CS207 #10, 5 Dec. 2014

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Hewlett 103

Final Reports are due,
If submitted, please check.

Syllabus:

The order and coverage is flexible

1. Why should software be valued? Cost versus value.
2. Economic Flow. Market value of software companies.
3. Spending. Intellectual capital and property (IP).
4. Income from Sales and Service. Alternate Business models
5. Sales expectations and discounting of future income.
6. Principles of valuation.
7. Software growth.
8. Legal & forensics
9. The role of patents, copyrights, and trade secrets.
10. IP in a service company, protectable IP, fencing of customers'IP , know-how
11. Life and lag of software innovation.
12. How to grow a software company: organic or by acquisitions
13. Open source software; theory and reality. Freemium.
14. Separation of use rights from the property itself. Setting licensing rates.
15. Role of Government
16. Risks when outsourcing and offshoring development.
17. Effects of using taxhavens to house IP. Abolish Corporate taxation?

Catchup

Pierce-Arrow patent

1933:
Headlights
on stilts
[Packard coupe,
Packard Phaeton,
Lincoln convertible]
vs.
Headlights
in fender ℗
[Pierce-Arrow
Silver Arrow]

Exhibit Nov. 2014
in the
Moscone Center by
the Academy of Art,
San Francisco.

Summary

Valuation of SW IP and the people that create IP

- Required for

1. Planning projects
2. Setting product prices
3. Investment decisions
4. Buyout negotiations
5. Risk quantification
6. Licensing & IP Transfer

- Based on

1. Estimating diminishing future income, discounted
2. Comparison with metrics of similar businesses
3. Prior investment outcomes

Some Report topics

Companies

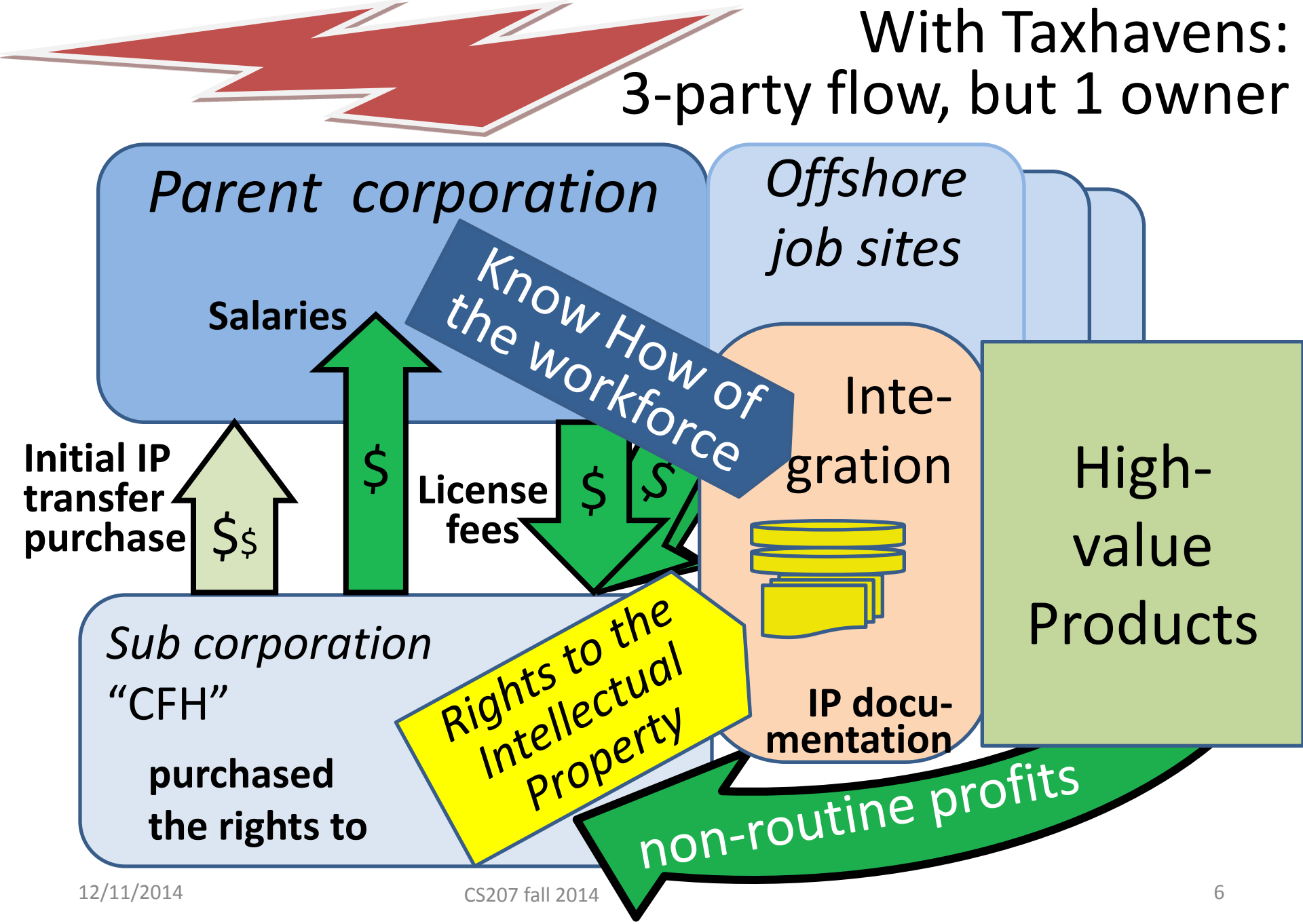
- AirBnB
- Amazon
- Baidu
- Citrix
- Palantir
- WhatsApp

