



The Entrepreneurial State:

tackling smart and inclusive growth

Mariana Mazzucato

Professor in the Economics of Innovation and Public Value
University College London

Institute for Innovation and Public Purpose (IIPP)

www.marianamazzucato.com @mazzucatom



3 great challenges of our time

- Smart growth (better innovation)
- Sustainable growth (more green)
- Inclusive growth (less inequality)

Biggest challenge: *what is State's role?*

Set 'level' playing field then *get out of the way*

De-risk (and 'facilitate') private sector

Solve market and system 'failures'

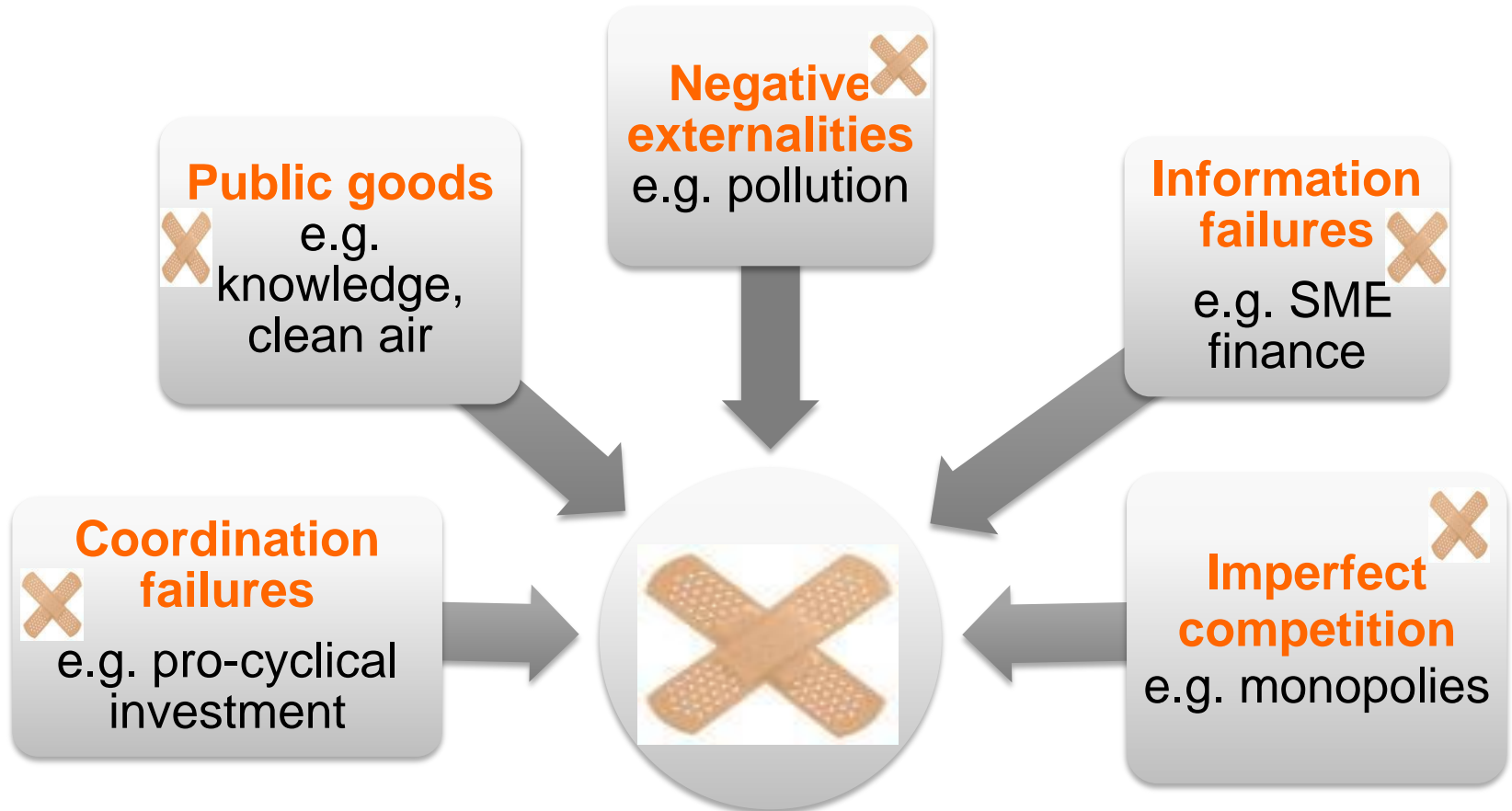
Something ... more interesting?



"**Governments** have always been **lousy at picking winners...** As the revolution rages, **governments should stick to the basics:** better schools for a skilled workforce, clear rules and a level playing field for enterprises of all kinds... **Leave the rest to the revolutionaries.**"

(‘The Third Industrial Revolution’, *The Economist*, April 21, 2012).

