Seminar on Public Finance

Lecture #11: April 10

Tax Reform: Income vs. Consumption Taxes

Tax Rates and Base

Tax Evasion

- Why do we care about tax evasion?
  - Revenues.
  - Efficiency.
    - No positive externalities to cheating.
    - Requires higher marginal tax rates.
    - Higher deadweight losses.
  - Vertical equity.
    - Wealthy have many more opportunities to evade taxes due to type of income they report and resources available to them.
  - Horizontal equity.
    - Are your peers also paying?

Tax Evasion (2)

- Recall: efficiency of tax code is tied to the elasticity of tax revenues relative to tax rate.
    - Literature shows this is higher for high income individuals, singles, non-heads of households, and generally increases with the statutory tax rate.
    - Evasion is another margin by which individuals can lower tax revenues when rates increase.

Tax Rates and Revenues

- The impact of change in tax rates on tax revenues is a function of five factors:
  1. Direct: simply rate change times base.
     - Static effect.
  2. Indirect: behavioral or gross income effect.
     - Labor, saving or investment response might reduce the tax base.
     - Tax avoidance
  3. Indirect: reporting effect.
     - Reclassify income, such as a return to capital vs. a return to labor.
     - Tax avoidance.
  4. Indirect: exclusion effect.
     - Higher marginal rate encourages individuals to take advantage of exemptions and deductions (e.g., charity) since they are now worth more.
     - Tax avoidance.
  5. Indirect: compliance effect.
     - Tax evasion.

Tax Avoidance vs. Tax Evasion

- **Avoidance** is **legal**: changing behavior/reporting in order to minimize tax burden, but operate within the bounds of the tax code.
    - e.g., A corporation with cash on hand financing an investment with debt instead of those retained earnings.
- **Evasion** is **illegal**: misreporting income/deductions.
    - e.g., A sole proprietor deducting the all expenses associated with his vehicle even though it's only used for work part of the time.

Tax Rates and Revenues

- What effect dominates?
  - Typically the direct effect
    - i.e., a higher rate raises revenues, or tax cuts do not pay for themselves).
    - But depends on individuals affected and type of income.
  - Wage income of a married head of household will have low elasticity.
  - Capital income of high marginal rate payer will be much higher.
  - A "central estimate" is roughly -4% decline in tax base for a 10% increase in tax rates. But, a wide range of values.

Tax Rates and Revenues

- Most of indirect impact on taxable income base comes from exclusion, income and reporting effects. NOT behavioral.
  - Implication: tax base itself causes much inefficiency.
  - If tax base used a "true" measure of economic income such as Haig-Simons, there would be less response to tax rates. Less avoidance.
  - See Kopczuk (NBER Working Paper No. 10044) for a review.

Tax Compliance and Returns to Enforcement

- When IRS increases enforcement resources, there are also direct and indirect effects on tax revenues.
  - Direct: How much tax revenues did the auditor directly generate through his/her activity?
    - Depending on activity, this might range from 2:1 to 6:1.
    - e.g., audit a corporation and find that they underpaid taxes by $1,000,000.
  - Indirect effect: What was the effect of increased enforcement on those not directly affected?
    - Perception or word of mouth.
    - How much more to filers pay because they see others get audited?
    - Much uncertainty regarding this. Values range from 1:1 to roughly 6:1.
    - But evidence is very scant and incredibly difficult to measure.

Tax Compliance and Returns to Enforcement (2)

- Policymakers have seen adding more IRS resources as "easy" money in the past.
- Use as "pay fors."
    - Treasury and JCT will no longer "score" additional IRS resources as a matter of policy. But policy being revisited.

Tax Reform: Income Tax

Reforming the Current Income Tax System

- One method to reform the current system is to eliminate various tax expenditures and reduce or flatten rates.
  - 2012 tax expenditures: Home Mortgage Interest = \$100 billion, State and Local = \$75 billion, Charitable = \$53 billion
- Other plans have more fundamental changes to system.

Some non-traditional candidates:

1. Limited and Broad Integration: The Comprehensive Business Income Tax (CBIT)
2. Graetz Proposal
3. Tax Panel Report (2005): Simplified Income Tax (not covered)

Income Tax Reform: Integration of Individual and Corporate Income Taxes

- Two flavors. Limited and Broad.
- Limited approach attempts to ensure corporate income is not taxed twice, but is taxed at least once.
  - Makes no other substantive changes.
- Broad approach involves other changes (CBIT).

Income Tax Reform: Integration of Individual and Corporate Income Taxes

- Big Question: where to tax corporate/business profits?
  - At the firm level?
  - At the shareholder level via capital gains or dividends?
  - This choice matters less if the tax rates are largely the same.
  - Currently, top corporate rate $<$ top individual rate.

Integration of Corporate and Individual Income Taxes

- "Integration" attempts to maintain neutrality of the tax system by more uniform taxation across the corporate and non-corporate (i.e., "pass through") sectors.

- Recall the different incentives facing C corporations:
  - Debt financing is favored over equity financing.
  - Retained earnings favored over dividends.
    - Do corporations hoard cash?
  - Double tax on capital in the corporate sector leads to higher METRs.
  - Losses are trapped within the entity. Many not used.
  - Graduated rate structure can lead to tax sheltering.

Distribution-Related Integration Prototypes

- These prototypes retain a separate corporate level tax on retained earnings
- But eliminate tax on earnings distributed to shareholders as dividends.
- These types of systems are used in Europe.

Distribution-Related Integration Prototypes:

1. Dividend Exclusion
    - Excludes dividends and capital gains from shareholder's income.
    - Very simple. Relatively easy to administer.
    - Profits are taxed at the corporate rate.
    - But, are all profits taxed once? What happens with tax credits?
2. Imputation Credit
    - Shareholders get credit for tax paid by corporations.
    - Shareholders only pay tax on amounts that have been sheltered or shielded by preferences.
        - e.g., tax credits can lower the corp rate below 35%, but this would then lower the amount of credit shareholders get for corp tax paid
    - Very flexible but complicated.
    - Profits taxed at shareholder rate.

