice, but does it even make sense conceptually?
- Devereux and Keuschnigg (2009) present a theoretical model in which companies locate production of an intermediate good abroad, which is then purchased back for use in final production
- Companies can choose whether to locate abroad through FDI (a wholly owned subsidiary) or through outsourcing (licensing a third party)
- Relevant prices are a royalty paid by the foreign company, and the price of the intermediate good

# Arm's length pricing and transfer prices

These prices are different between FDI and outsourcing, even in the absence of tax

- Because of financing constraints, in the FDI case, the parent needs to raise income in the foreign sub, and does so by charging no royalty and paying a high price for the intermediate good
- If the tax is based on the ALP (ie prices in the other case), there are first order effects on investment, and some companies would choose outsourcing instead of FDI



## Alternatives to current taxes.

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- Destination-based consumption taxes (VATs) have proven popular everywhere other than the U.S.
- There are ways to modify current business taxes to give them some of the features of destination-based VATs.
- In practice, of course, income-style business taxes contribute only small fractions of total tax revenues, including tax revenues collected by businesses.



# Destination-based corporation tax

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- On efficiency grounds, we would like to reduce distortions to
  - Location of investment
  - Ownership
  - Location of profit
- Corporation taxes based on corporate residence and source are likely to generate all three distortions. These could in principle be avoided by a tax based on **destination**, like VAT (see Bond, Devereux, 2002, Auerbach et al, 2008)





# Destination-based cash flow tax

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## Basic idea:

- Introduce (R-base) cash flow tax
  - No relief for interest
  - Immediate expensing for all capital expenditure
- Make border adjustment
  - Exports zero rated
  - Imports taxed
- Equivalent to a VAT, with relief for labour costs
  - Value added = economic rent + return to labour
- DBCFT is a destination-based tax on economic rent



# Destination-based cash flow tax

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- Location of production not affected
- Ownership not affected
- Only sales to final consumers will be taxed
  - Intra-company sales not taxed, so transfer pricing becomes irrelevant
  - Though problem of identifying location of sales for some products
- No shifting through debt
- Problem of taxing financial intermediaries
- Could be administered as separate corporation tax, or by introducing a VAT and making offsetting adjustment to payroll taxes on labour income

# What is the impact of other taxes?

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- Indirect taxes discourage FDI also: evidence from Desai, Foley and Hines, "FDI in a world of multiple taxes," *Journal of Public Economics*, December 2004.
- Evidence (1999) indicates that higher indirect taxes discourage FDI, but do not affect capital/labor ratios in the way that income taxes do. Also indirect taxes do not affect reported profit rates in the way that income taxes do.
  - 10% higher local indirect tax rates are associated with 7.1% reduced local assets.



## Indirect taxes

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- Evidence from the BEA on sales, VAT, and excise taxes; property taxes; import and export duties.
- Indirect tax obligations exceed income tax obligations.
- There is considerable variation across country and industry.

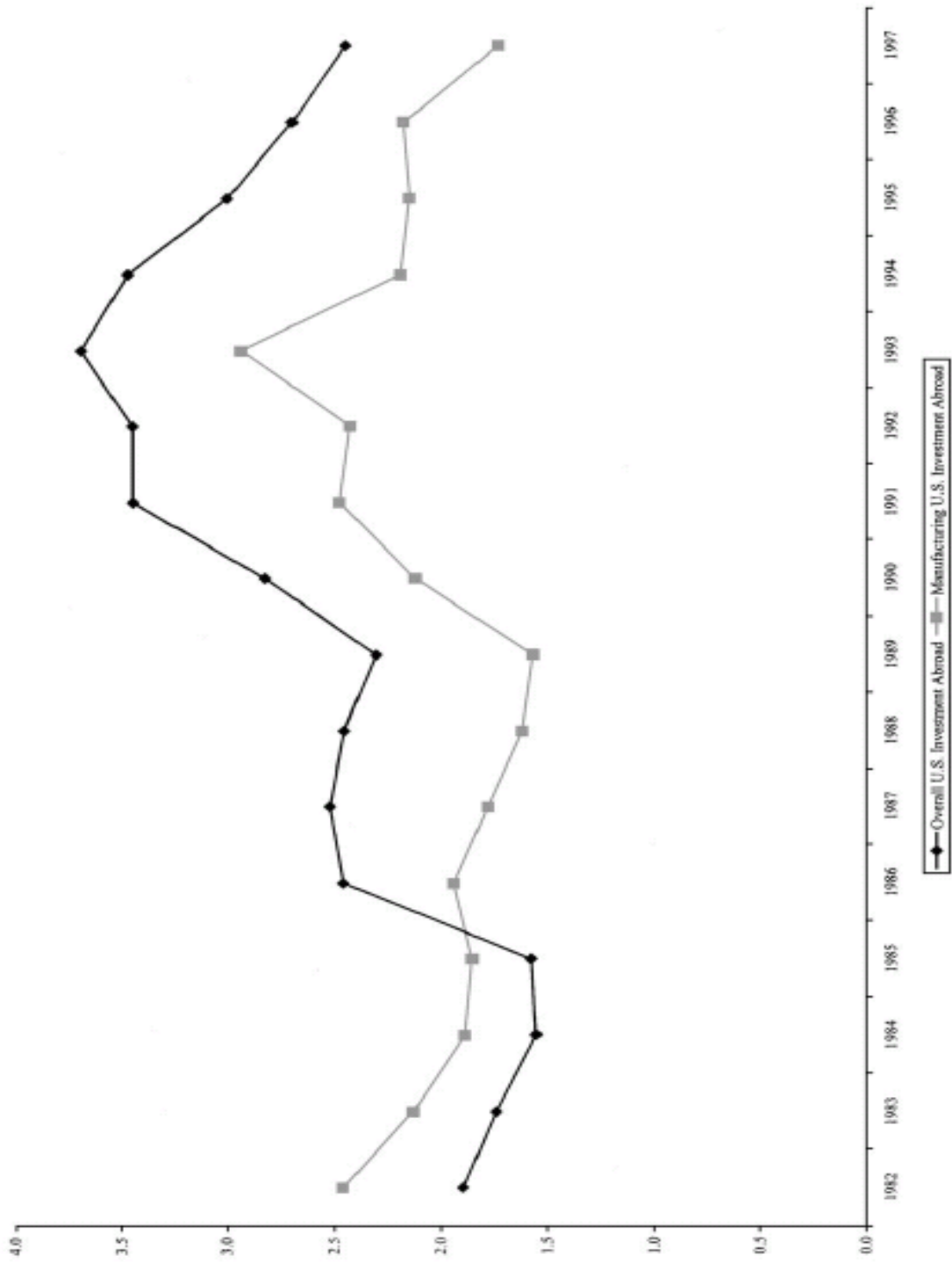


Fig. 1. The ratio of indirect taxes to income taxes for U.S. multinational affiliates, 1982 – 1997. The figure presents the ratio of indirect taxes to income taxes from 1982 to 1997 for all affiliates of U.S. multinationals and for affiliates in the manufacturing sector.