Just fixing market failures?



the assumption

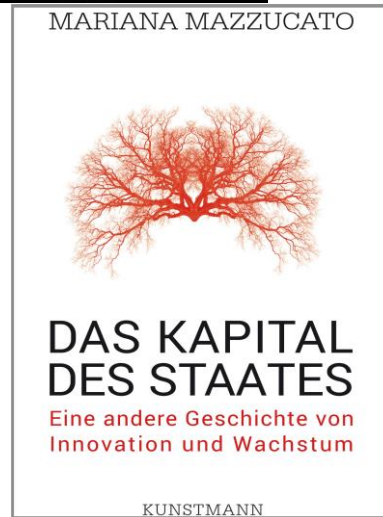
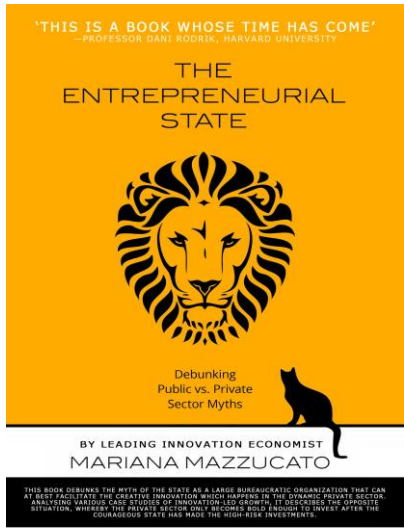


private
sector

vs.