Distribution-Related Integration Prototypes:

3. Dividend Deduction
    - Corporations get a deduction for dividends paid.
    - Taxed at shareholder rate.
    - But what about tax-exempts and foreign shareholders?
        - If give credit, profits not taxed
    - Do managers care about shareholder tax?
    - Is this a more powerful incentive for managers to distribute cash?
        - Yes, see Avi-Yonah, Sept 2010, University of Michigan

The Dividend Exclusion System

- Considered for Bush dividend tax cut.
  - But, used lower rate instead due to complications with administering the proposal.
  - Much additional bookkeeping.
- Corporations must compute an "Excludable Dividend Account" or EDA to measure the dividends that can be excluded from shareholder income.
  - These are dividends on which corporate tax has been paid.
  - The corporate tax rate applies to all dividend distributions, not the shareholder's rate.
  - Capital gains are taxed the same way.
  - Continues to tax equity investment from tax-exempts at the entity level.
- But, are all profits currently taxed twice? Do they need relief?

Are All Corporate Profits Taxed?

- Not all corporate profits are taxed twice.
  - It is possible profits are not taxed at all, taxed once, twice or even more (dividends paid to other corporations)
- Debt financed investment.
  - At the margin, we assume the cost of funds for project equals the return to investment.
  - Rate charged for loan (deduction for interest expense) equal to return from project.
    - Result: no tax at corporate level on "normal return" to project
    - Only double tax returns above rate for loan
- Profits that are shielded due to "tax preferences".
  - Tax credits, accelerated depreciation.
- Distributions to tax-exempt entities. No tax at all?

Dividend Exclusion System

- Additions to EDA = US tax paid / .35 - tax paid
  - If tax paid = $100, then EDA = 100 / .35 - 100 = $186
    - $286 pre-tax profits, tax = $100, after-tax profits = $186
  - When corporations exceed that amount in dividend payouts, it is taxable to shareholder so that corporate profits are taxed at least once.
  - Dividends are taxable when EDA is exhausted.
  - $0.54 tax paid supports $1 of excludable dividends.
  - Note: "preference income" paid to tax-exempts escapes taxation.
  - Alternative: could levy a "compensatory tax" at corporate level at same rate so it does not escape taxation.
    - i.e., tax at corp level and rate the amount of dividends going to non-taxables
    - No income would escape taxation.

Broad Integration: CBIT

- Comprehensive Business Income Tax (CBIT)
- "Integration of the Individual and Corporate Tax Systems, Taxing Business Income Once" (1992), US Treasury.
- Treat all businesses the same.
- Neutral taxation of capital income regardless of how the firm is organized: C corporation, S corporation, partnership, sole proprietorship.
- Tax **all business income at the business entity level.**
- Tax once.
    - No tax on dividends OR capital gains at the individual level.

Broad Integration: CBIT

- Like the "dividend exclusion system" but expanded.
- CBIT is a more comprehensive approach that attempts to address many inefficiencies at once:
  - Tax bias for debt finance
  - Tax bias for investment in non-corporate sector
  - Tax bias against dividends
  - Tax bias against investment generally
- 1992 Treasury study: CBIT-style reform could reduce corporate rate from 34% to 31% and be revenue neutral.
  - Single business tax rate set to maximum individual rate.
  - Then, in theory, it does not matter where we tax the income, as long as it is taxed only once.

CBIT Mechanics

- CBIT is **a business tax** rather than a corporate tax, does not depend on legal form.
- All business entities subject to CBIT.
- All tax is paid at the business level, none is "passed through" to individuals.
  - Includes tax losses. Trapped at business level.
  - This can be a sizable "revenue raiser."
    - Recall that corporations do not use many losses or take many years to use them.
- NO deductions for interest or dividends paid by firms, but exclude interest or dividends received by shareholders and debtholders.
  - Note: for interest, **we are simply moving the point of taxation from the lender to the borrower** by denying the interest deduction and excluding income.
- Business tax base is same as currently except that:
  - No deduction for interest payments.
  - Exclude any capital gains or dividends received from other CBIT entities to avoid double tax.