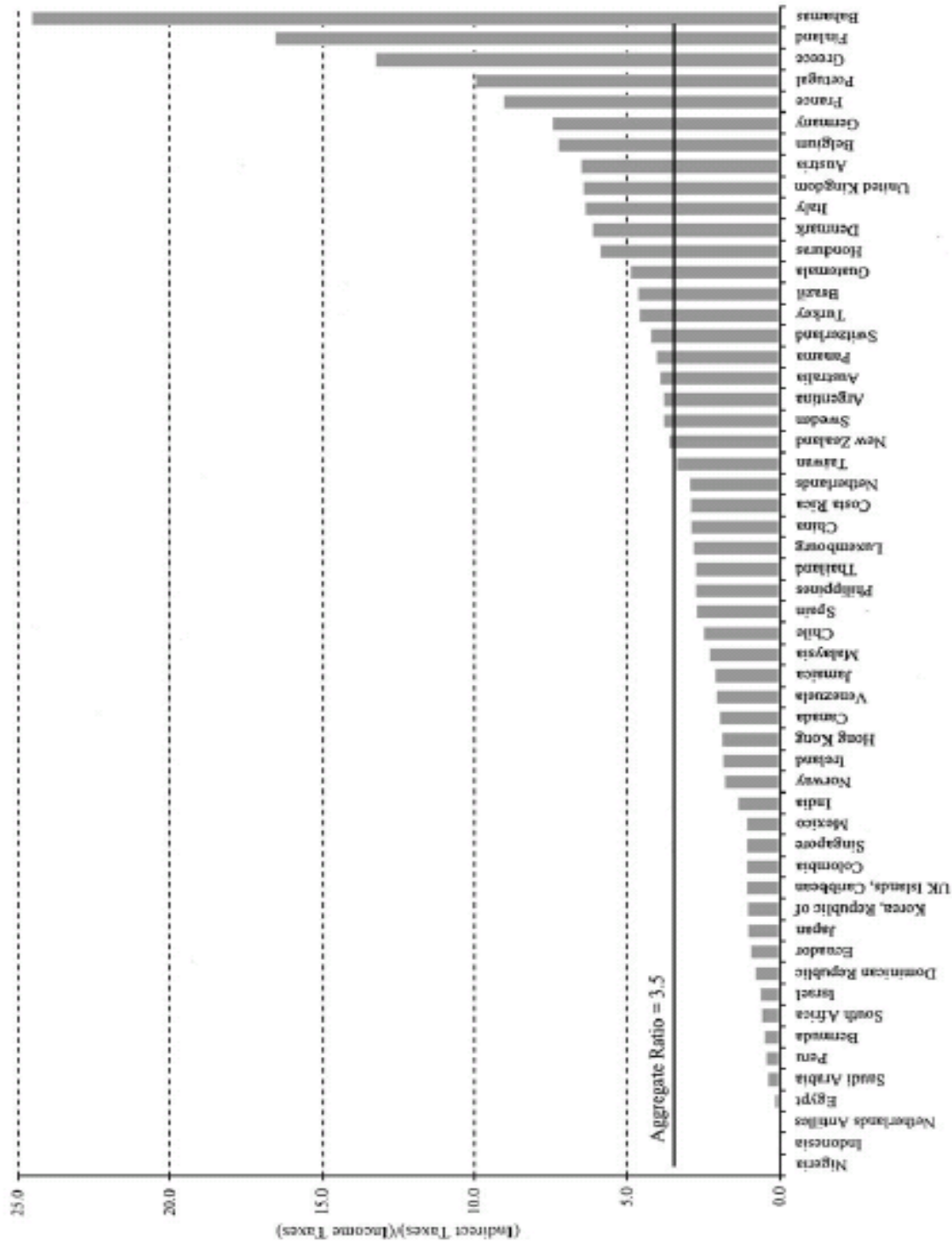


Fig. 2. The ratio of indirect taxes to income taxes for U.S. multinational affiliates, by country, 1994. The figure presents the ratio of indirect taxes to income taxes, by country, in 1994, for U.S. multinational affiliates. The aggregate ratio is the ratio of indirect taxes to income taxes paid worldwide by affiliates.