Note: best to use unambiguous dates when dealing with global issues:
5 Dec 2014

Technology

- Open Software
- Acquisitions
- Ads vs R&D
- Buyout
- Proprietary SW
- Revenue recognition
- SAAS
- Same-day delivery
- Sales
- Subscription model

With Taxhavens: 3-party flow, but 1 owner



Future: Outsourcing and IP export

Need Increased understanding and accounting for IP exports
(making them visible)

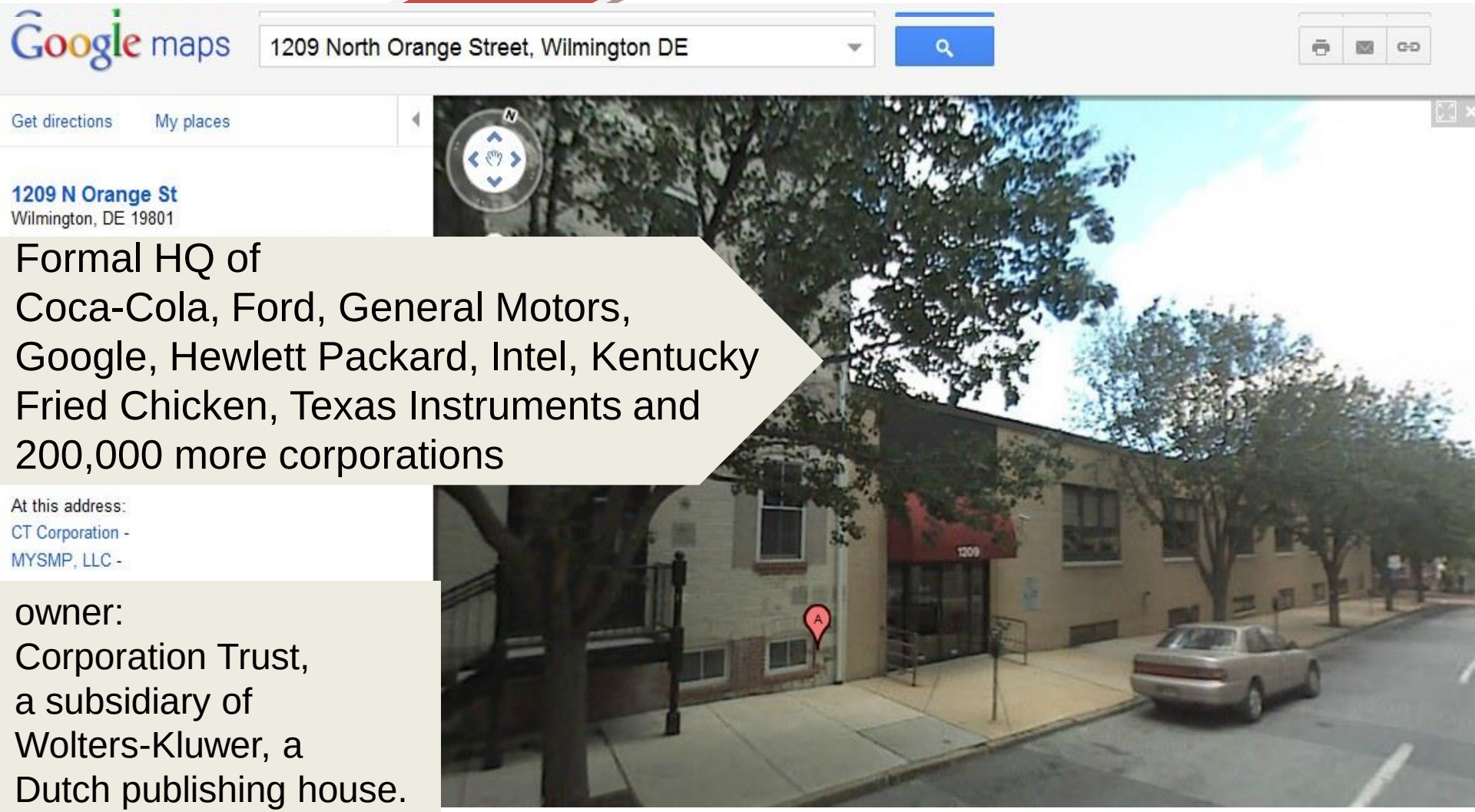
To rationalize political concern by populists & traditional conservatives
versus strong lobbyists pressures and globalists

Correct pricing, licensing and its taxation of IP exports

- will increase corporate profits in the U.S.
- reduce cash in offshore accounts, more for U.S. investment
- provide taxes that could be used to compensate
  - for R&D support provided by the government
  - for educational costs
  - for unfunded retirement benefits of workers whose IP was outsourced
- Is unlikely to stop offshoring substantially

- Amounts would be large in a number of cases
- But ….