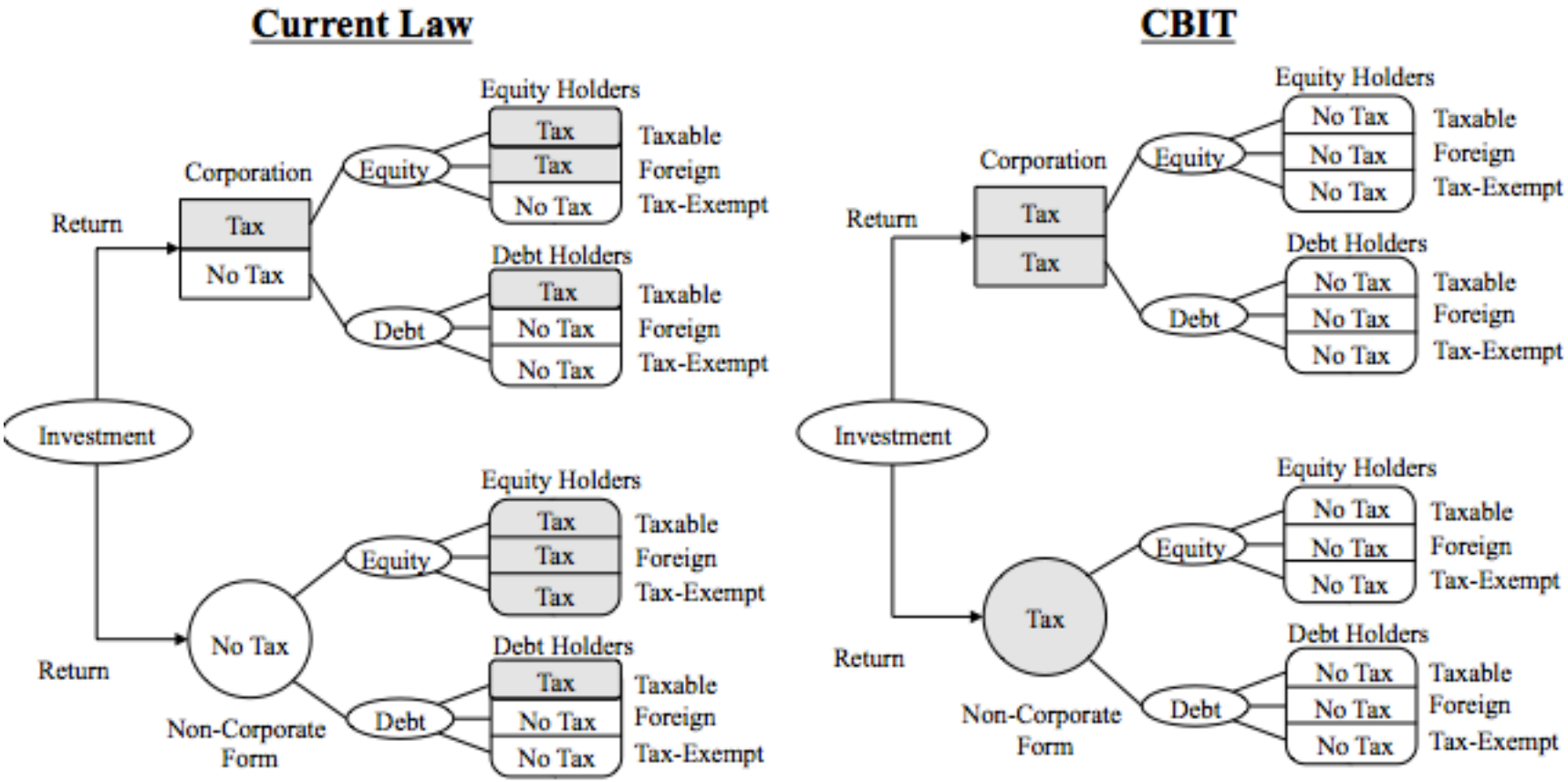
CBIT Mechanics

- An exception is made for small businesses.
  - Very difficult to separate "returns to labor" from returns to capital for these entities. Also, a tax increase since they likely face a tax rate $<$ highest rate.
  - **Only want to tax returns to capital at entity level**. Want to allow returns to labor to be taxed at recipients marginal tax rate. Treat like other labor income
  - Treasury Report places limit at $100,000 of gross receipts.
- If interest paid by a non-CBIT entity (individual or tax-exempt), it is still taxed.
  - For example, interest paid on credit cards. Still taxable to the business.

CBIT Mechanics

- Problem: What about distributions made from "preferred" profits that are shielded by tax credits or other aspects of tax code?
  - Essentially, no tax is paid since CBIT eliminates the tax on dividends and capital gains of shareholders.
  - Could use an EDA system to ensure it is taxed once
  - Also could use a compensatory tax to ensure it is taxed once.
    - This approach was recommended by the 1992 Treasury study.
- Again, want to be sure that all income is taxed at least once at some level.

CBIT versus Current Law



Note: The illustrations do not take into account (i) tax preferences or taxes imposed by other countries or (ii) the 15% dividend rate for qualifying dividends under current law.

CBIT Advantages

- Treats income independently of organization
- Treats debt and equity financed investment the same
- Integrates the income taxes, no double taxation
- Individual and business income is not co-mingled; business decisions are based solely on the business prospects of the firm, personal circumstances of the owner do not matter
- Reduce individual compliance burdens.
    - Less contact with taxing authority.

CBIT Disadvantages

- Still a tax distinction between CBIT and non-CBIT entities (tax-exempts).
- Treaty problems, treatment of interest is different from the rest of the world, possible disadvantage for US firms.
- Financial institutions may be in a tax loss position all the time (do not report interest income from CBIT entities).
    - Disallows interest deduction, even though it is a legitimate business expense. Extreme approach?
    - Banks might bear more or less incidence, even though non-taxable.
    - Inefficient: deductions that cannot ever be used.

CBIT Miscellaneous

- CBIT could allow for depreciation or full expensing of investment.
- **Full expensing transforms CBIT into a consumption tax.**
  - If we moved to CBIT with expensing, and did not allow for a deduction for wages paid, we would essentially have what is known as a "subtraction method VAT".
  - What appears to be an income tax is really a consumption tax.

Income Tax Reform: Option 2, The Graetz Plan

- From *Towards Fundamental Tax Reform*
- An attempt to link:
  1. simplification
  2. maintain progressive taxation
  3. encourage economic growth
  4. maintain revenue neutrality
  5. maintain same distribution of tax burden.
- This is hybrid tax (mix of consumption and income taxes).
- Keep current system, reduce rates and replace with a national sales tax.
- Note: Some of the parameters presented have been updated based on a presentation by Graetz at National Tax Association meetings in Nov 2011.

Income Tax Reform: The Graetz Plan

- Step 1: Repeal the "regular" individual income tax but leave the Alternative Minimum Tax structure with higher exemption
    - \$100,000 for married and \$50,000 for singles, index to inflation (currently \$70,950 for married, \$46,700 single)
    - Tax rate $= 15\%$ for income \$100,000-\$250,000;
    - Tax rate $= 25\%$ for income $>$ \$250,000
    - This creates a broad based income tax only on the wealthy
    - Dramatically reduces the number of tax filers, more than 100 million would no longer need to file
    - Eliminate all of the special provisions except home mortgage interest deduction, charitable contributions and large medical expenses
    - Health benefits still non-taxable to individual, but not deductible to business.

Graetz Plan

- Step 2: Lower corporate income tax rate to 15%
  - Income of small corporations taxed on flow through basis so that they qualify for the $100,000 income tax exemption.
  - For small owners, does not matter if they pay themselves a wage or retain as a profit and pay themselves a dividend.
  - Eliminates double layer of tax for small corporations, as if they are a flow through entity
  - Note that in all most reform plans, top individual rate = top corporate rate
  - More closely align book and tax accounting.
    - This keeps tension in the system.
    - Want to report high book income, but low tax income.

