

Market Imperfections From Taxes

(Welch, Chapter 11)

Ivo Welch

Thu Jun 23 14:27:04 2022

1: The Tax Code

- ▶ Taxes are a very sad part of life.
- ▶ They are worse if you have to pay them—rather than just argue about them academically.
- ▶ *You* will be the prime victims, not the bottom 50% or the top 0.001%—or boomer academics like myself.
- ▶ A lot more taxation is already **heading your way**.

2: Teach Tax Details?

- ▶ Uncle Sam has a very intricate set of tax rules, and they become more complex every year.
 - ▶ Any details I would teach would be outdated within 5 years.
 - ▶ Yet, the principles have stayed the same for decades and are similar in all OECD countries.
 - ▶ Thus, it makes sense to explain the basics.

3: Tax Principles: After-Tax Income

Earned Income

–Deductions

= Taxable Income

–Tax Payments (Rate Tables)

= After-Tax Income

4: Progressivity

- ▶ Tax rates are mostly progressive, so more *income* (not more *wealth*) incurs *proportionally* more taxes.
 - ▶ This is not perfectly correct
 - ▶ even by statute and even for (W-2 form) labor income only.
 - ▶ Biggest discrepancy: capital income vs labor income
 - ▶ a high-capital-income investor often pays less proportionally than a lower-ordinary-income laborer.
 - ▶ and many loopholes at the very high end.

5: Taxable Income Example

\$100k, all in Ordinary Income (W-2)
– \$20k of Mortgage Interest Deduction
= \$80k of Taxable Ordinary Income

6: 2021 Income Tax Brackets, in Thousand-\$

Rate	Single	Married
10%	-\$10	-\$20
12%	-\$41	-\$81
22%	-\$86	-\$173
24%	-\$165	-\$330
32%	-\$209	-\$419
35%	-\$524	-\$628
37%	\$524-	-\$628

Calculated Federal Income Tax:

$$10\% \cdot \$10k + 12\% \cdot \$31k + 22\% \cdot \$39k = \$13.3k$$

Marginal Tax Rate: 22%.

Average Tax Rate: $\$13.3/\$80 \approx 17\%$.

Post-Deduction Post-tax income = \$67k.

7: More Tax Notes

- ▶ Married = 2×single in lower tax brackets,
 - ▶ but modestly off above 32%/35%, and
 - ▶ some disallowed deductions when not married.
- ▶ Ignored SocSec and Medicare.
- ▶ Ignored state income tax.
- ▶ Ignored Obamacare tax (on capital gains and interest).

- ▶ There are many, many wiggles.
 - ▶ If you earn <\$25k, you usually get extra **earned income tax credits** and thus get tax money rather than pay tax money.
 - ▶ In fact, between 40% and 50% of all tax filers do not owe *any* income tax.
 - ▶ (PS: They are rarely to be envied!)
- ▶ Phased out deductions, etc, make it less apparent that income tax is steeper than it appears from rates.
 - ▶ would it be more honest to just have rates?
- ▶ Employment industry for tax advisors
 - ▶ not the rate tables, but the deduction mess.

8: Average vs Marginal Tax Rates

- ▶ For someone single earning \$100 w/o deductions, what is the marginal and average tax rate?
- ▶ Do economists / you care about the average or the marginal tax rate?

9: Mortgage Interest Deduction

- ▶ What is the value of an additional \$1 in mortgage interest deduction?
 - ▶ for example, think car loan vs mortgage loan.

10: Tax Income Categories

- ▶ Would you rather get each dollar of income:
 - ▶ as Ordinary Income,
 - ▶ as Dividends,
 - ▶ as Interest, or
 - ▶ as Capital Gains?

11: Post-Tax Interest

- ▶ Say you are in the 35% marginal tax bracket.
- ▶ If you/I earn \$100 as interest rate on \$100 of bond investment, then how much will you have left in post-tax interest?
 - ▶ Note: You may also owe capital gains if you sell a bond in the interim and this bond had experienced a capgain or caploss (e.g., due to interest-rate declines or increases, respectively)!

12: Tax-Exempt Interest Calculation

- ▶ A quirk of the U.S. constitution has exempted municipal and state bond payments from Federal income taxes, and vice-versa.
- ▶ You do not owe Federal income tax on interest income you receive from “munis.”
 - ▶ Who benefits more from this? You or the munis?
 - ▶ This is an essential insight in economics!
- ▶ [Bloomberg \(Muni\) Interest Rates Today](#)

13: Tax-Exempt Interest Rate Today

- ▶ If you/I can buy (muni) bonds whose interest is tax-exempt, then what interest rate would those bonds have to pay to leave you/me indifferent?
 - ▶ More? Less?