Not all taxhavens are offshore: Delaware



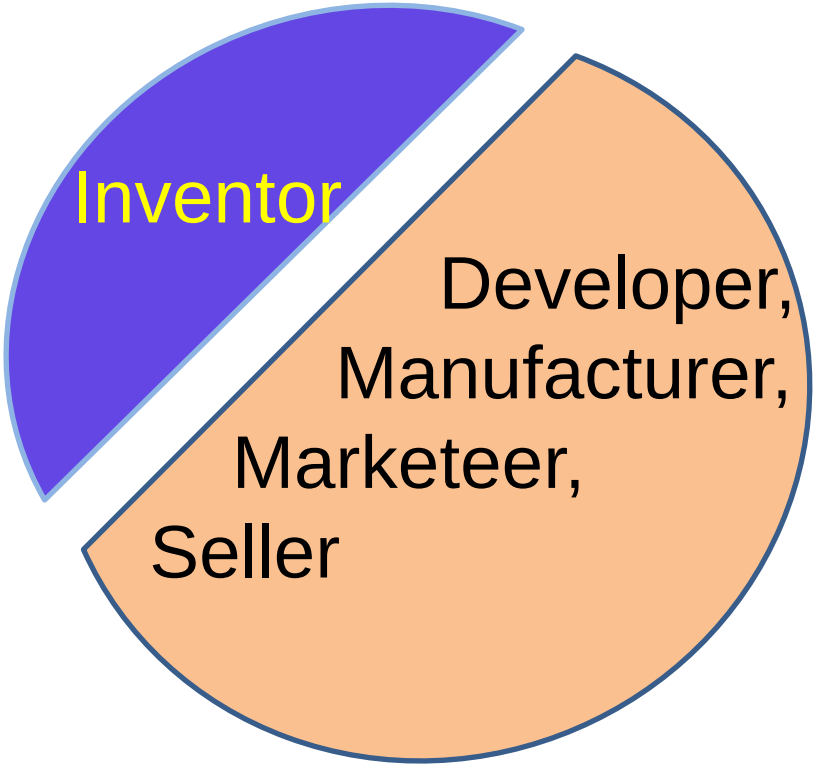
Formal HQ of
Coca-Cola, Ford, General Motors, Google, Hewlett Packard, Intel, Kentucky Fried Chicken, Texas Instruments and 200,000 more corporations

owner:
Corporation Trust,
a subsidiary of
Wolters-Kluwer, a
Dutch publishing house.

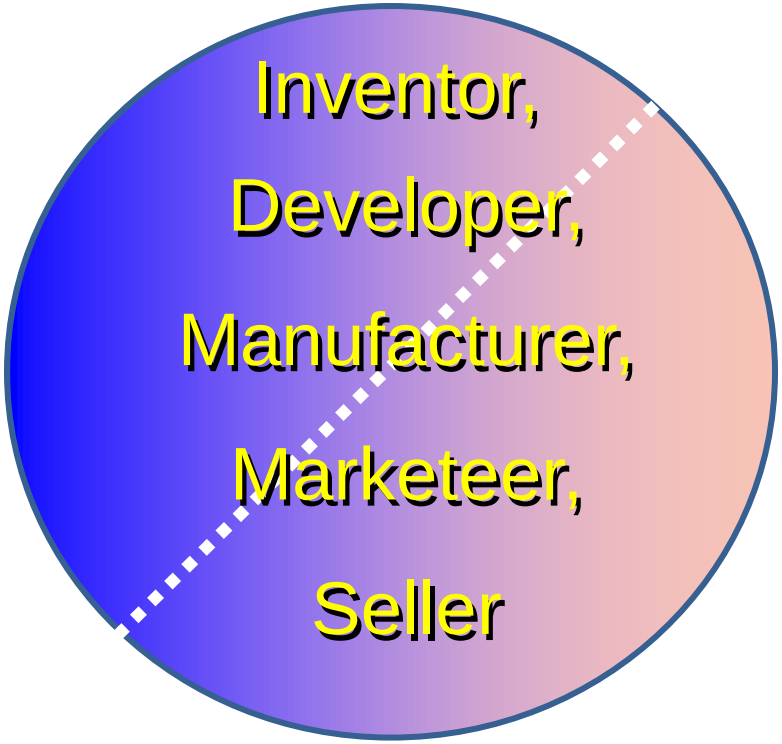
[Shaxton:11]