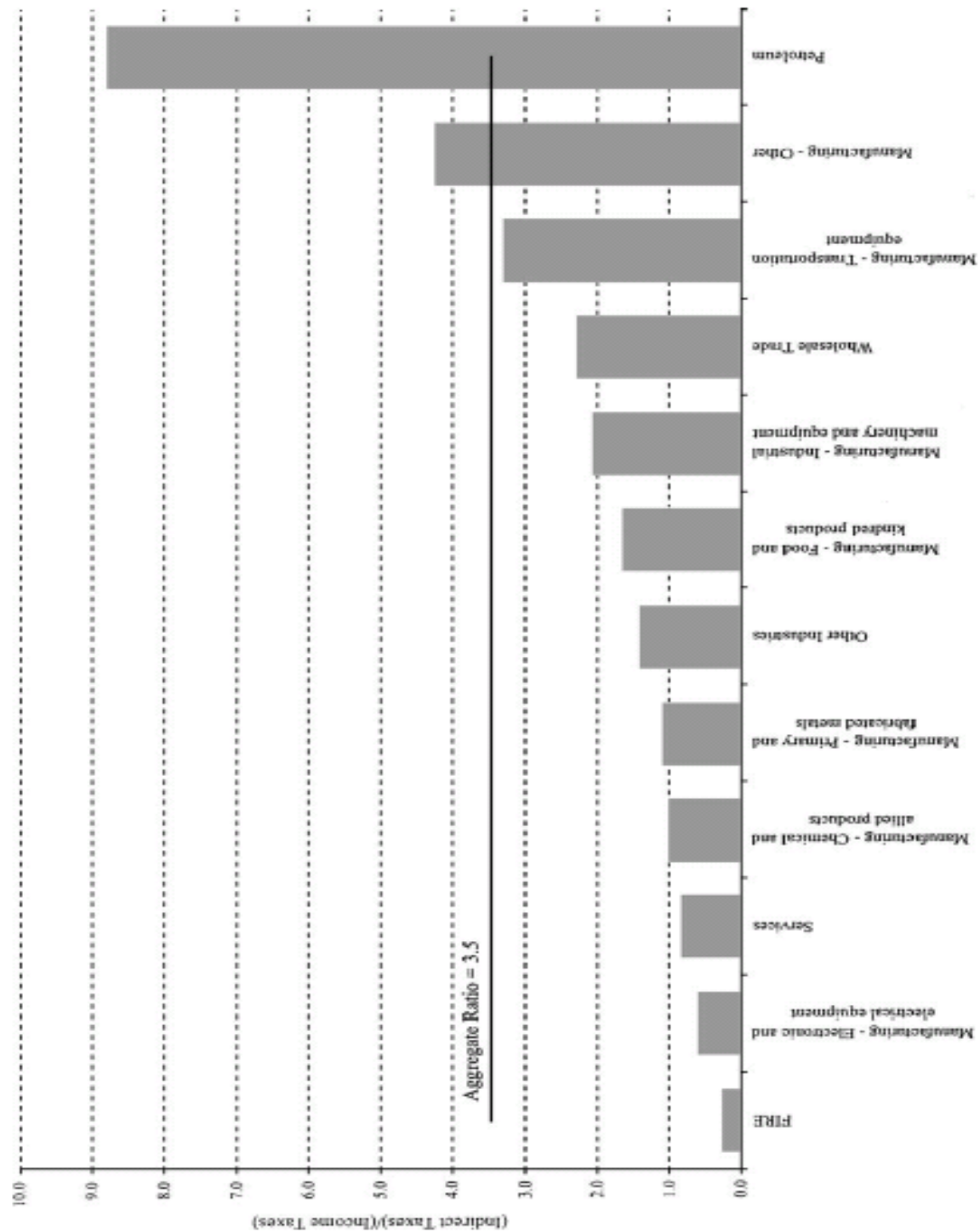


Fig. 3. The ratio of indirect taxes to income taxes for U.S. multinational affiliates, by industry, 1994. The figure presents the ratio of indirect taxes to income taxes, by industry, in 1994, for U.S. multinational affiliates. The aggregate ratio is the ratio of indirect taxes to income taxes paid worldwide by affiliates.

Table 2

## The Impact of Taxes on Multinational Affiliate Activities

| Dependent Variable:                       | (1)                  | (2)                   | (3)                   | (4)                   | (5)                          | (6)                 | (7)                       | (8)                  |
|---|----------------------|-----------------------|-----------------------|-----------------------|------------------------------|---------------------|---------------------------|----------------------|
|   | Log of Assets        |                       | Log of Gross Product  |                       | Employee Compensation/Assets |                     | Net Income/Owner's Equity |                      |
| Constant                                  | 86.9505<br>(15.2138) | 108.5724<br>(15.3874) | 139.6411<br>(17.8630) | 147.7262<br>(18.1737) | 18.2452<br>(4.2098)          | 18.2822<br>(4.3186) | -7.8975<br>(20.0408)      | -9.5332<br>(17.8446) |
| Income Tax Rate                           | -0.6205<br>(0.0983)  | -0.6572<br>(0.0941)   | -0.1792<br>(0.1081)   | -0.1895<br>(0.1071)   | 0.1045<br>(0.0179)           | 0.1063<br>(0.0187)  | -0.2490<br>(0.0921)       | -0.2391<br>(0.0846)  |
| Indirect Tax Rate                         |                      | -0.7079<br>(0.0830)   |                       | -0.2852<br>(0.0990)   |                              | 0.0028<br>(0.0164)  |                           | 0.0361<br>(0.1454)   |
| Log of Average Compensation per Employee  |                      |                       |                       |                       | 0.0180<br>(0.0051)           | 0.0180<br>(0.0051)  |                           |                      |
| Parent, Industry, and Year Fixed Effects? | Y                    | Y                     | Y                     | Y                     | Y                            | Y                   | Y                         | Y                    |
| GNP Controls?                             | Y                    | Y                     | Y                     | Y                     | Y                            | Y                   | Y                         | Y                    |
| No. of Obs.                               | 42,856               | 42,826                | 34,676                | 34,676                | 42,455                       | 42,429              | 38,140                    | 38,117               |
| R-Squared                                 | 0.3455               | 0.3491                | 0.3453                | 0.3457                | 0.6651                       | 0.6652              | 0.2364                    | 0.2365               |



# Which other taxes?

- Which taxes does economic theory suggest might affect location and investment decisions?
  - Employers' payroll taxes, if they cannot be shifted onto workforce
    - But would be largely shifted if capital mobile and labour immobile
  - Origin taxes based on sales
  - Other sales taxes if levied on inputs
  - Border taxes

# Which other taxes?

- Buettner and Wamser (2008) use data on location of activities of German multinationals (1996-2004) using confidential Bundesbank data
- Analyze location of PPE across 22 countries, and consider effects of
  - corporation tax
  - sales taxes and VAT
  - excises
  - import duties
  - property taxes
  - taxes on skilled labour

# Which other taxes?

- Two sets of results
- Without country fixed effects, they find negative and significant effects of
  - VAT and sales taxes
  - excise taxes
  - property taxes
  - Taxes on skilled labour
- But with country fixed effects, all of these become insignificant (though corporation tax still significant)
- So all the effects are due to cross-section variation – and we can't rule out that these tax effects are an unintended proxy for other differences across countries



## Cross-country tax policy comparisons.

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- Paper: “How globalization affects tax design.”
- Authors: James Hines (University of Michigan and UC-Berkeley) and Lawrence Summers (Harvard University and National Economic Council).
- Forthcoming for publication in Tax Policy and the Economy, volume 23 (University of Chicago Press, 2009).