Graetz Plan

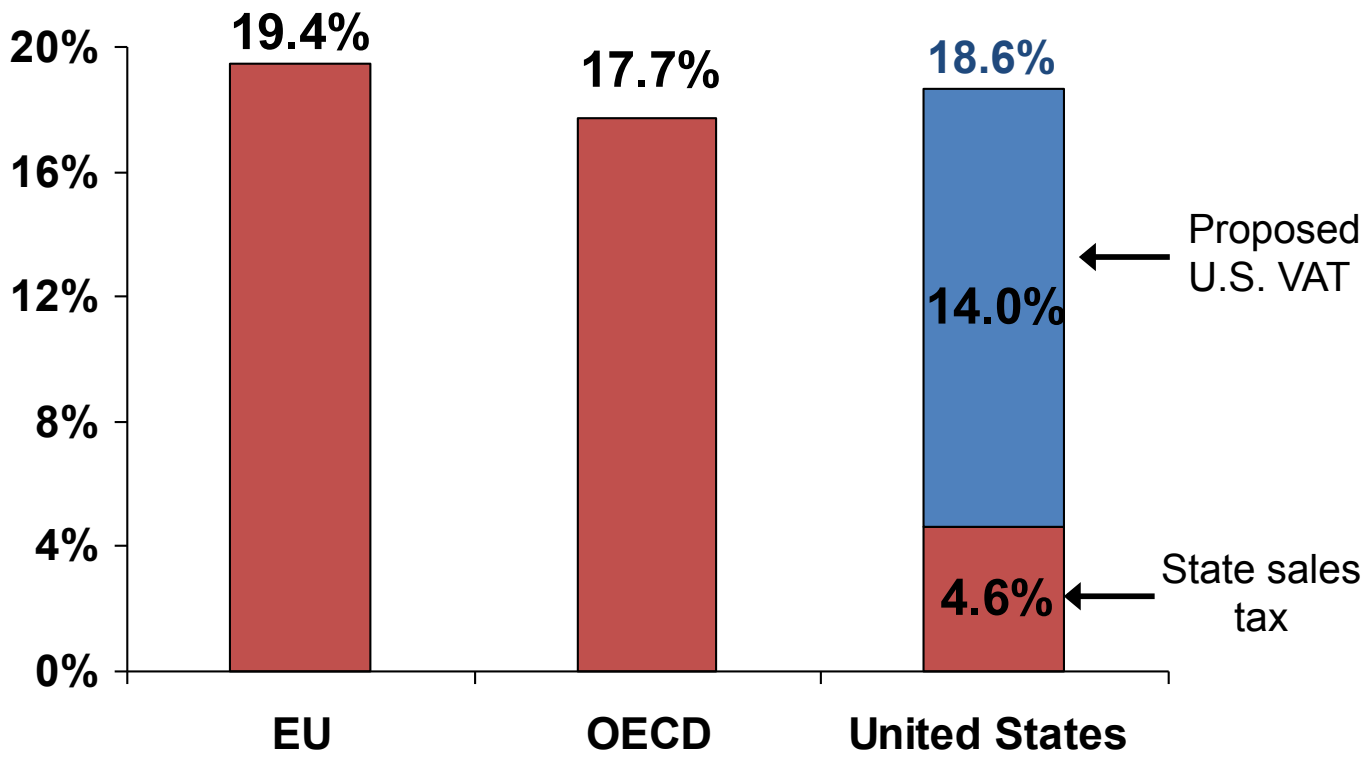
- Step 3: Make up for lost revenue with a European-style VAT (credit invoice method).
  - Very broad base. Covers nearly all goods and services
  - This consumption tax would equal 14.4%
  - Businesses with $<$ \$100,000 of receipts exempt from filing, eliminates nearly 80% of businesses.
  - Compliance costs for VATs roughly one third to one fourth that of current corporate income tax
  - Graetz notes that only six countries have ever adopted a retail sales tax $\geq$ 10%, and none currently exists

Graetz Plan: Pros

- Dramatically fewer filers (at least 100 million)
- Easier for IRS to administer
- Lower effective tax rates for most
- More like trading partners' tax systems
- All filers under $100,000 limit owe no tax on savings and investment income.
- Avoids many sticky "transition issues" since we are not replacing an existing system.
- With no income tax for most voters, there is less reason for tax expenditures, less pressure from lobby groups
  - Most individuals pay tax at cash register
  - Political payoff from income tax incentives declines
  - If we cannot eliminate them, make them much less important

CONSUMPTION TAXES AROUND THE WORLD:

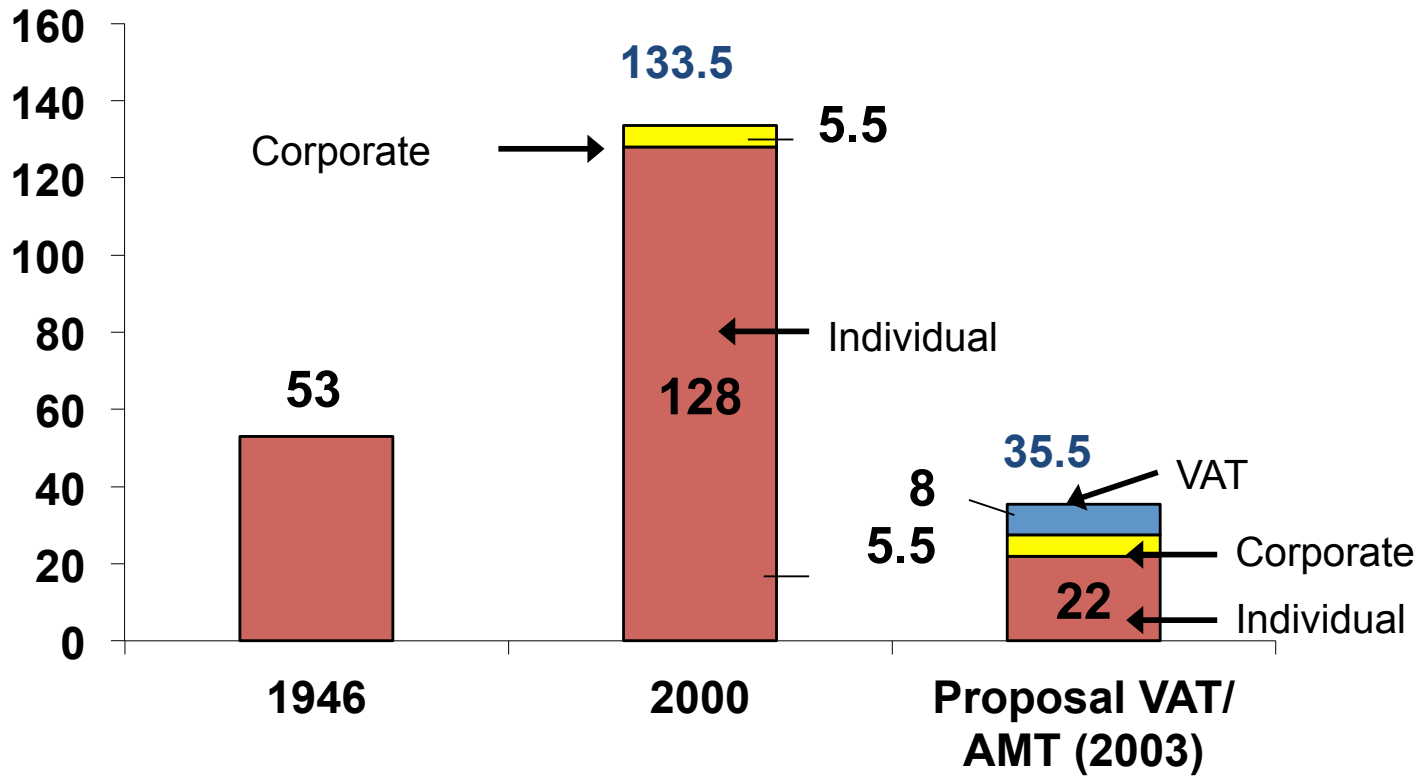
VAT AND SALES TAX RATES – 2000 (UNWEIGHTED AVERAGES)