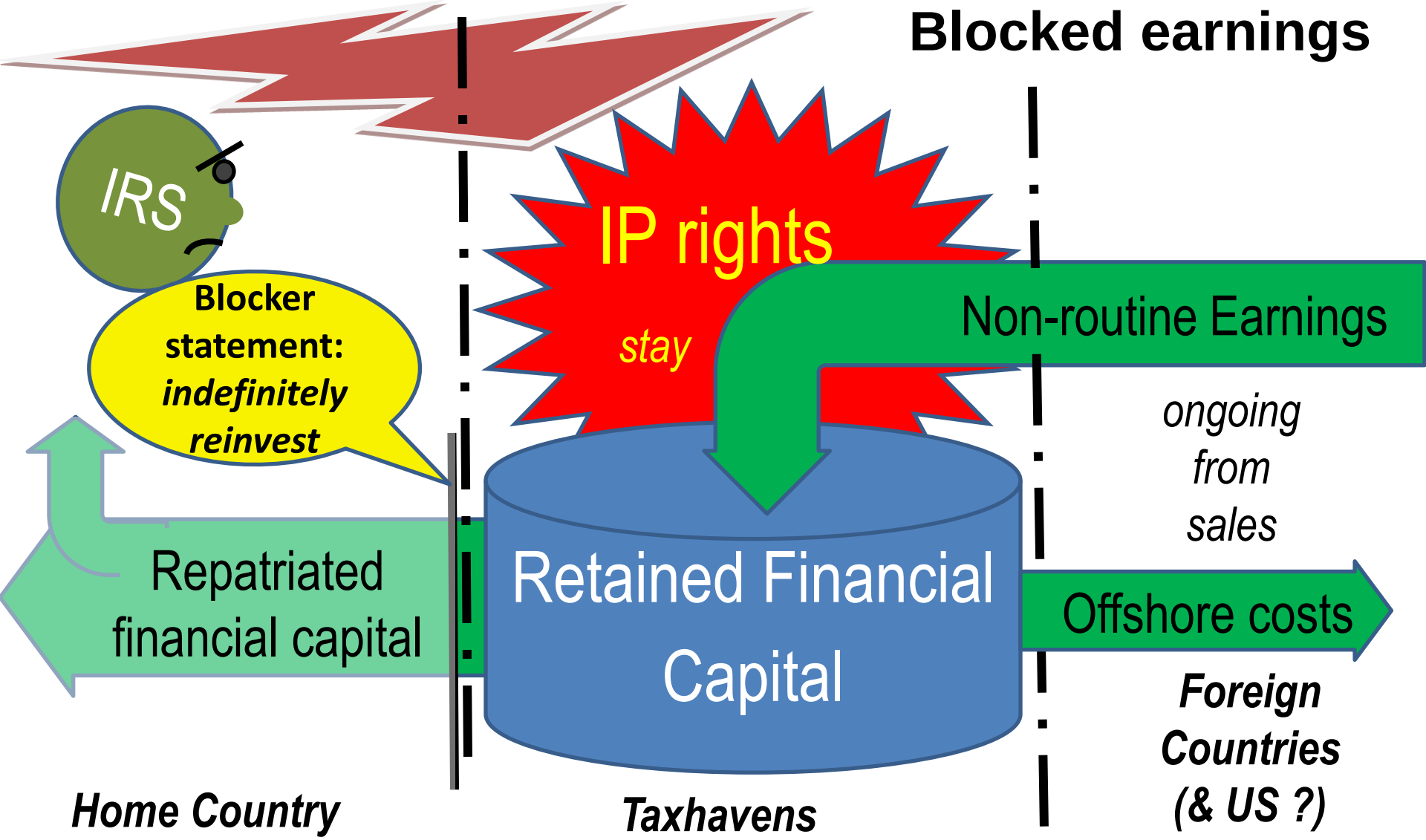
Sharing IP
2 situations

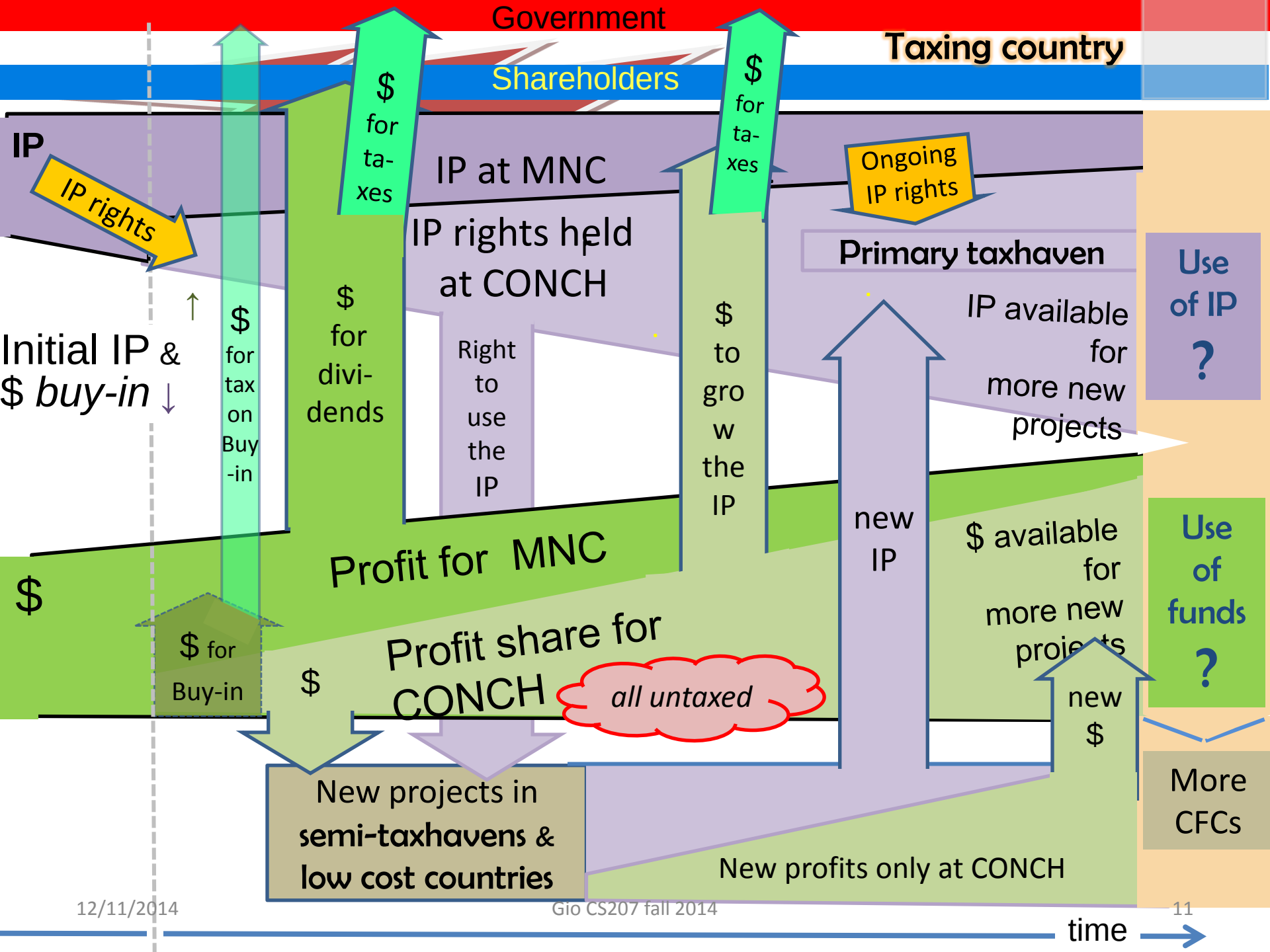
1. No product yet
Selling to an independent exploiter