## Problems for governments that need tax revenue.

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- Economic globalization increases demand for government spending to address dislocations and effects on income distribution.
- By contributing to prosperity, greater international economic integration makes it possible to raise significant amounts of tax revenue. At the same time, however...
- Greater international mobility of goods, people, businesses, intangible assets, and portfolio and direct investment capital increases the mobility of the tax base and the distortions associated with any given level of taxation.
- International mobility also facilitates the use of exciting new methods to avoid domestic tax liabilities.
- **Globalization turns all countries into small countries.**



## What does the theory say?

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- There are many realistic scenarios in which competition together with mobility depresses tax rates and erodes tax bases.
- The efficiency cost of taxing capital income together with avoidance behavior by taxpayers puts upper limits on the income tax rates governments are willing to impose.
- Countries that maintain high tax rates while others reduce them are apt to lose economic activity and the taxes that go with it.
- All of this makes it hard to maintain equitable distributions of tax burdens with traditional income-based taxes.



## American policy.

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- The United States has a relatively small public sector, accounting for about 26% of GDP, significantly lower than the 36% OECD average. (2004 figures)
- U.S. personal income taxes account for a much higher fraction (35%) of total U.S. taxes than is true of the OECD average (25%).
- The U.S. gets 8.7% of its tax revenue from corporate taxes (v. 9.6% for the OECD average) [2004 data; the fraction rose subsequently].
- Taxes on goods and services are much lower for the U.S. (18% of revenue) than for the OECD (32%).
- The top U.S. personal income tax rate of 41% is typical of OECD countries, though the U.S. statutory corporate tax rate of 39% is the highest in the OECD, well above the 30% average.
- **The United States still has a large country tax policy.**



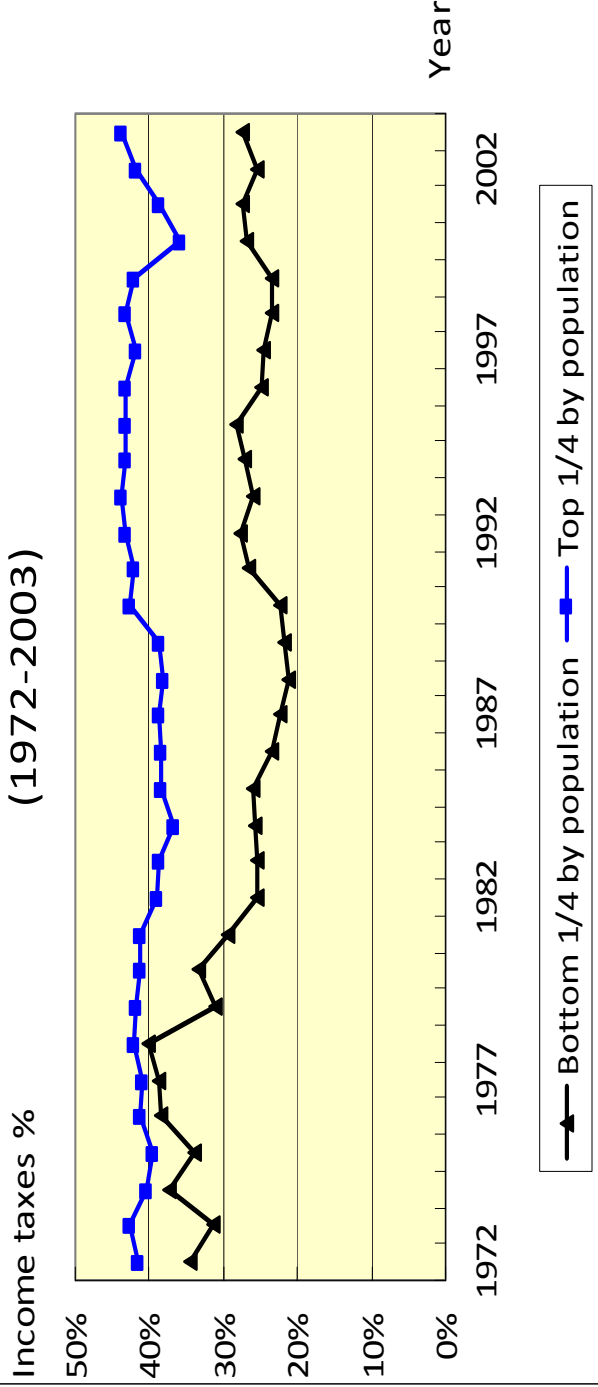
## Tax policies around the world.

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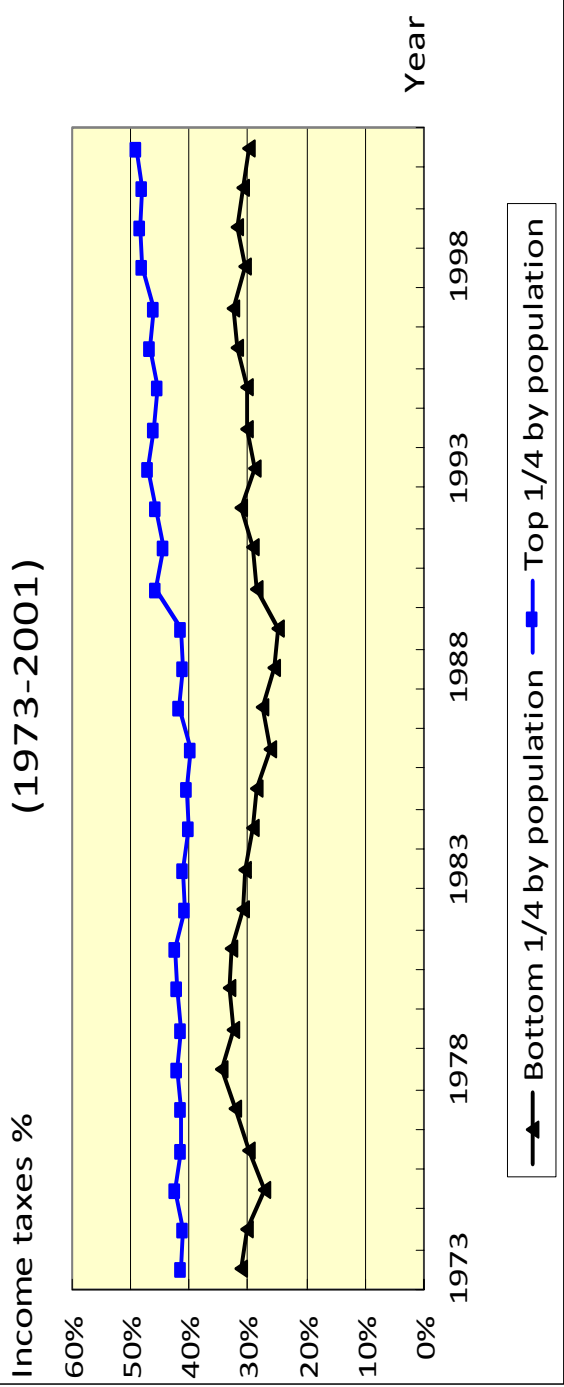
- The tax policy challenges facing the United States due to globalization have confronted small open economies for many years; in that sense, large countries are now catching up with them.
- Globalization is a process that makes every country small, which is why it is interesting to consider the tax policies that small countries use.
- The evidence indicates that governments of countries with small open economies have relied relatively little on personal income taxes and corporate income taxes, instead using trade taxes and taxes on sales of goods and services.
- The difficulty and distortions of using income taxes has driven much of the world in the direction of expenditure taxation.