Source: Consumption Tax Trends 2001 (OECD) Table 3.5; U.S. computations based on data from http://salestaxinstitute.com (visited 1/10/2002).

SIMPLIFYING TAX COMPLIANCE

MILLIONS OF TAX RETURNS UNDER CURRENT LAW AND PROPOSAL



GAO has estimated that an exemption for small businesses with gross receipts of $100,000 or less would reduce the required number of VAT returns from 24 million to 5.4 million. We assume here that such a small business exemption would be included in a VAT and show 8 million VAT returns filed, since some small businesses will opt into the VAT to obtain refunds and to account for growth since the GAO report was published. VAT Administrative Costs, GAO/GGD-93-78 (1993) at 62. Sources: 1946: Statistical Abstract of the United States (1956); 2000: Internal Revenue Service Databook (2000); Proposal 2003: Treasury estimates (individual), author estimate (corporate), GAO estimate (VAT). Note that partnership returns are treated as information returns and therefore not included in the graph above.

Consumption Taxation Theory

Why Consumption Taxation? Four Reasons.

1. Eliminate the penalty on **savings and investment** (the double tax)
   - Individuals: income taxed when earned. Interest from savings taxed again, even though income has not "changed hands" via a purchase (it did not change its character).
     - Penalizes individuals who defer consumption.
     - Violates horizontal equity principles.
   - Corporations: corporations pay tax, and then the shareholders pay tax again on capital gains or dividends.
   - Effect: Lower capital stock, all else equal. Reduces labor productivity, wages, and GDP.
2. General intuitive appeal.
3. Lots of potential simplification.
4. Might be a superior measure of ability to pay.

Eliminate Penalty on Savings and Investment

- Two ways to view this.

1. Income tax reduces the after-tax return to saving.
2. Individual who defers consumption sacrifices a greater proportion of total income to taxes, and so **consumes a lower proportion of income**.
    - Future consumption is made more costly relative to current consumption.
    - Income tax creates a wedge between what market pays you for delaying consumption and what you actually receive.

Reducing the After-Tax Return

Tax	20%					
Annual Return	5%					
Inflation	0%					
						Total
	1	2	3	4	5	Tax Paid
Savings, start of year	10,000	10,400	10,816	11,249	11,699	
Pre-Tax Interest	500	520	541	562	585	
Tax on Interest	100	104	108	112	117	542
Interest Rolled Forward	400	416	433	450	468	
If no tax						
Savings	10,000	10,500	11,025	11,576	12,155	
Interest	500	525	551	579	608	431
Reduction in Interest	-20%	-21%	-22%	-22%	-23%	

Tax on Savings Reduces Relative Consumption

Tax	20%					
Return	100%	many years in future				
Inflation	0%					
			Income Tax		National Retail	
	No Tax		at 20%		Sales Tax (25%)	
	Buyer	Lender	Buyer	Lender	Buyer	Lender
Wages	100	100	100	100	100	100
Income or Cons Tax	0	0	20	20	20	0
Residual	100	100	80	80	80	100
Consume Now	100	0	80	0	80	0
Lends	0	100	0	80	0	100
Interest	0	100	0	80	0	100
Future Income	0	200	0	160	0	200
Tax on Interest	0	0	0	16	0	0
Consumption Tax	0	0	0	0	0	40
Future Consumption	0	200	0	144	0	160
Percentage Reduction in Consumption			-20%	-28%	-20%	-20%