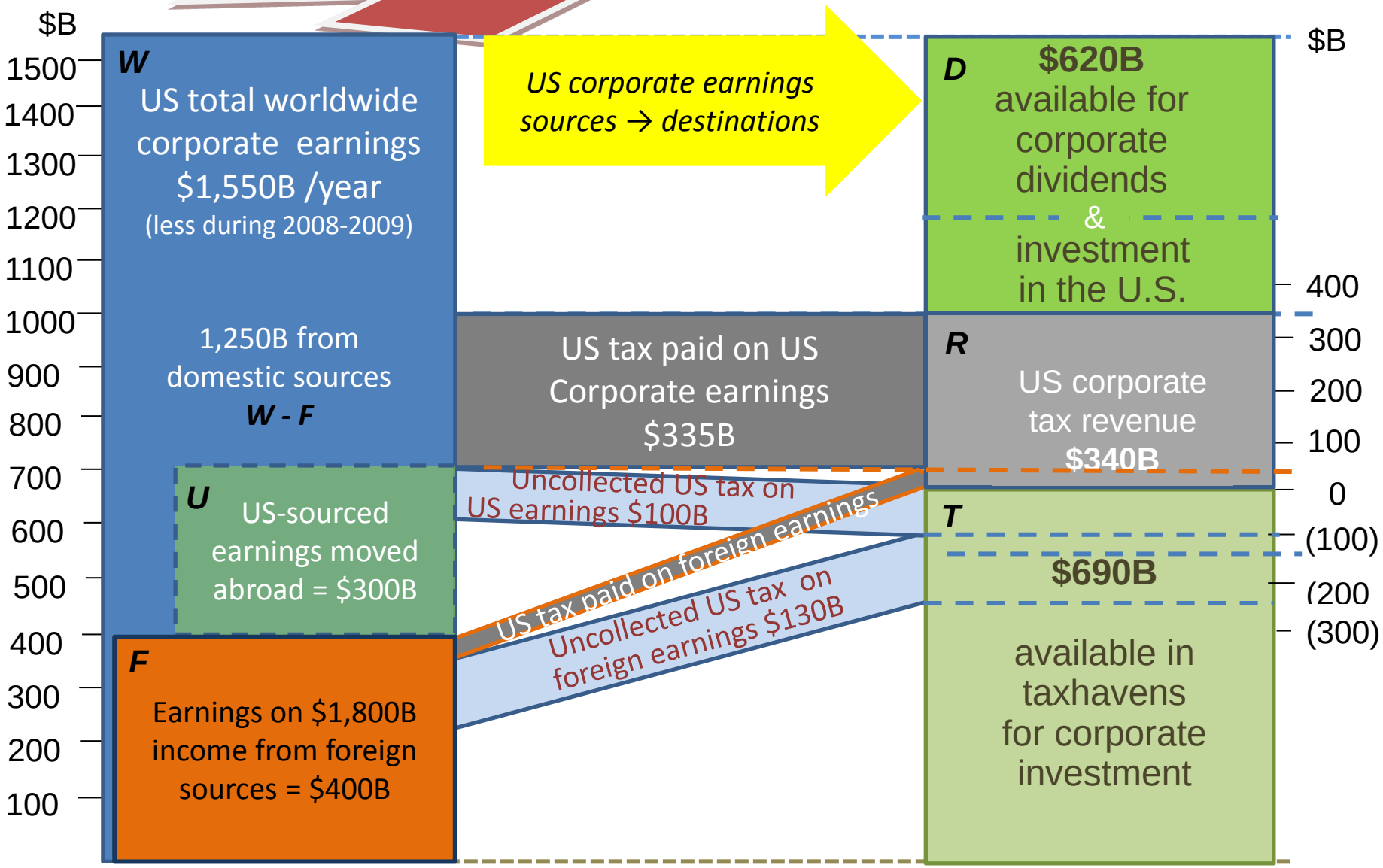
2. Already have a product,
But want more growth
Sharing with a participant




Blocked earnings
IRS
Blocker statement: *indefinitely reinvest*
IP rights
stay
Non-routine Earnings
ongoing from sales
Repatriated financial capital
Retained Financial Capital
Offshore costs
Home Country
Taxhavens
Foreign Countries (& US ?)