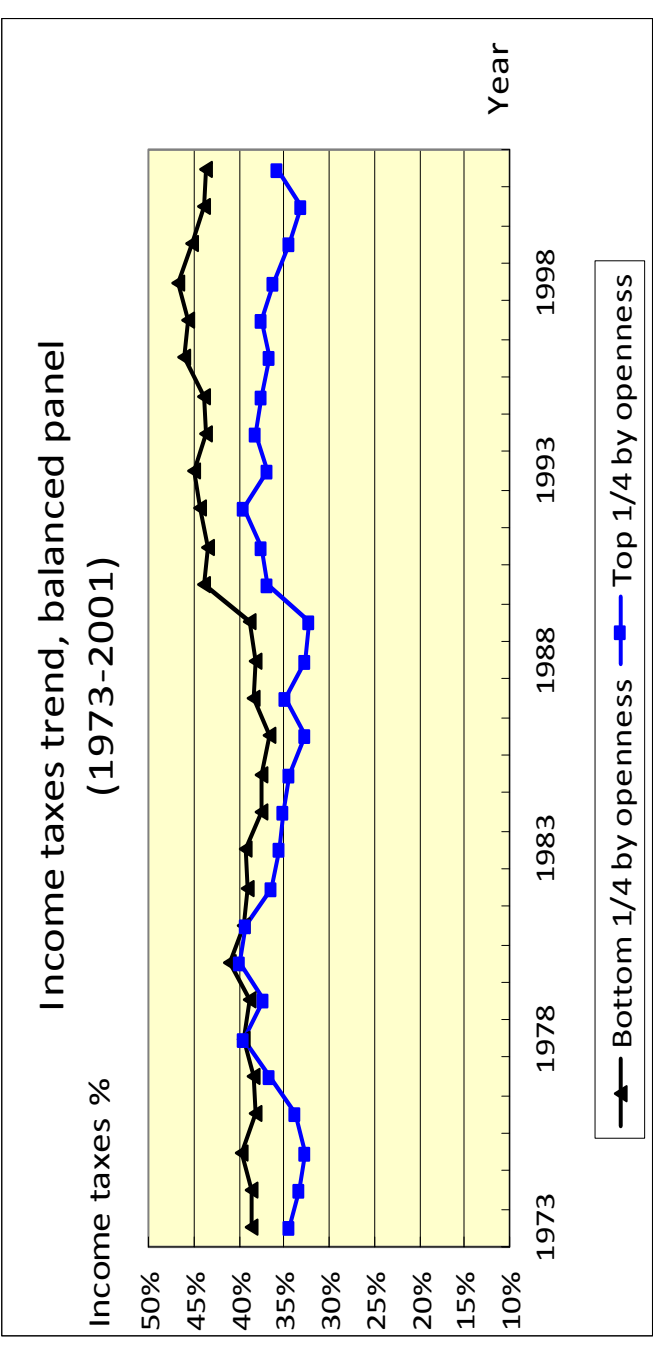
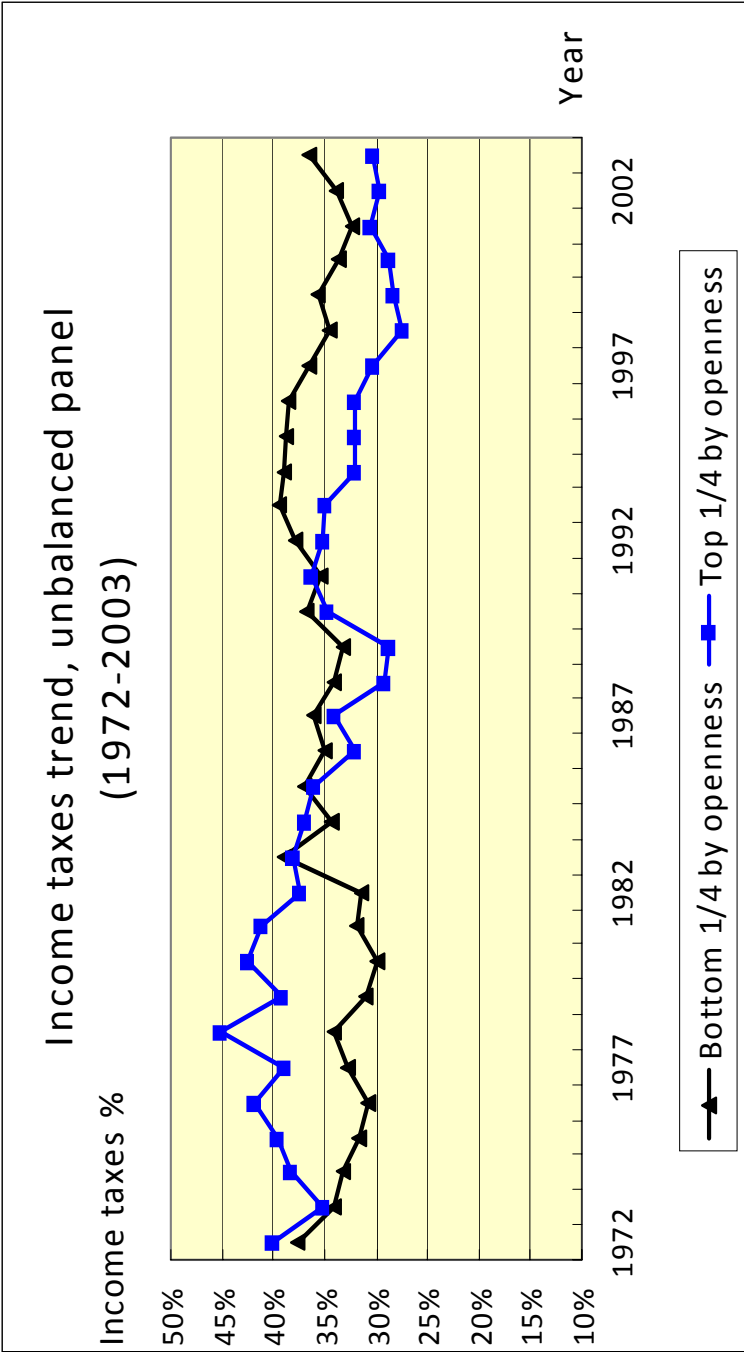