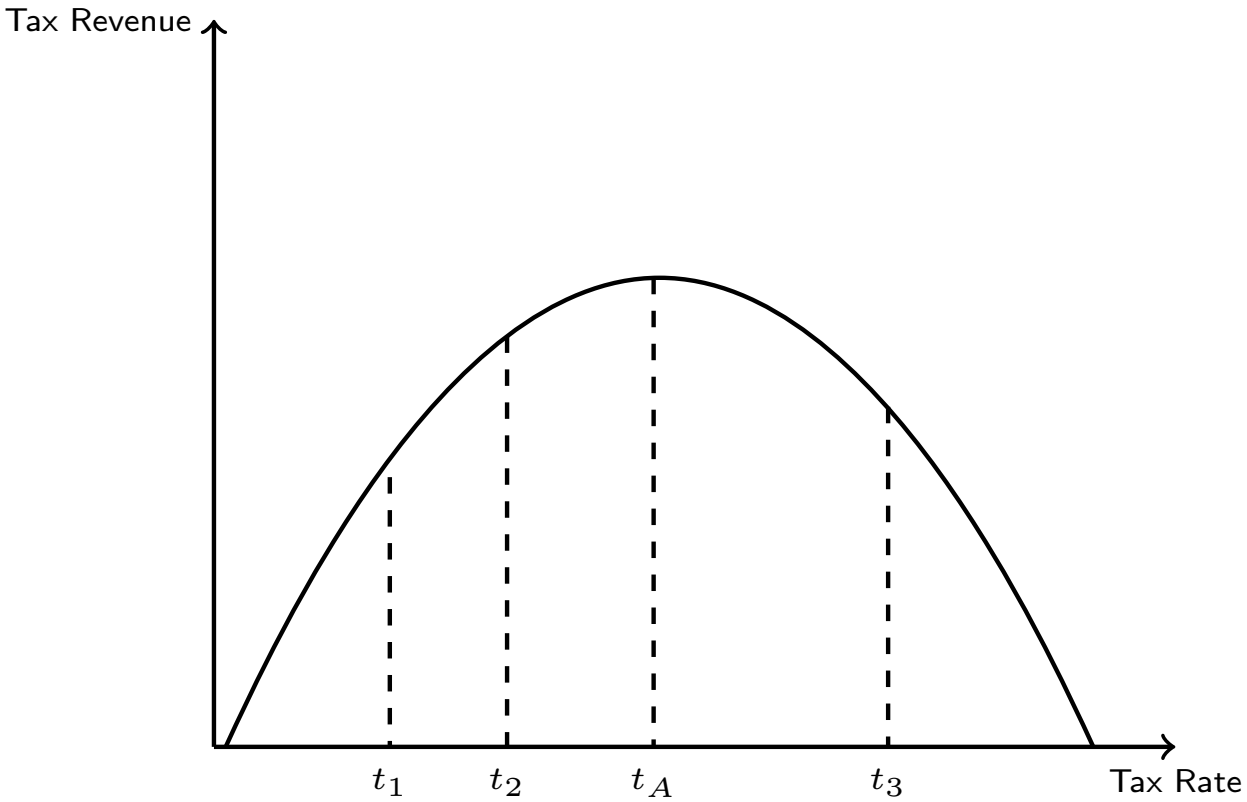
The Intuitive Appeal of Consumption Taxation Federalist Paper 21 (Hamilton)

"It is a signal advantage of taxes on articles of consumption that they contain in their own nature a security against excess. They **prescribe their own limit**, which cannot be exceeded without defeating the end proposed - that is, an extension of the revenue... If duties are too high, they lessen the consumption; the collection is eluded; and the product to the treasury is not so great as when they are confined within proper and moderate bounds. This forms a complete barrier against any material oppression of the citizens by taxes of this class, and is itself a natural limitation of the power of imposing them."

The Intuitive Appeal of Consumption Taxation

- Consumption taxes "prescribe own limit"
  - Hamilton referring to excise taxes or customs duties.
  - Easy to see that if the tax rate is too high, people will consume less, thereby harming tax revenues.
  - More transparent "Laffer Curve" compared to income tax
  - Might be easier to conceptualize a revenue maximizing tax rate.
    - Income taxes have offsetting income and substitution effects, and many times we are unsure which dominates.
    - With consumption taxes, these two effects work in the same direction; when taxes increase, both say buy less of the product.

Tax Rates vs Tax Revenue Laffer Curve



The Intuitive Appeal of Consumption Taxation

- The purpose(s) of the tax levy appears more transparent since it is levied on a "benefits received" principle, not ability to pay.
  - Based on what you consume, not what you "contribute" (i.e., the value of the marginal product of your labor).
  - Seem less like a system of confiscation compared to income tax since you get an immediate and tangible benefit upon remittance of a sales or excise tax.
  - Possibly discourage consumption of certain items (liquor, tobacco).
- Generally more difficult to redistribute income using consumption taxes (good or bad?).

Appeal of Consumption Taxes: Simplification

- Income accounting is much more complex than "cash flow" accounting used by consumption taxes:
  - Cash Flow accounting tracks actual flows of income and expenses.
  - Does not attempt to align them over time, does not use "accruals".
  - **Depreciation** is not necessary, use "expensing".
  - Any type of "**capitalization**" is not necessary.
  - Tracking of **inventories** is not necessary.
  - **Accounts Payable and Receivable** are not necessary.
  - **Capital Gains** are not computed since they are excluded from consumption tax
    - No need to track "basis".

Consumption a Superior Measure of Ability to Pay?

- If we ignore, inheritances, gifts and bequests, then lifetime income = lifetime consumption.
- Should the pattern of how that income is realized affect your overall tax liability?
    - Economists: lifetime income is better measure for horizontal equity comparisons.
- Annual consumption is smoother than annual income.
- Hence, annual consumption might be a better proxy of your average "ability to pay" during your lifetime.
- Income taxation penalizes individuals with same lifetime income, but who prefer to shift more of lifetime consumption to later years via saving. Those who prefer to smooth consumption.
- Which approach is more horizontally equitable?
    - If lifetime income is preferred to annual income, then taxing based on consumption is better for horizontal equity.

Consumption Taxes: Distributional Issues

- Distribution tables are very important in policy work. They are typically based on "annual" snapshots.
- Due to income mobility, using snapshots of income distributions to determine "winners/losers" from switch to consumption tax can be very misleading.
- Tax data from a panel of tax returns 1987-1996 (Cronin, 2004) reveal that more than half of taxpayers were in a different tax rate bracket at the end of the ten-year period.
- Significant upward and downward mobility:
  - Two-thirds of taxpayers in the lowest tax rate bracket in 1987 had moved to a higher bracket after ten years.
  - Four times as many taxpayers were subject to one of the top two tax rates in at least one of the ten years than was indicated by an initial snapshot of a single year.

Consumption Taxation: How?

Regardless of appearance, all consumption taxes are similar in their economic effects: Consumption = Income - Savings

- Direct Method
  - looks like an income tax
  - tax rates can be "personalized" via personal exemptions or multiple rates
  - Individuals bear some/most of the statutory tax burden
    1. Consumed Income Tax (CIT), Savings Exempt Income Tax (SEIT)
    2. Flat Tax
    3. X Tax (modified Flat Tax)
- Indirect Method
  - cannot be "personalized" because it is levied on firms, they bear the statutory tax burden
    1. Retail Sales Tax (Fair Tax)
    2. Value-Added Tax (credit invoice, subtraction, addition)

Consumption Taxation: When?