Government
Taxing country
Shareholders
IP
IP rights
$ for ta-xes
IP at MNC
$ for ta-xes
Ongoing IP rights
IP rights held at CONCH
Primary taxhaven
Use of IP ?
Initial IP & $ buy-in
$ for tax on Buy-in
$ for divi-dends
Right to use the IP
$ to grow the IP
IP available for more new projects
new IP
Profit for MNC
$
$ available for more new projects
Use of funds ?
$ for Buy-in
$
Profit share for CONCH
all untaxed
new $
More CFCs
New projects in semi-taxhavens & low cost countries
New profits only at CONCH
time

Corporate income



Global Effects

- It's not only US versus the world beyond
- It's multinationals versus the world

1. See for a 30 minute broadcast with pretty pictures of European effects

http://www.ndr.de/fernsehen/sendungen/panorama_die_reporter/Luxemburg-Leaks-English-version,luxemburgleaks106.html

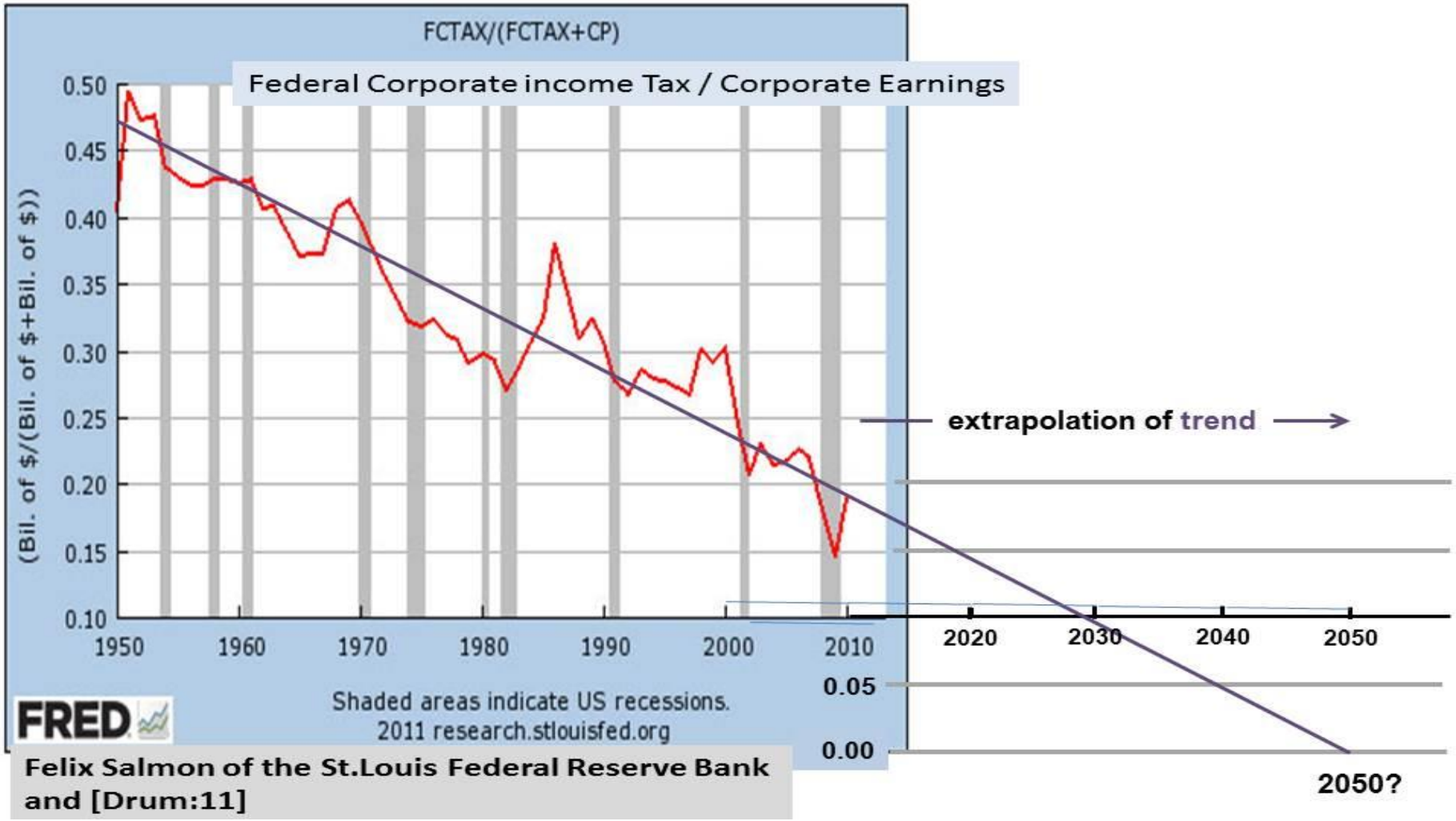
2. More briefly, with a lot of yelling

http://www.cnbc.com/id/102141877

or the many references provided at

http://i.stanford.edu/VIC/allVICcitations.pdf

Trend



Felix Salmon of the St.Louis Federal Reserve Bank and [Drum:11]