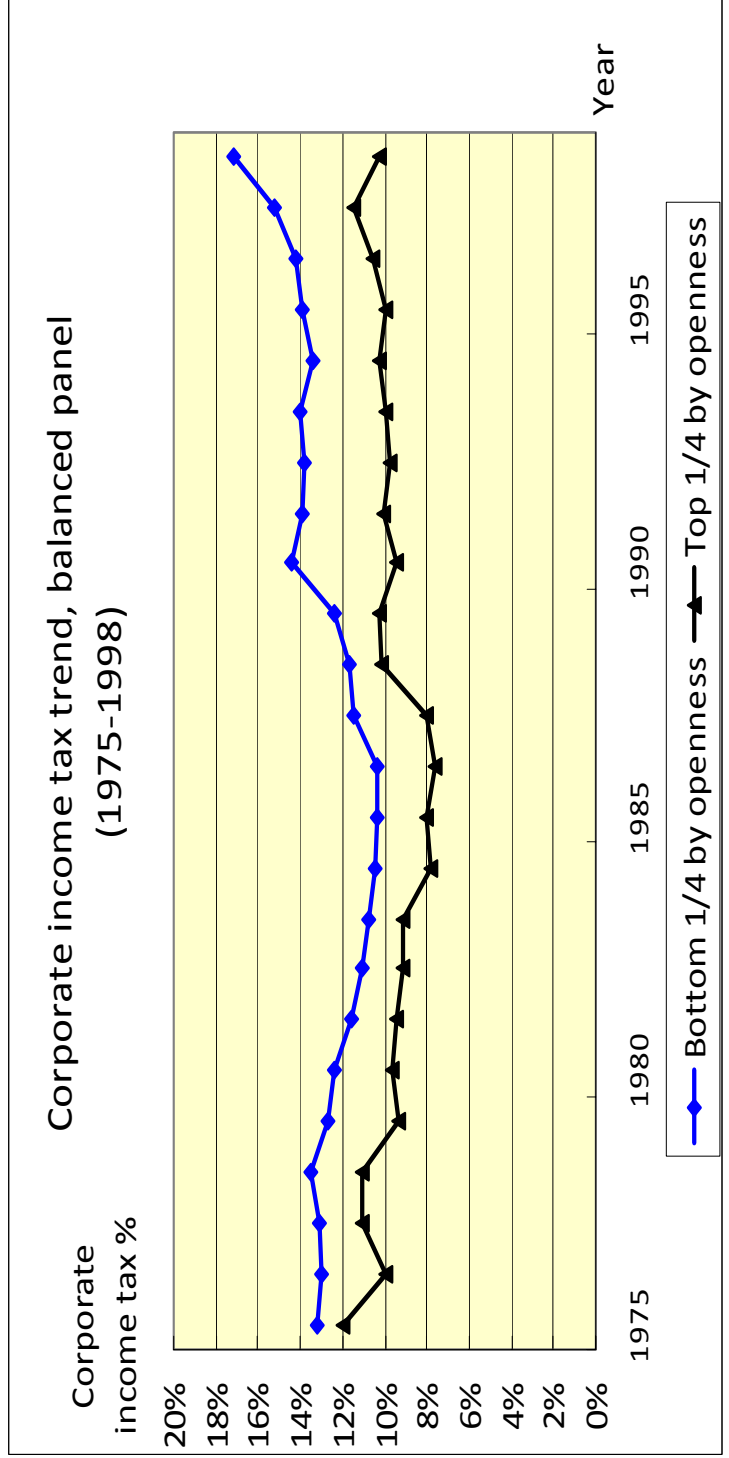
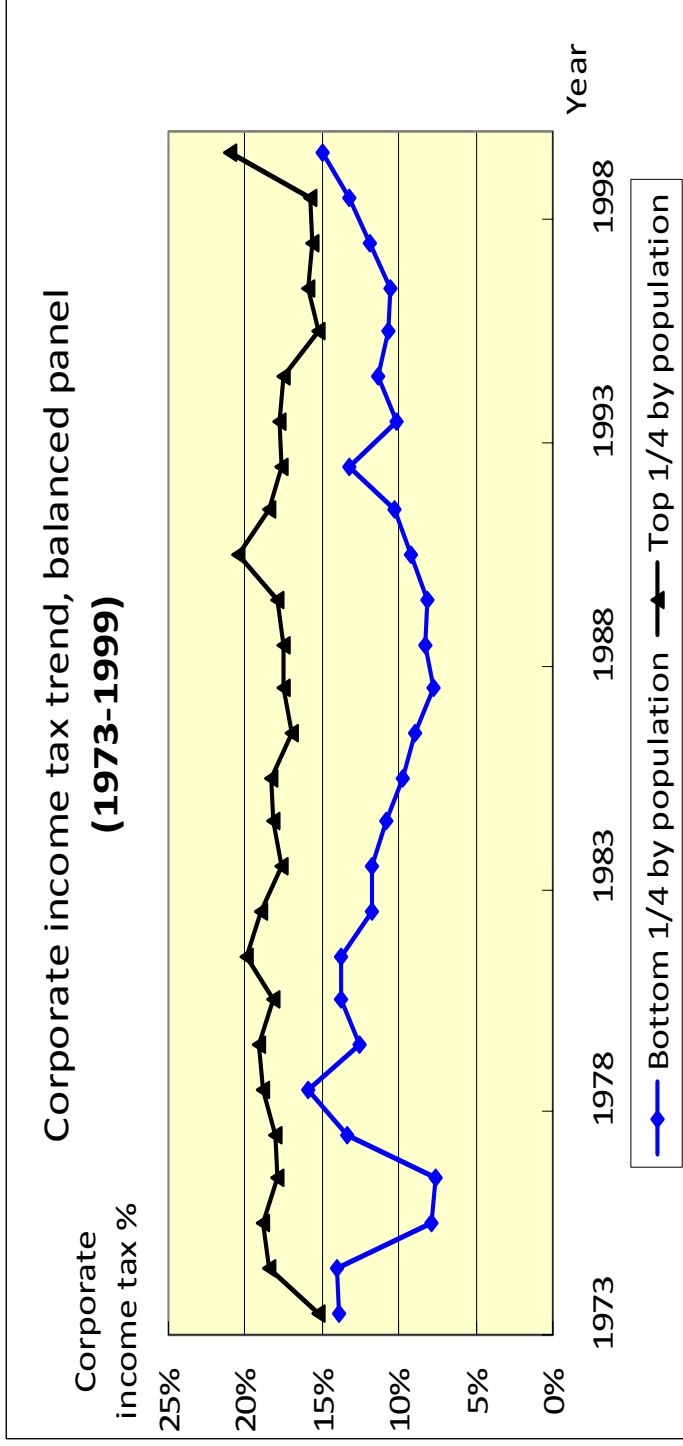
Income taxes trend, unbalanced panel  
(1972-2003)