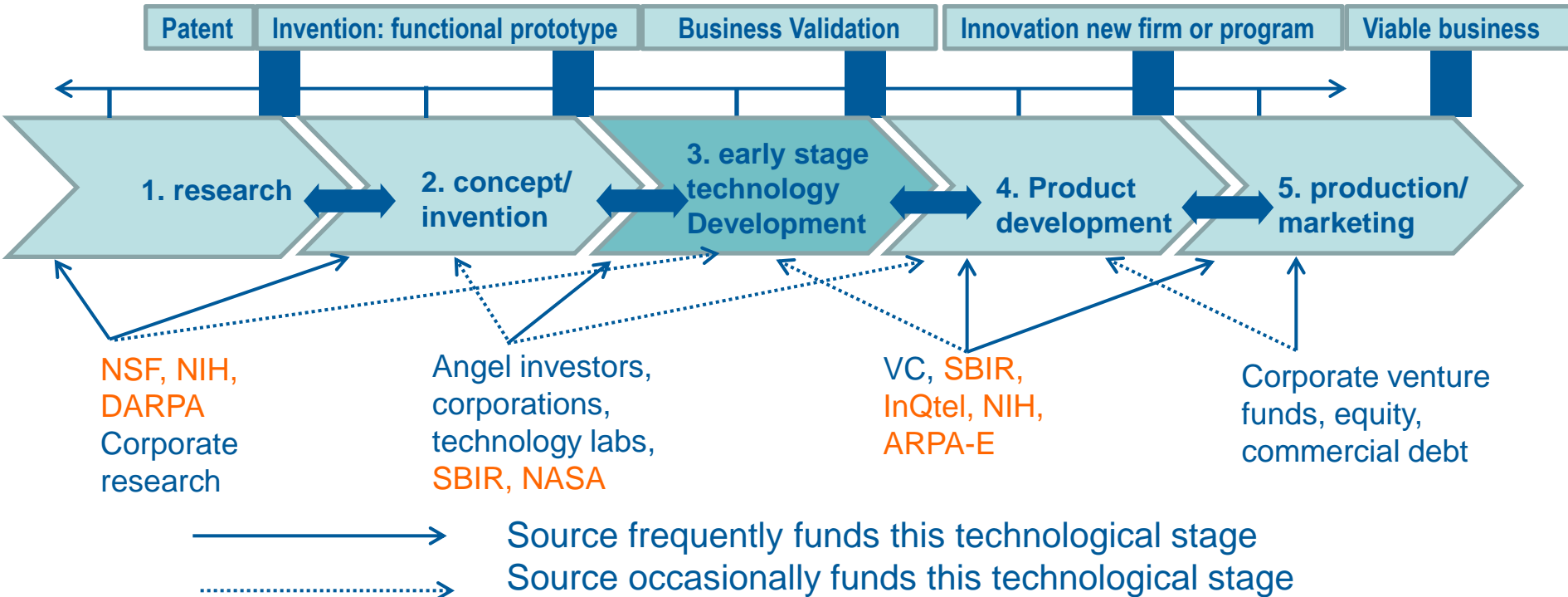
public
sector



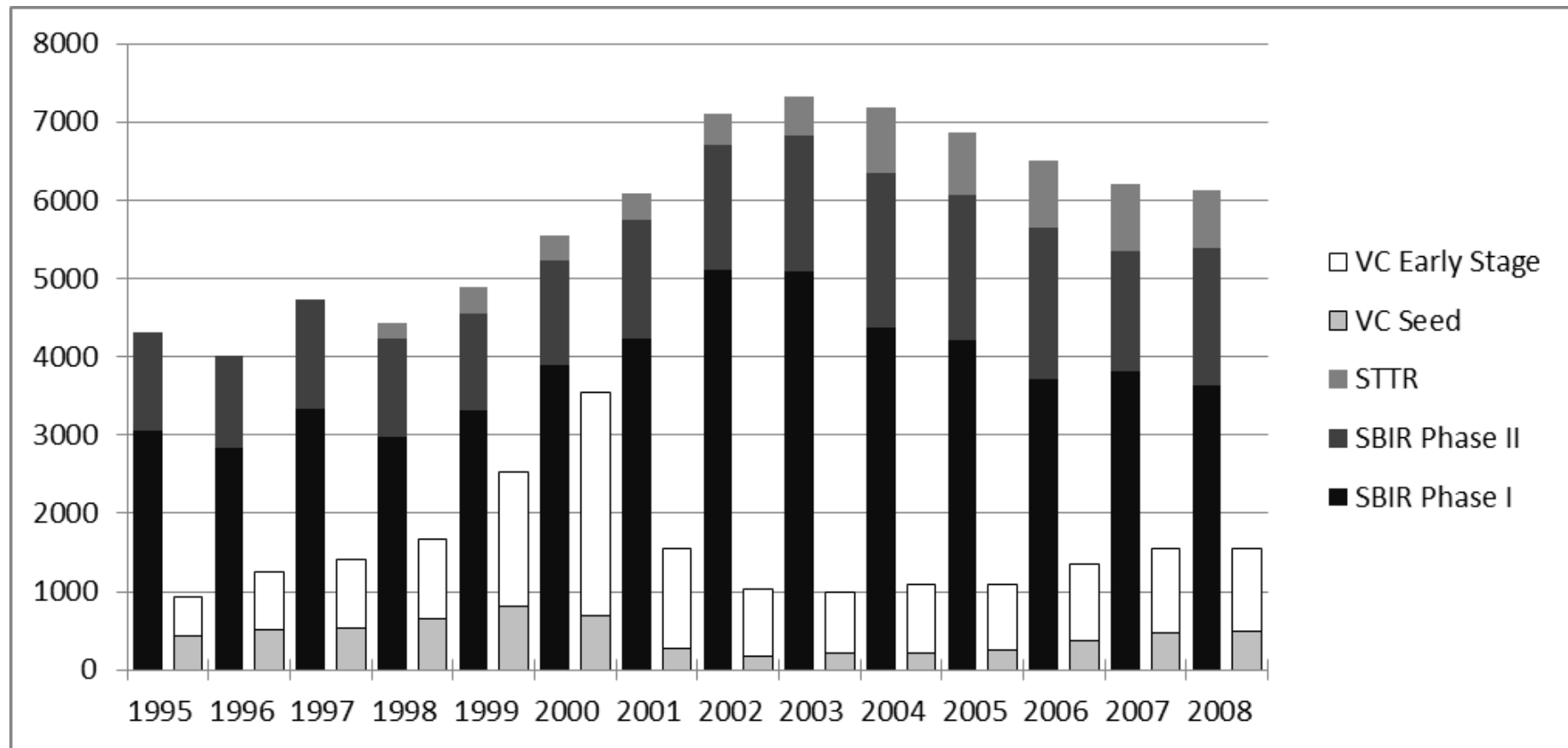
Market failure policies don't explain *General Purpose Technologies*

- 'mass production' system
- aviation technologies
- space technologies
- IT
- internet
- nuclear power
- nanotechnology
- green technology