- For individuals, there are two equivalent ways to tax consumption and exempt savings:
  - **"Post-payment" method**: Exempt savings now but tax savings and interest when withdrawn and (assumed) consumed.
    - Like a regular IRA.
    - Consumption tax treatment.
    - Allows inside build up tax free
  - **"Pre-payment" method**: Pay tax on all income now, but all return to savings (interest, dividends, or capital gains) are exempt from tax.
    - Like a Roth IRA.
    - No tax when withdrawn from account and consumed.
- *Excluding all future "returns to saving" from tax is equivalent to providing an immediate exemption for savings and taxing it upon withdrawal.*

Exempting Savings Under Consumption Taxation: Post-payment vs Pre-payment Methods

Interest Rate	5%	return to savings		
Savings Rate	10%	share of income saved		
	Reg IRA	Roth IRA		Identical results
Period 1	Postpay	Prepay	Diff	Decision of when to consume
Wages	20,000	20,000		is unaffected
Pre-Tax Savings	2,000	0		
Taxable	18,000	20,000		Requires that:
Tax (20%)	3,600	4,000	-400	1. tax rates are constant over time
Disposable Income	14,400	16,000		2. perfect capital markets
Post-Tax Savings	0	1,600		3. taxpayers exhaust wealth
Consumption	14,400	14,400	0	during lifetime or are taxed
				on bequests to heirs
Period 2 (makes withdrawal)				
Savings	2,000	1,600	400	
Interest	100	80	20	Savings are higher under post-pay.
Taxable	2,100	0		
Tax (20%)	420	0	420	
Consumption	1,680	1,680	0	Tax is higher under post-pay.
				But note that the govt must wait longer
TOTAL Consumption	16,080	16,080		for revenues.
TOTAL Tax	4,020	4,000	20	In NPV terms, tax is identical

Exempting Savings Under Consumption Taxation

- The current exemption of savings from income tax is the same as the exclusion of any future "returns to saving" (interest, capital gains, dividends) from tax.
- Both transform income tax to consumption tax.
  - There is no penalty from saving.
- Tax is levied when these forms of income are withdrawn from savings and used to finance consumption.

Exempting Savings Under Consumption Taxation: Post-payment vs Pre-payment Methods

- The "**post-payment**" method is similar to the expensing of investment for businesses (required for consumption tax, savings and investment must be exempt from tax):
  - The firm gets an immediate, full deduction based on price.
  - Alternatively, the gov't could give no deduction but disregard all future income from the investment (both principal and return, pre-payment method).
  - In theory, the gov't and firm are indifferent. Same NPV results.
- **Recall**: Expensing causes the **marginal effective tax rate on investment to go to zero** because the tax value of the immediate deduction is exactly equal to the NPV of all future tax liability arising from the asset.
- Expensing a big step in transforming corporate income tax to a consumption or "cash flow" tax.

Exempting the Returns to Investment Under Consumption Taxation

Assumed Discount Rate				4.0%				
			Year					
	Outlay		1	2	3	4	5	NPV
IRR = 4%	-4,000		900	900	900	900	900	
discount rate	-4,000		865	832	800	769	740	7

This is the "marginal" investment for the firm, so that it just "breaks even" and the Net Present Value of cash flows are roughly $0. The firm is indifferent to the project and how it is taxed (prepay or postpay).

If the NPV is equal to zero, the govt is indifferent to (1) providing an immediate deduction and taxing the proceeds or (2) giving no deduction but disregarding all future income from the investment.

	Outlay		1	2	3	4	5	NPV
Option 1	-1,400		315	315	315	315	315	
discounted	-1,400		303	291	280	269	259	2
Option 2	0		0	0	0	0	0	0

Note: We assume tax rates do not change over time.

Exempting Savings Under Consumption Taxation

- In our examples, what rate should firms use to discount future cash flows? (Same question applies to individuals)
- Recall: We evaluate these scenarios from the perspective of the "marginal" investment.
- The firm's discount rate should represent the opportunity cost of those funds.
  - What was the alternative to the marginal investment?
  - Probably a normal, safe rate such as that approximated by a 10-year Treasury note.
  - That rate is "riskless" and merely captures the "return to waiting" or the return from delaying consumption (includes any compensation for inflation).

Exempting Savings Under Consumption Taxation

- For this reason, consumption taxes exempt the "return to waiting," but no other types of returns that might be included in the "return to capital"
  - Those types of returns are not reflected in the ordinary, riskless return used to discount future cash flows (business) or future consumption (individuals)
- The "return to capital" can be divided into four parts (see Hubbard, Chapter 4, *Towards Fundamental Tax Reform*)
  1. The "risk-free" interest rate (the return to waiting, includes any compensation for inflation)
  2. A risk premium (return to risk taking)
  3. Return for market power or entrepreneurial skill / ideas
  4. Random component that represents good or bad luck
- Both income and consumption systems tax items 2-4

KEY: Income tax includes item 1, consumption tax does not

Excluding the "Normal" Return (Business), Again

- If markets work freely, the price of any asset should reflect the net present value of its expected future income.
- That price should reflect a "normal" or riskless return.
  - That is the opportunity cost of the funds.
  - What you could have done.
- If it did not, the price would adjust to reflect that fact.
  - For example, if the expected return was 20% and this was known, the price would be bid up until the expected return from the asset was something normal or riskless.
  - Same with bonds. Price is bid up for bonds offering high interest rates. Yields then fall until they are "normal."

Excluding the "Normal" Return (Business)

- Recall, with expensing (consumption tax treatment), the tax value of the immediate, full tax deduction equals the net present value of future taxes paid on income from investment.
- Now, assume the investment actually yields a very high return.
  - But the firm only claims a deduction equal to the price paid for the asset, which assumed a "normal" return.
  - Here, the net present value of future taxes $>$ tax value of immediate deduction.
  - Tax will be paid on those "above normal" returns that were not reflected in the price.
- The consumption tax only exempts the "normal" return to waiting. All other returns are taxed.