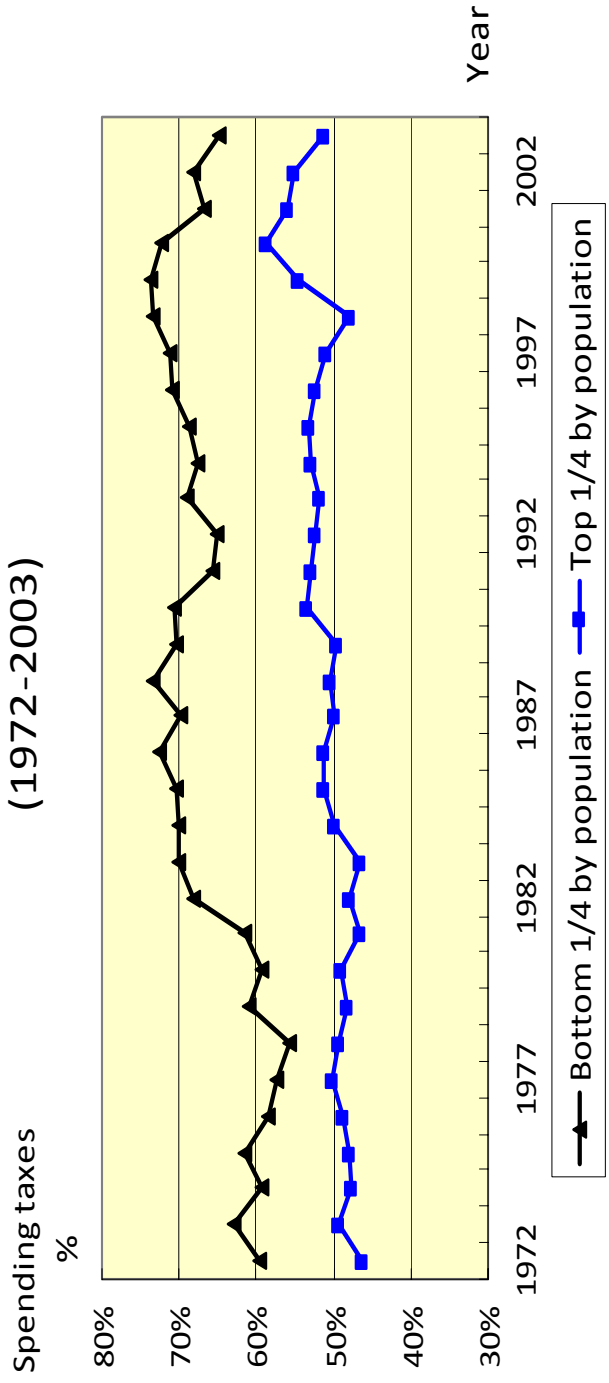
Income taxes trend, balanced panel  
(1973-2001)