Missions and risk-taking along entire innovation chain

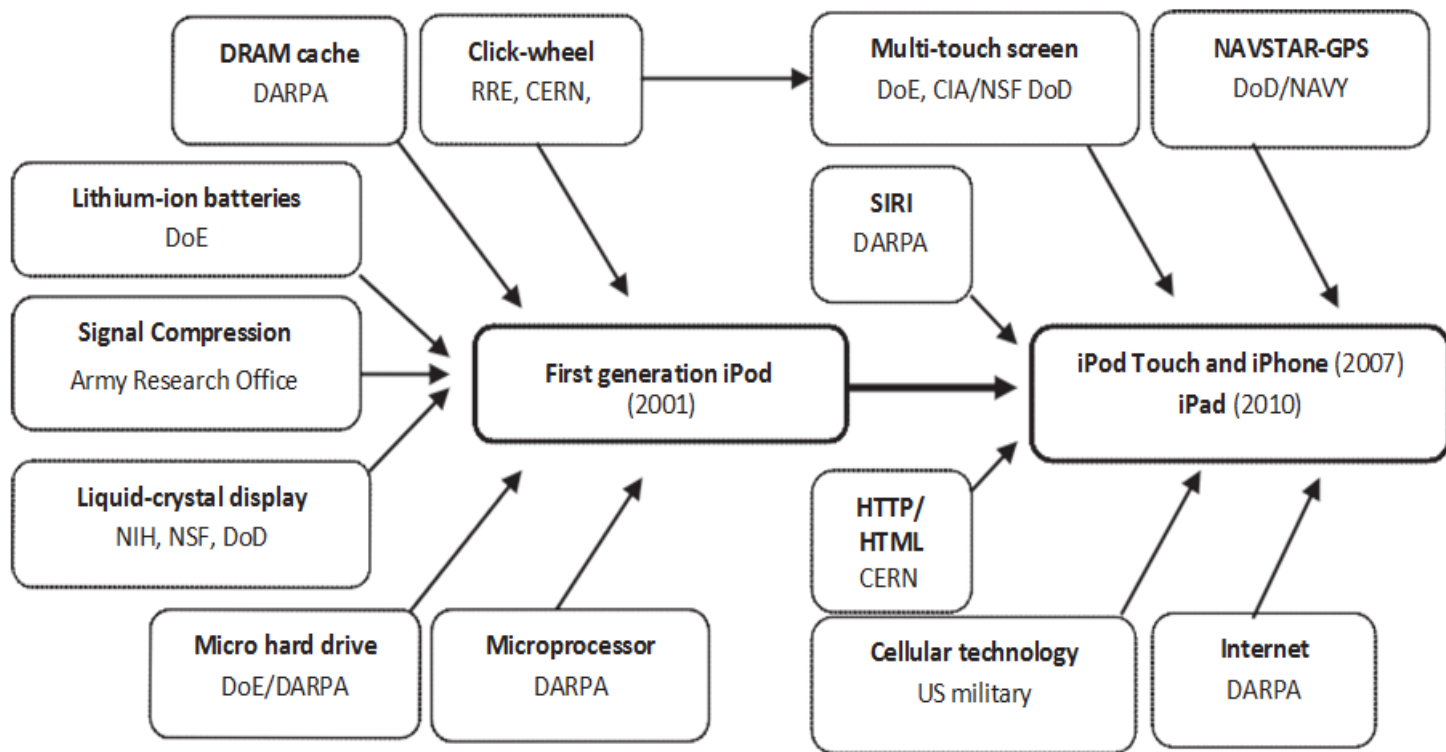


Private and Public (SBIR) Venture Capital



Source: Block and Keller, 2012

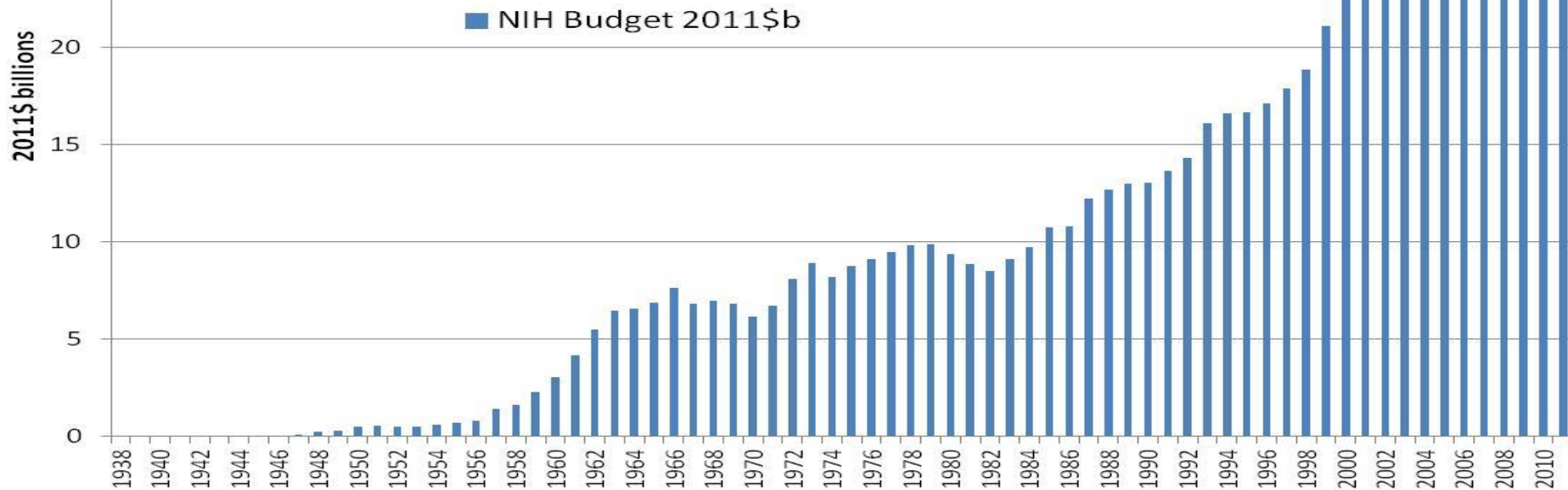
What makes the iPhone so 'smart'?