14: Marginal Investor A

- ▶ Say, tax-exempt municipal bonds (“muni-bonds” or “munis”) pay 5% per year.
- ▶ Say, similarly risky taxables pay 10% per year.
- ▶ Who is the “marginal investor”?
 - ▶ what is her marginal income tax rate?

15: Marginal Investor B

- ▶ Say, munis pay 5% per year.
- ▶ Say, taxables pay 5% per year.
- ▶ Who is the “marginal investor”?

16: Marginal Investor C

- ▶ Say, munis pay 5% per year.
- ▶ Say, taxables pay 7.5% per year.
- ▶ Who is the “marginal investor”?

17: You vs. The Marginal Investor

- ▶ Which bond is better for you
 - ▶ if your tax rate is *higher* than that of the marginal investor?
 - ▶ if it is *lower*?

18: December 31, 2021 (in book)

For AA-rated 5-year-or-so bonds, quotes above UST:

- ▶ Tax-Exempt Munis quoted about 1.36%.
- ▶ Almost-Equivalent Corporates quoted about 2.20%.
- ▶ Ergo, the implied Federal income tax rate was 38%.

19: Today's Marginal Income Tax Rate (MITR)

- ▶ What is the current tax-exempt interest rate?
- ▶ What is today's marginal investor's income tax rate?

20: Usefulness of MITR

- ▶ The MITR makes it easy to decide where to put your money—taxables or munis.
- ▶ It reflects the market's relative pricing of bonds.
 - ▶ depends not only on taxable investors, but also on abundance of tax-exempt investors (401-Ks, endowments, etc.)
- ▶ Historically, MITR was often near the highest personal income tax rate.
 - ▶ Many tax-exempts, few taxable investors \Rightarrow low MITR.
 - ▶ Few tax-exempts, many taxable investors \Rightarrow high MITR.

21: Corporations and Taxes

- ▶ “Corporate Income Tax”
- ▶ Do corporations ultimately pay income taxes?

- ▶ Corps and individuals are treated roughly similarly *except* that corporations have:
 - ▶ lower tax rates (21%, not 35%),
 - ▶ interest costs and losses have been easier to deduct for corporations, and
 - ▶ foreign earnings of corps are no longer taxed.
 - ▶ ⇒ individuals who can keep money inside corporations may end up better off.

22: Not Strictly Class Related

- ▶ Stupid Tax Tricks
 - ▶ like [Video: Stupid Letterman Pet Tricks](#)

23: Sidenote: How to Screw Yourself

- ▶ Many people love the tax advantages of mortgages, but also have savings in the bank.
- ▶ Does it make sense to have a (home mortgage or student) loan to take advantage of the mortgage income deduction and to keep money in a savings account?

- ▶ **Not usually.**
 - ▶ You are usually better off paying off your loans
 - ▶ Unless you have good reason to need financial flexibility
- ▶ **Do not arbitrage yourself!**
 - ▶ When it comes to credit cards with their high interest rates, the answer is even more obvious.
 - ▶ Pay off all higher interest rates loans ASAP

▶ Example

- ▶ Say your tax rate is τ , so you will be left with $(1 - \tau)$.
- ▶ For simplicity, $\tau = 33\%$.
- ▶ You are buying a house for \$100k and found a \$100k mortgage that has only interest payment of 6% per year.
- ▶ Mortgage interest is tax-deductible.
- ▶ In addition, assume you also have \$100k of cash in the bank, which earns 5.1% per year.
- ▶ So, being tax deductible, the \$6k from-pretax-income interest obligation is the same to you as a from-post-tax interest obligation of \$4k.

▶ Continued

- ▶ Presume you earn \$30k.
- ▶ At a 33% tax rate, you have \$20k left.
 - ▶ You pay \$4k post-tax to leave you with \$16k.
 - ▶ Or, you pay \$6k pre-tax mortgage interest to leave you with \$24k taxable income.
- ▶ At a 33% tax rate, this also leaves you with \$16k.

▶ **Choice 1:**

- ▶ Use the cash to pay off the mortgage.
- ▶ No more interest receipts or payments.

▶ **Choice 2:**

- ▶ Pay \$6k in mortgage interest, equivalent to \$4k in post-tax interest.
- ▶ You have taken advantage of the deductible mortgage.