Proposal: Abolish Corporate Taxation now

Multinationals use taxhavens, Domestic businesses cannot

- Unfair taxation ! Easy to buy startups, still hard to integrate them

Loss of tax revenue from C-corporations ~75% of business tax -$143B

No `double taxation' 15% > full 35% (35%) tax on all Dividends $ 30B

without Bush tax cuts

Also full 35% taxes on capital gains (20%), on 70% of revenue $ 69B

Risk is a red herring. Inflation is real but also experienced by businesses and their gains.
Flexibility of holding term (now 1 year) encourages short term investments

Higher corporate dividend payouts to compensate. Also taxed $ 10B

More corporte spending: direct effect $ 20B

Don't count on indirect effect (Laffer curve) $ 0B

Total effect (0.5% of tax revenues) loss - $14B

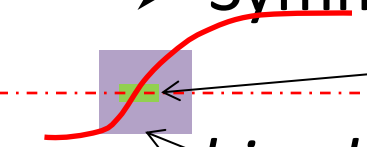
Estimate

Taxed item	Action	Change		Motivation and result
Corporate income tax (CIT) for C-corporations -- not S-corps. LLCs	Abolish	($143.3B)	75%	Cannot be administered fairly
Dividends to individuals	Tax as income	$30.4B		Treat all sources of individual income identically
Capital gains by individuals		$69.0B		
Effect of taxation of greater dividend payouts	Cor-porate	$9.6B		Tax on compensation of share-holders for their increased taxes.
Direct effect of investment		$20.4B		Purchases (based on DoD spending)
Research credit , similar corporate tax deductions (loopholes), corporate AMT		No $ change. No tax, no tax credit		If incentives are still desired, they must be replaced by explicit grants
Indirect effect of increased investment and repatriation of offshore holdings		No effect of *"Laffer curve"*		No trustworthy data
Total estimated effect		($13.8B)		(7.2%) of business tax revenues (0.5%) of US tax rev.

Economic Models

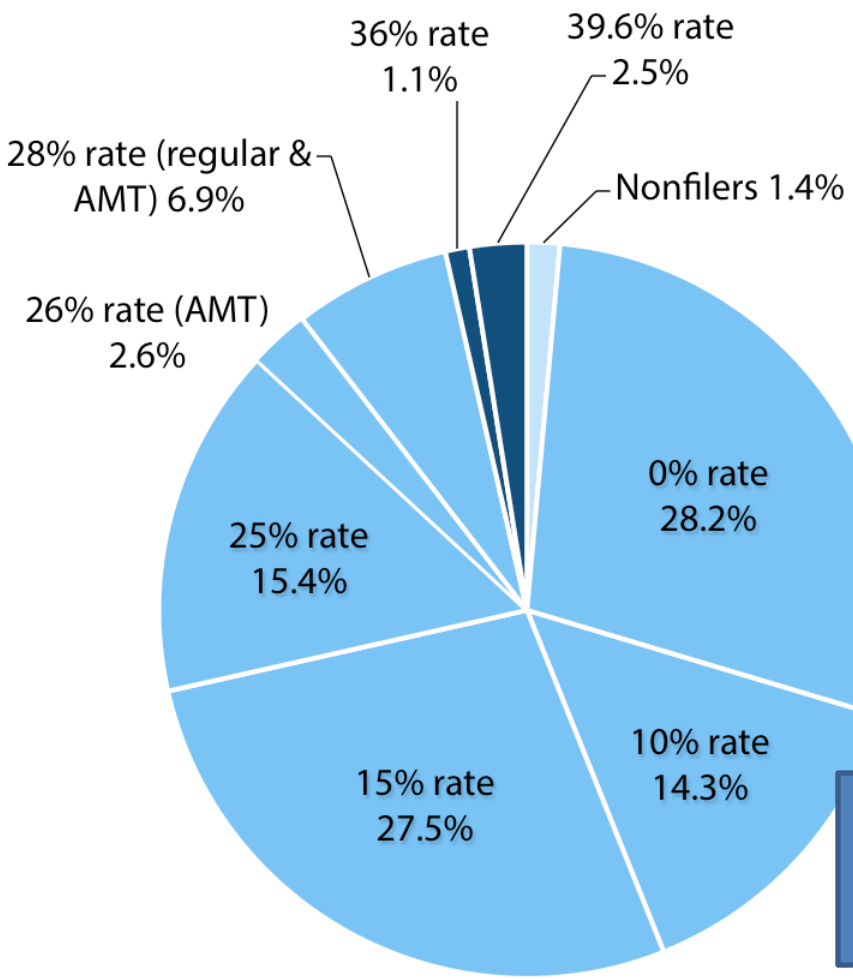
[Orrell: Economyths+]

- Used to predict effect of policies and tax changes
  use assumptions → based on easy data availability
  miss realistic detail
  - Equilibrium → ignores dynamics and lag: *housing*
  - Normal distribution → based on additive model $\sum n = \wedge 2$
    many effects are multiplicative: power-law $= \wedge 3,4$
  - Symmetric distribution → value S-curve not centered:



small (infinitesimal change) calculus →*symmetric*
big change: downside risk hurts more than upside gain
  - Supply cannot always grow as price increases → *fish*
  - Rational behavior → perfect foresight: X-mas *shopping?*
- Governments get poor advice

Small businesses and taxes



[Thiess:12] Rebecca Thiess: `Small Business' and Top Marginal Rates; Tax filers affected by proposed rate increases are not necessarily small, or businesses, or job creators; Economic Policy Institute, Issue Brief no.349, 13 Dec.2012.