National Institutes of Health budgets 1936-2011

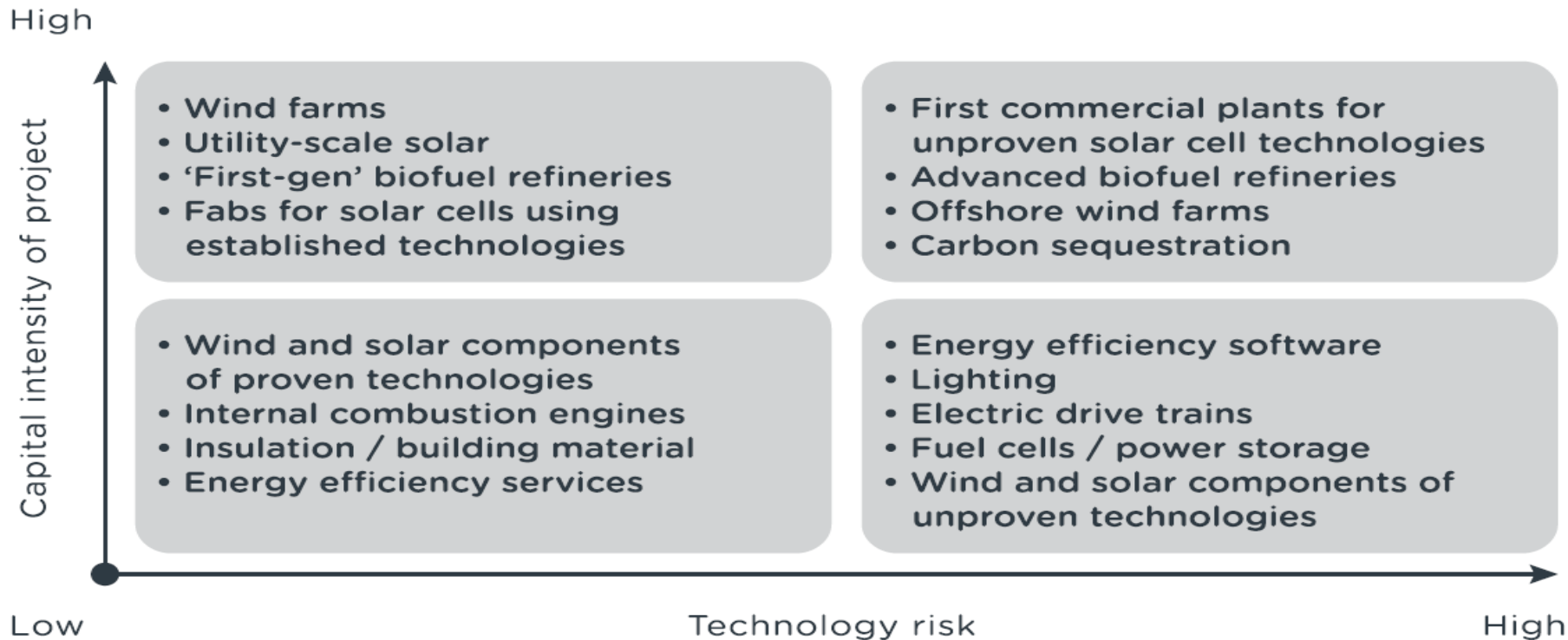
Total NIH spending, 1936-2011 in 2011 dollars=\$792 billion