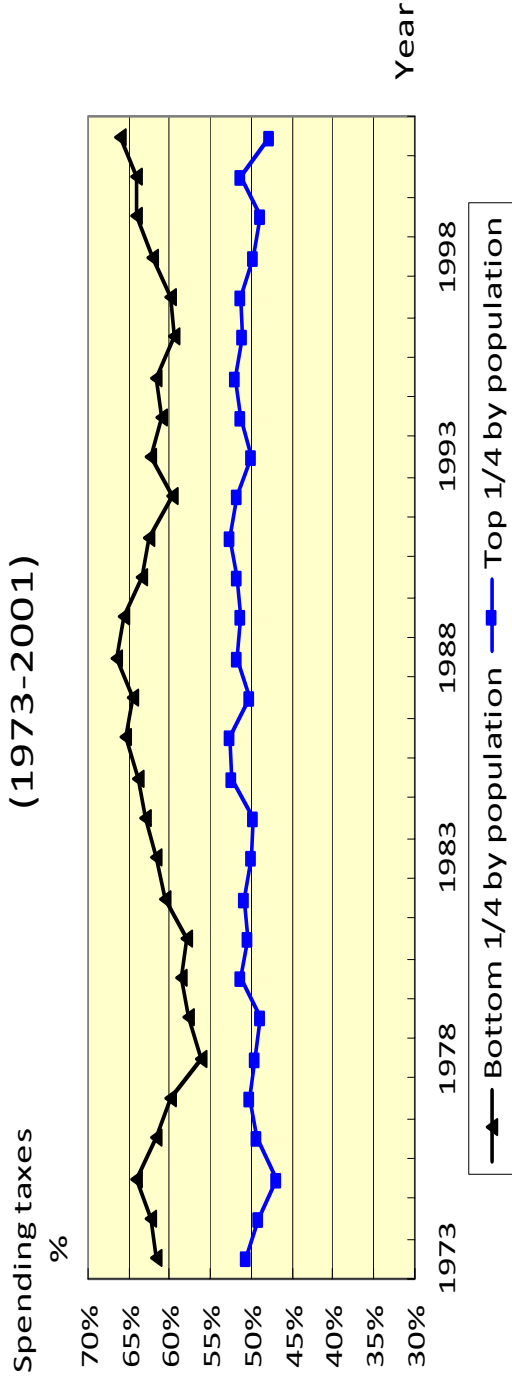




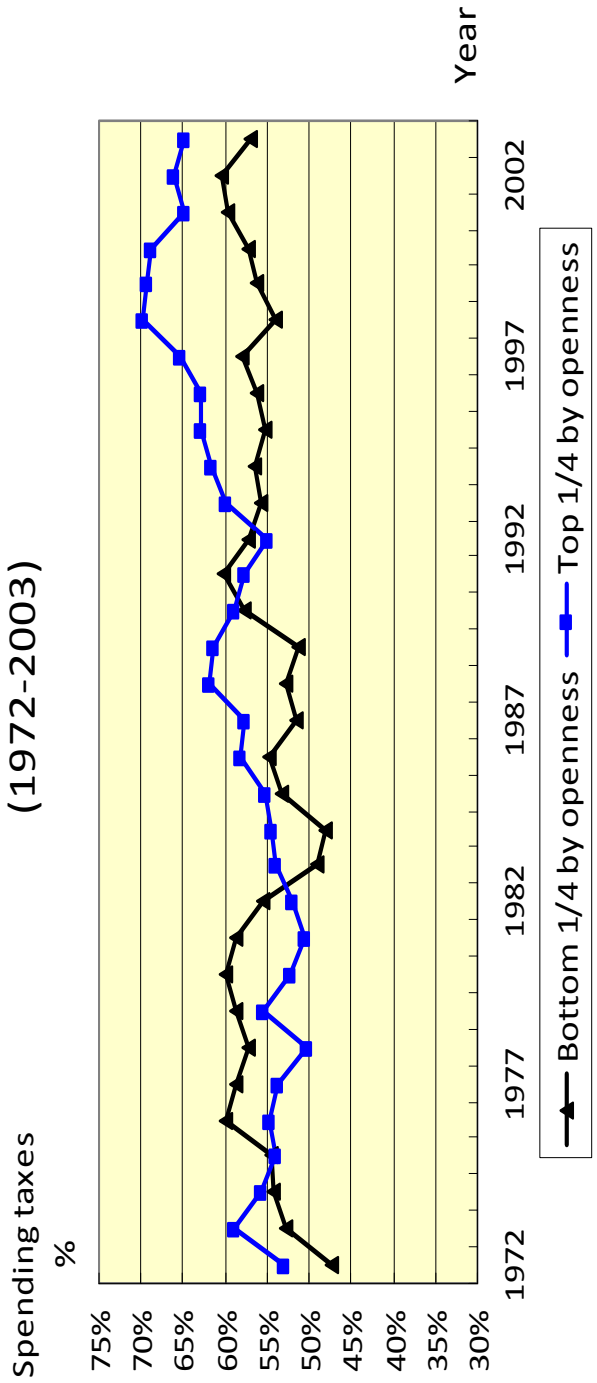
Spending taxes trend, unbalanced panel  
(1972-2003)



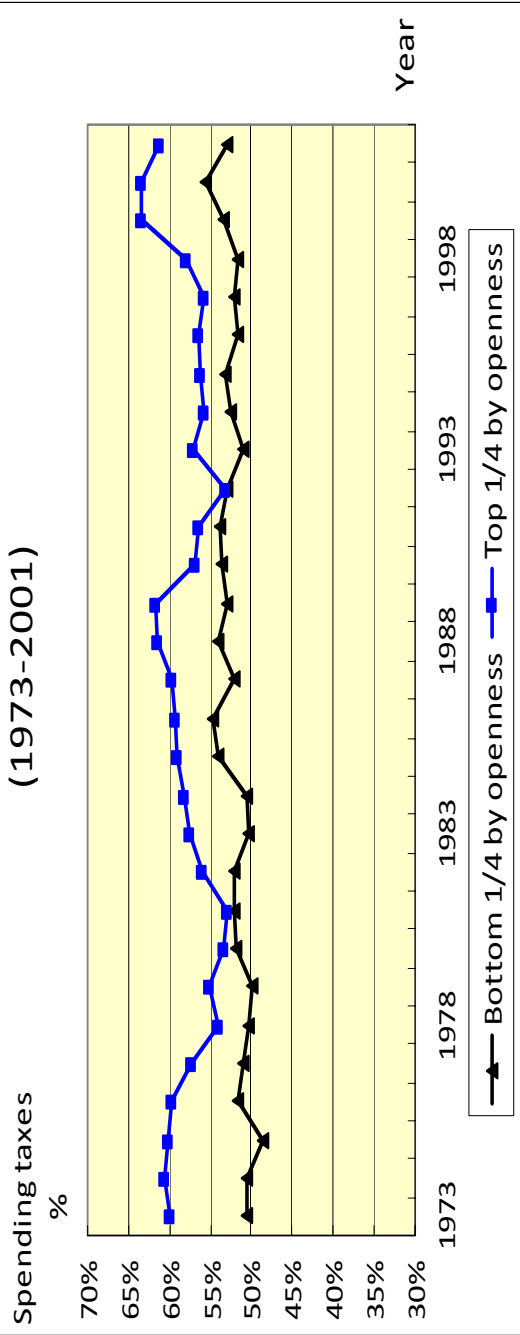
Spending taxes trend, balanced panel  
(1973-2001)



Spending taxes trend, unbalanced panel  
(1972-2003)



Spending taxes trend, balanced panel  
(1973-2001)





## Analysis.

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- The statistical evidence supports what is apparent from the charts.
  - In 1999, 10% greater national population is associated with 1% less reliance on corporate and personal income taxes, controlling for economic conditions.
  - Similar conclusions appear in changes over time, as populations rise and fall relative to each other.
- Some of this pattern reflects the growing popularity of VATs.
- As the world relies increasingly on expenditure taxation rather than income taxation, countries such as the United States will face intensifying pressures to move its tax policy in that direction.



## Interpretations.

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- Globalization increases the costs of using corporate income taxes and personal income taxes.
  - Tax base erosion.
  - Economic distortions due to changed behavior.
- International cooperation might mitigate these costs.
- In the absence of cooperation, small countries have responded to these costs by relying less on income taxes and more on taxes that are expenditure based (such as VATs).
  - Expenditures are typically less internationally mobile than is income production.
  - Expenditure taxation offers fewer ready avoidance opportunities.
  - Use of VATs in place of income taxes raises important issues of equity.
- Future tax policies of large countries may more closely resemble those of small countries today, posing significant policy challenges.