▶ But, you also received \$5,100 from your bonds and paid 33% tax (\$1,700) on interest.

- ▶ So, you now have net interest income flows of $-\$4k + \$3.4k = -\$600$.

24: More Musings on Taxes

25: Obscenely Many Other Taxes

- ▶ Numerous other taxes:
 - ▶ AMT
 - ▶ state
 - ▶ local
 - ▶ sales
 - ▶ inheritance
 - ▶ Social Security
 - ▶ Medicare
 - ▶ property
 - ▶ etc.

26: Always Recent Tax Changes

- ▶ No one likes taxes
 - ▶ at least among those who have to pay them.
 - ▶ thus, college kids often like the idea of taxes!
- ▶ Because we ultimately need to pay, giving only one type of tax payers a release harms the others.

- ▶ Politicians don't like "our" kind of upper-middle class income earners, say 1-20%.
 - ▶ we are not the 80% voter majority
 - ▶ we are often too busy to be engaged in politics
 - ▶ we are not their donor class
 - ▶ This applies to Reps and Dems alike!

27: Relative Tax Burdens

- ▶ Just under 50% of U.S. taxpayers pay no federal and state income tax.
 - ▶ But they do pay SS & Medicare (plus sales tax).
 - ▶ By necessity, taxes are paid primarily by 50th to 99.9th percentile of income earners and future generations.
- ▶ Top 0.01% don't pay much either
 - ▶ ... assuming they have good tax advice.
- ▶ Don't earn between \$100,000 and \$5,000,000 per year.

28: Is the US a Low Tax Country?

- ▶ The US is a low-tax domicile for super-high-income and super-high-wealth individuals.
 - ▶ Best to avoid W-2 income, and get capgains.
 - ▶ **Carried Interest** donor-class income tax is much better.
 - ▶ Plan to be in the 0.001% donor class, with a family office, and foreign holdings.
 - ▶ Best: Inherited wealth from *before* hi income tax (-1914).
 - ▶ Read NYT **2020 expose** on Donald Trump's inheritance.
 - ▶ what he did was *not* necessarily illegal!
 - ▶ he is *not* alone!!

29: Wealth vs Income Tax: Estate Tax

- ▶ Wealth below \$20 million: exempt.
- ▶ Wealth above \$20 million:
 - ▶ requires planning, effort,
 - ▶ and Chuzbah... **but not much.**

30: Interest and Capital Gains Taxes

- ▶ Foreign owners of U.S. assets pay income taxes, if any, in their own countries.
- ▶ Saudi and Chinese investors earn higher interest rates on US Treasuries and other bonds than US investors.

31: Are Taxes (and is Government) All Bad?

- ▶ If you want to have a military, Medicare, social security, schooling and police/ jails/ justice, then who is going to pay for it?
 - ▶ PS: other expenses by U.S. governmental entities are small.
- ▶ Who wants to live in US?
 - ▶ Not “no government,” but “smarter government”?
 - ▶ Government can take real problems and make them worse.
- ▶ I wish more focus was on how efficiently we spend it.
 - ▶ pathetic poor-income school system and infrastructure.

32: Trump Tax Changes of 2018

- ▶ GOP president, senate, and house.
 - ▶ G, please give us split government!
- ▶ Temporarily modestly reduced personal W-2 rate and changed baseline deductions.
- ▶ Reduced allowable income state-tax deduction on Federal income tax calculation.

- ▶ Increased estate-tax exemption. Hello, Donald.
- ▶ Favored some professions (real-estate). Hello, Donald.
- ▶ Shifted to a territorial system.
 - ▶ Induces US corporations to shift profitable activities to lower foreign tax domiciles.
 - ▶ Hello, Donald.
- ▶ Targeted Tax increases towards blue states and Democratic voter professions.
 - ▶ Hello, Donald.

33: Who Will Pay for the 2018 Tax Cuts?

- ▶ Tax cuts are never free.
- ▶ A lot more taxation will be heading your way:
 - ▶ Either government reduces government services now,
 - ▶ or they incur debt for future tax payers,
 - ▶ (or we have to grow superfast in the future)
- ▶ Every tax change has consequences for everyone. You should know your numbers.

34: Politics of Tax and Spend

- ▶ This is not just Trump/GOP.
- ▶ Democrats love to spend, too.
- ▶ Again, neither of them likes the types of *you*.
 - ▶ You don't donate enough.
 - ▶ You don't vote enough.
 - ▶ You are the widely disliked (intellectual/business) elite