NIH budget for 2012=\$30.9 billion

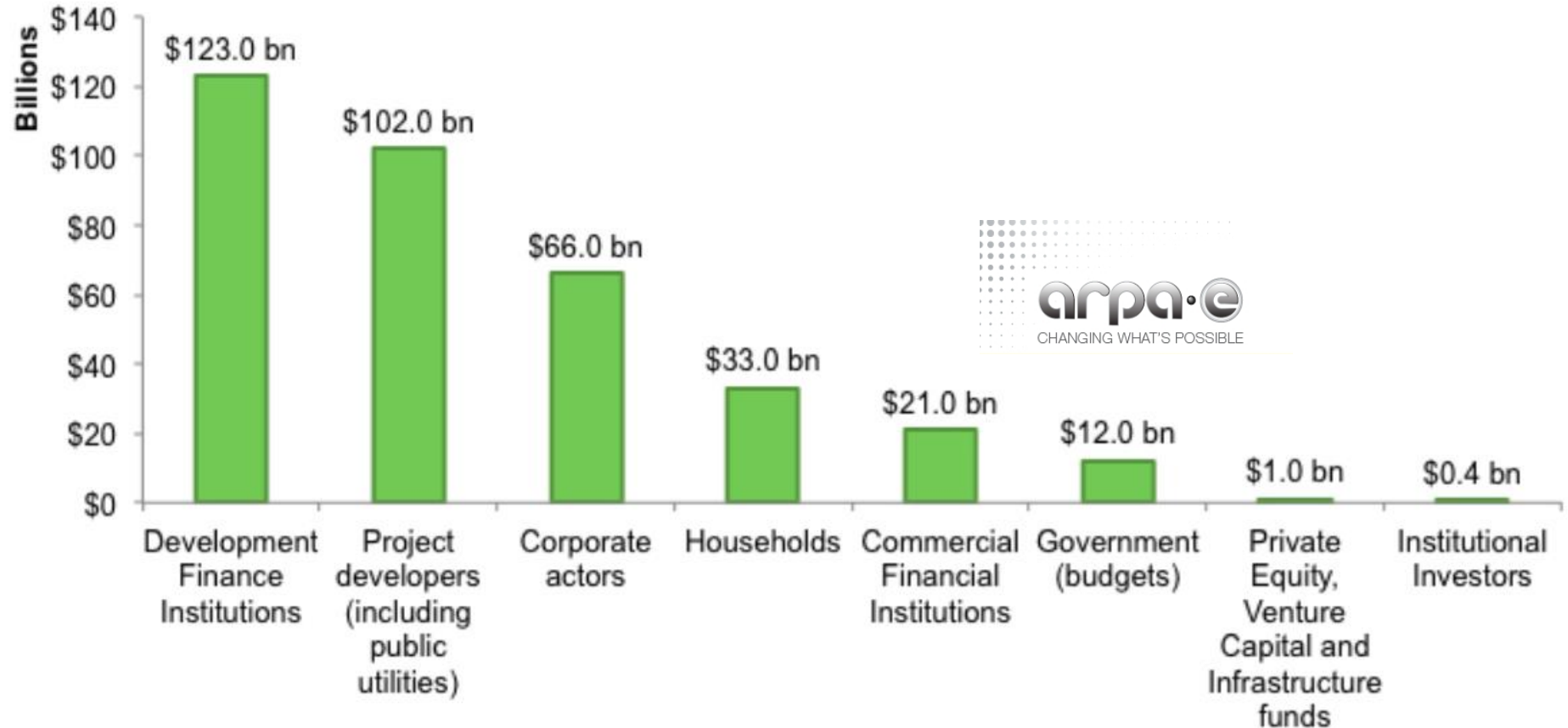


Technology risk in clean tech

(venture capital will ride the wave, who will kick/push?)



Green tech public & private investments (2011)



Source: Climate Finance Initiative

China Development Bank

China's 2020 goal of producing 20% energy from renewables.

5 year plan includes \$1.7 trillion dollars in 5 new (green) sectors.

CDB founded **CDB Capital**, a 'public equity' fund with **\$US 5.76 bn to finance innovative start-ups** from the energy and telecom sectors.

Yingli Green Energy received **\$1.7 bn** from 2008 through 2012 with a **\$5.3 bn line of credit** opened for it. **LDK Solar (\$9.1 bn)**; **Sinovel Wind (\$6.5 bn)**; **Suntech Power (\$7.6 bn)**; and Trina Solar (**\$4.6 bn**),

Patient committed finance has “allowed Chinese companies to further ramp up production and drive down costs” of renewable energy technologies

Creating missions not fixing markets

NASA's mission is to “*Drive advances in science, technology, aeronautics, and space exploration to enhance knowledge, education, innovation, economic vitality, and stewardship of Earth.*” NASA 2014 Strategic Plan

“*Creating breakthrough technologies for national security is the mission of the Defense Advanced Research Projects Agency (DARPA).*”