Exempting the Normal Return

- Assume a firm or individual that has unique skills.
- Able to apply skills in such a way as to yield an "above" normal return to an investment.
- It is still the case that the cost of the investment reflects a "normal" return and the deduction is based upon the price.
- Any additional returns generated due to entrepreneurial skill will be taxed. So will "good luck".
- Because consumption taxes DO tax "super normal" returns, they are more progressive than commonly thought.
- **Note**: If the individual or firm knows this, they will not be indifferent to the postpay vs. prepay methods.
    - They now prefer the prepay method.

Exclusion of "Returns to Capital" for Individuals

- But, how does this work for the individual who makes a 20% return on stocks? Dont they escape taxation on those "above normal" returns since they are not taxed under a consumption tax?
- Would the very rich who derive all of their income from returns to capital such as Bill Gates or Warren Buffet escape taxation?
- They will also be effectively taxed on nearly all of their earnings (above normal returns).
    - It will appear to "escape" taxation but these above normal returns will be taxed at the business level, and they will be taxed only once, not twice.
    - But, this does make the system less progressive.

Excluding the Return to Capital Under Consumption Taxation

- Note that in an **uncertain** world excluding the return to capital from tax has differing outcomes depending on how we tax consumption.
- A post-payment or cash flow tax will place a higher nominal burden on "lucky" capital owners, more tax is collected
- Post-payment or cash flow method might seem "fairer" than exempting the return to capital but the incentive effects are identical.
    - Individuals should be indifferent.
    - Gov't shares in upside or downside under post-payment method.

	Pre-pay	Post-pay
Unlucky Investor	Roth IRA	Reg IRA
Wages	100	100
Tax Now (20%)	20	0
Residual to Invest	80	100
Return	-10%	-10%
Realized	72	90
Tax Later	0	18
Consume Later	72	72
Lucky Investor		
Wages	100	100
Tax Now (20%)	20	0
Residual to Invest	80	100
Return	300%	300%
Realized	320	400
Tax Later	0	80
Consume Later	320	320

Consumption Taxes: What is the Downside?

- Equity
  - In practice, hard to match progressivity of income tax system.
    - Would need to integrate estate and trust taxes
  - Income tax need not differentiate between capital and labor income, can be treated the same.
  - Transactions-based consumption taxes ineffective way of differentiating by ability. Captured by income taxes.
  - Transition unfair to elderly who paid tax under income tax system.
- Efficiency
  - Intertemporal distortion is not too severe, only the riskless rate. (some argue)
  - May wind up subsidizing saving and investment (e.g., debt finance and interest deductions combined with expensing can produce negative METRs).
- Simplicity
  - Transition to new system would not be simple.
  - How to treat existing assets such as housing and machinery?

Review of Crucial Results

1. Expensing (a full immediate deduction for investment) eliminates the corporate level tax for the marginal investment.
    - The immediate tax value of deduction = the NPV of all future taxes.
    - Only eliminates the "normal" or riskless return. Supra-normal returns or economic rents are still taxed. Inframarginal investments still taxed.
2. Debt financing eliminates the corporate level tax for the marginal investment. Negative METR if expensing + debt financing.
    - We assume that in equilibrium and at the margin, the real cost to borrow = real return on investment.
    - Note: in reality, several arbitrage conditions must be met. Complicated.
3. The post-payment and "pre-payment" methods of consumption taxation are generally equivalent.
    - Assumes rates to do not change over time. Other assumptions.
    - Gov't collects more under postpayment if successful. Does not share in loss.
4. Various consumption tax bases are equal.
    - Income - Savings = Final Sales - Investment = Sum of All Value Added

Only the Normal Return is Excluded Under Consumption Taxation

- See Hubbard, Chapter 5, *Towards Fundamental Tax Reform*
- Four types of "returns": normal, risk, skill, luck.
  - Again, in a free (frictionless) market, all assets should reflect:
  - The net present value of all future cash flows (net of taxes)
  - A normal (riskless) return that could always be had. Such as a 10-year gov't bond.
  - This normal return ONLY compensates for delaying consumption, the "return to waiting".
  - If the return were higher and this were known, the price of the investment would be bid up. For example, the price of an outstanding bond with a very high coupon or interest rate gets bid up so that the yield is normal. Same idea with physical assets such as machines.
  - Thought to be quiet small: perhaps 2-4%. So, the benefits of a switch from income to consumption taxation take very long to fully materialize.
  - Must also deal with transition issues. Non-trivial!!

The Normal Return

- In all of our examples, we have assumed that "r" or the real required return is the same at the margin.
  - The return on the marginal investment.
  - The cost to borrow.
  - The discount rate used by the firm.
- This is a strong assumption.
- It results from arbitrage conditions.
- See Fullerton (1987) and Fullerton and Henderson (1984)
- Again, it is the return to waiting. The riskless return.
- Lenders (savers) equalize the after-tax return on investments in all sectors (corporate and non-corporate).
- Borrowers (firms) equalize after-tax cost of borrowings using debt or equity financing.

Exempting the Returns to Investment Under Consumption Taxation

Assumed Discount Rate				4.0%				
			Year					
	Outlay		1	2	3	4	5	NPV
IRR = 4%	-4,000		900	900	900	900	900	
discount by 4%	-4,000		865	832	800	769	740	7

This is the "marginal" investment for the firm, so that it just "breaks even" and the Net Present Value of cash flows are roughly $0. The firm is indifferent to the project and how it is taxed (prepay or postpay).

If the NPV is equal to zero, the govt is indifferent to (1) providing an immediate deduction and taxing the proceeds or (2) giving no deduction but disregarding all future income from the investment.

	Outlay		1	2	3	4	5	NPV
Option 1	-1,400		315	315	315	315	315	
discounted	-1,400		303	291	280	269	259	2
Option 2	0		0	0	0	0	0	0

Note: We assume tax rates do not change over time.

Consumption Tax Prototypes

Consumption Tax Prototypes

We'll look at 4:

1. Consumed Income Tax (hybrid)
2. Value Added Taxes
3. Flat Tax and X Tax
4. National Retail Sales Tax

Recall: these tax systems are equivalent at a high level:

Income less Savings	Consumed Income Tax
Business Sales less Investment	Value-Added Tax, Flat Tax
Sum of Final Sales to Consumers	National Retail Sales Tax