Thorough comparison of the variety of SB metrics

Share of tax returns with business income affected by upper-income tax increases, 2011

Misvaluation

poor *due diligence*

Hewlett-Packard Co. said on Tuesday that it's the victim of a multi-billion dollar fraud at the hands of a British company it bought last year that lied about its finances.

HP said Autonomy Corporation PLC, a British company it bought for $10 billion last year, lied about its finances, resulting in a massive write-down of the value of the business. HP's net loss for the fiscal fourth quarter, which ended Oct. 31, amounted to $6.85 billion, or $3.49 per share

HP CEO Meg Whitman said executives at Autonomy Corporation PLC "willfully" boosted the company's figures through various accounting tricks, which convinced HP to pay $9.7 billion for the company in October 2011. Autonomy's former CEO said HP's allegations are false. HP is now taking an $8.8 billion charge to align Autonomy's purchase price with what HP now says is its real value. More than $5 billion of that charge is due to false accounting, HP said. The revelation is another blow for HP, which is struggling to reinvent itself as PC and printer sales shrink. The company's stock hit a 10-year low in morning trading. Among other things, Autonomy makes search engines that help companies find vital information stored across computer networks. Acquiring it was part of an attempt by HP to strengthen its portfolio of high-value products and services for corporations and government agencies. The deal was approved by Whitman's predecessor, Leo Apotheker, but closed three weeks into Whitman's tenure as chief executive. Whitman was a member of HP's board of directors when Apotheker initiated the Autonomy purchase. Among the tricks used at Autonomy, Whitman said: The company had been booking the sale of computers as software revenue and claiming the cost of making the machines as a marketing expense. Revenue from long-term contracts was booked up front, instead of over time. The allegations are serious, according to accounting experts. "According to GAAP (generally accepted accounting principles), the overstatement of revenue under any tax code is illegal," said Mark Williams, a finance professor at Boston University and a former bank examiner for the Federal Reserve. As a result of its alleged accounting practices, Autonomy appeared to be more profitable than it was and seemed to be growing its core software business faster than was actually the case. The moves were apparently designed to groom the company for an acquisition, Whitman said. Once HP bought the company, Autonomy's reported revenue growth and profit margin quickly declined. Autonomy CEO Mike Lynch continued to run the company as part of HP, but Whitman forced him out on May 23 because it was not living up to expectations.

Money

- Income, represented by Money, is the objective
- What is money
- It is an owned asset that can be exchanged for other, real goods and the happiness they bring
- What gives money its value
- the money we use is debt-instrument backed by a trustworthy asset, *maybe?* Bitcoin
- In the US the faith we have in the US government

Backing

Originally most countries were on the gold standard – mixed with silver in the US (bimetallic coinage)

- a ten-dollar coin was tiny, but real gold
  - Spanish doubloons

- common were silver dollars
  - Joachims**thaler** – a silver mine in Bohemia
- Other assets are feasible – they should not be easy to falsify and in limited supply
  - Shells
  - Corn
  - Oil

- pork bellies
- aluminum lire
- milk chits (Italy, 1950)

Paper money

- "Real money" is hard to handle ↓
- "Real money" is hard to manipulate ↑ & ↓

A government can keep gold and silver (specie) in its treasury and issue gold or silver certificates

- "dollar bills"
  - One on display with the IBM cards on 2nd floor
  - ➢ You could take them to federal bank and get gold
  - ➢ Gold miners would take their gold to the SF mint and could get gold certificates.

Fiat money

- Being on the gold standard has a problem
  - When more money is needed as in times of war, the government can print more gold certificates
  - But with the same backing the value deflates
- The U.S. went off the gold standard (more than once)
  - 5 April 1933 US citizen could no longer hold monetary gold/silver
  - 15 Aug. 1971 when it no longer allowed foreign countries to exchange US debt
- Now backed by "The *Full Faith and Credit*" [Article IV, Section 1 of the USC]
- But now not based on a tangible asset,

  but by the ability of government to levy taxes

Who can create *fiat money*?

- Anyone who has assets and is trusted

1. The Federal Reserve Bank $ ← taxes & trust
2. A bank can make loans ← assets held & trust for excess
3. A government reserve bank (UK BoE, ...) £, ¥, ₹ ← taxes
4. The European Central Bank € ← trust not ~~taxes~~ directly
5. Any financial institution with some assets & trust

Since ~1955 City-of-London banks & their offshore branches create

Eurodollars ← offshore income based on **IP** & trust

$2,600,000M in 1988 "*the largest source of capital in the world*" [Kynaston:02, p.696]

Investors don't care about the color of the money.

The End

I hope that you have learned in this course a bit about a topic which is currently ignored in the CS and Engineering curricula.

Much success in your futures

Gio Wiederhold

Business models and finance topics can be discovered when experienced entrepreneurs present their history. A good resource is of the Stanford Entrepreneurship Corner, with viseos at <A HREF="http://ecorner.stanford.edu">. I recommend searching for authors as Hawkins, Ries, Kaplan, Siebel, Estrin. Some of their views differ greatly, illustrating the complexity of translating IP to success. You can also search by topics.