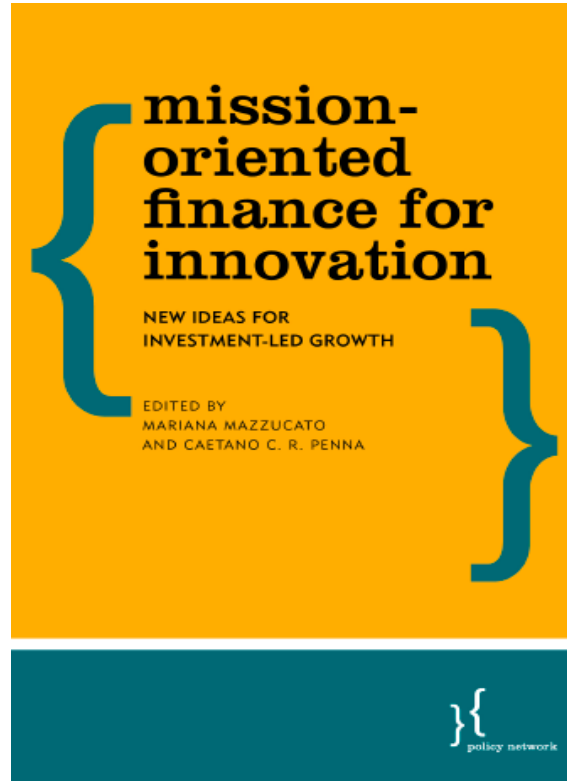
“The **ARPA-E mission** is to *catalyze* the development of transformational, high-impact energy technologies.”

“**NIH's mission** is to seek fundamental knowledge about the nature and behavior of living systems and the *application* of that knowledge to enhance health, lengthen life, and reduce illness and disability.”

“The **mission** of the **KfW Group** is to support change and encourage *forward-looking ideas* – in Germany, Europe and throughout the world.”

We measure success by how many risks we have been willing to take (with inevitable failures) and whether the successes actually matter.

Cheryl Martin, ex-Director ARPA-E



More than crowding-in: *creating* animal spirits

Businessmen have a different set of delusions from politicians, and need, therefore, different handling. They are, however, much milder than politicians, at the same time allured and terrified by the glare of publicity, easily persuaded to be 'patriots', perplexed, bemused, indeed terrified, yet only too anxious to take a cheerful view, vain perhaps but very unsure of themselves, pathetically responsive to a kind word. You could do anything you liked with them, if you would treat them (even the big ones), **not as wolves or tigers, but as domestic animals** by nature, even though they have been badly brought up and not trained as you would wish....

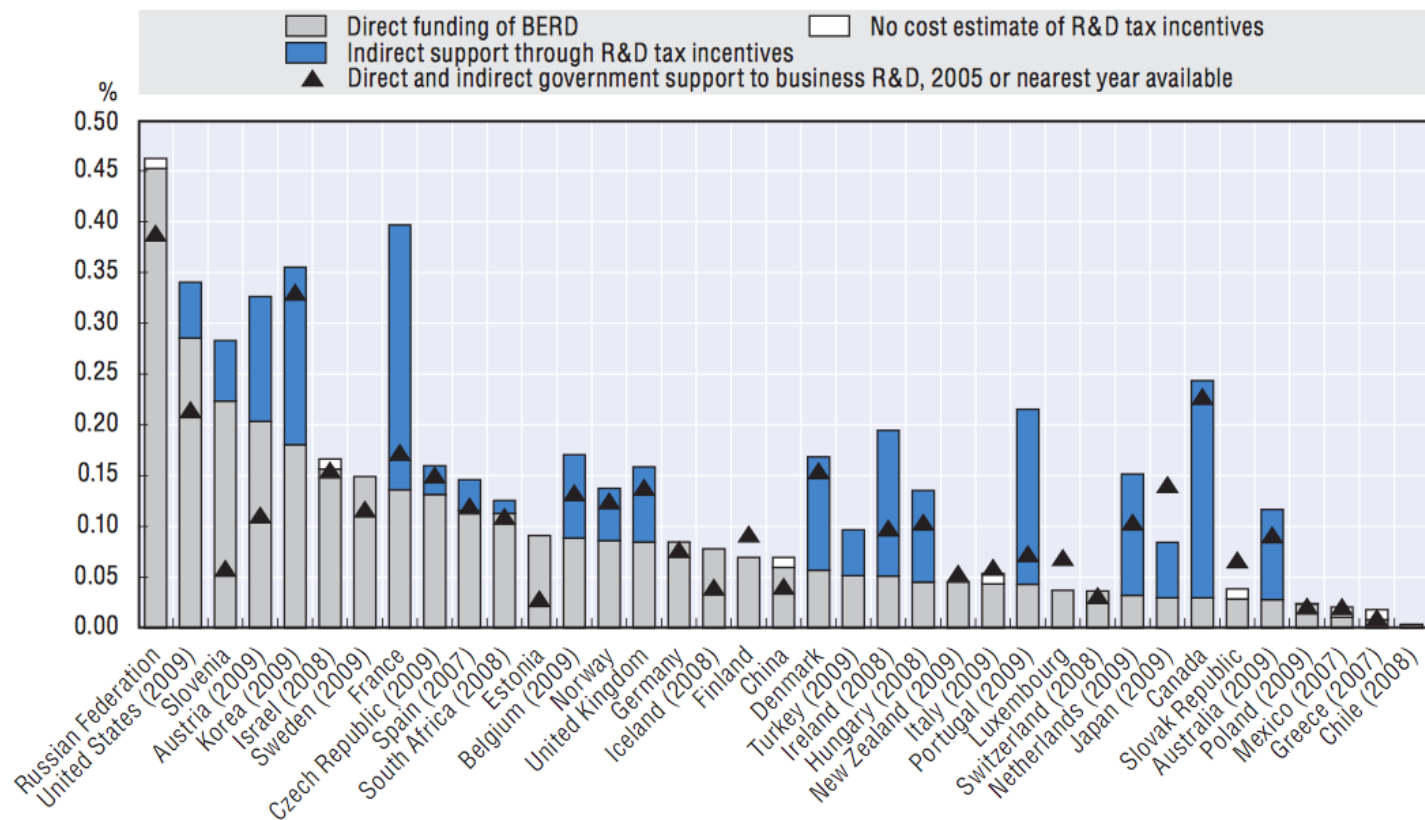


John M. Keynes's private letter to **Franklin D. Roosevelt**

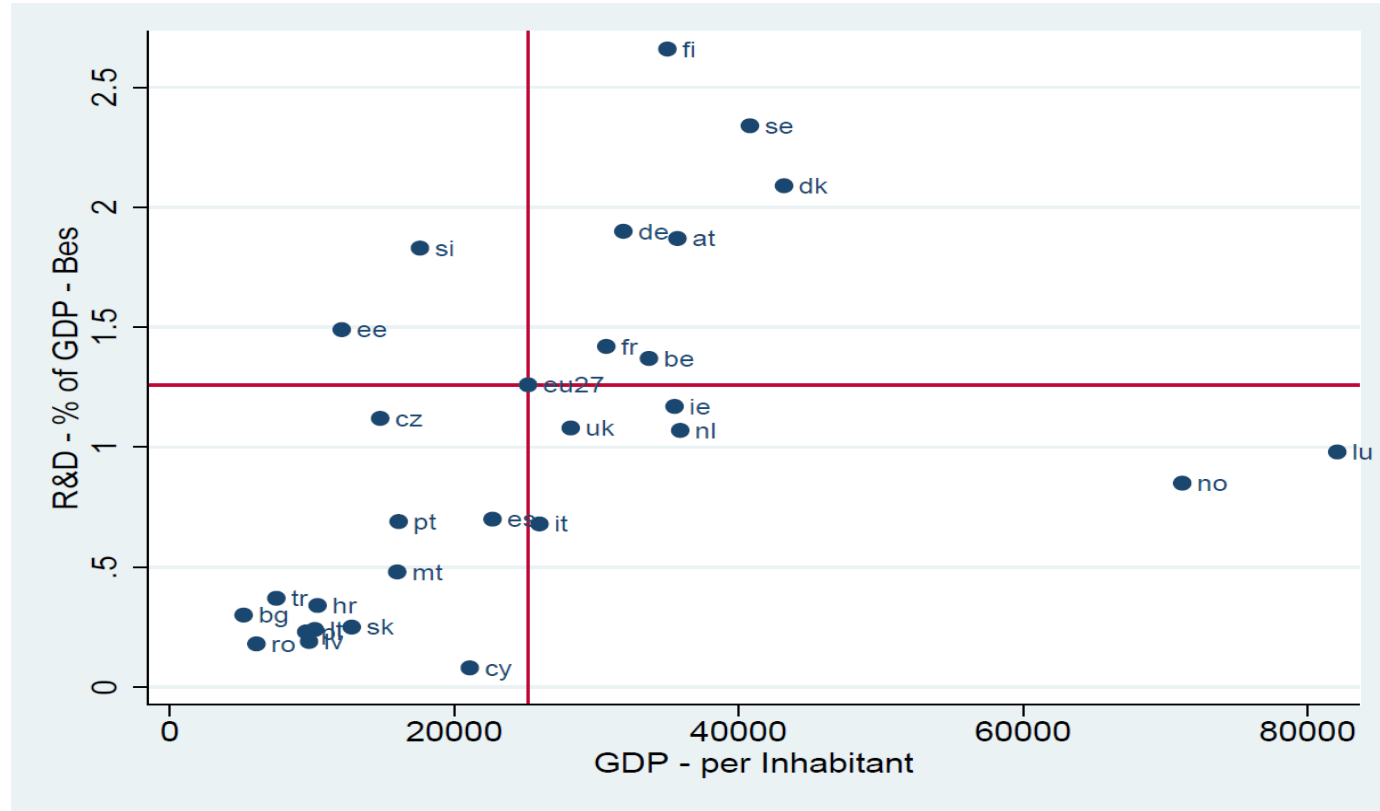
Feb 1, 1938

Direct government funding of business R&D and tax incentives for R&D, 2010

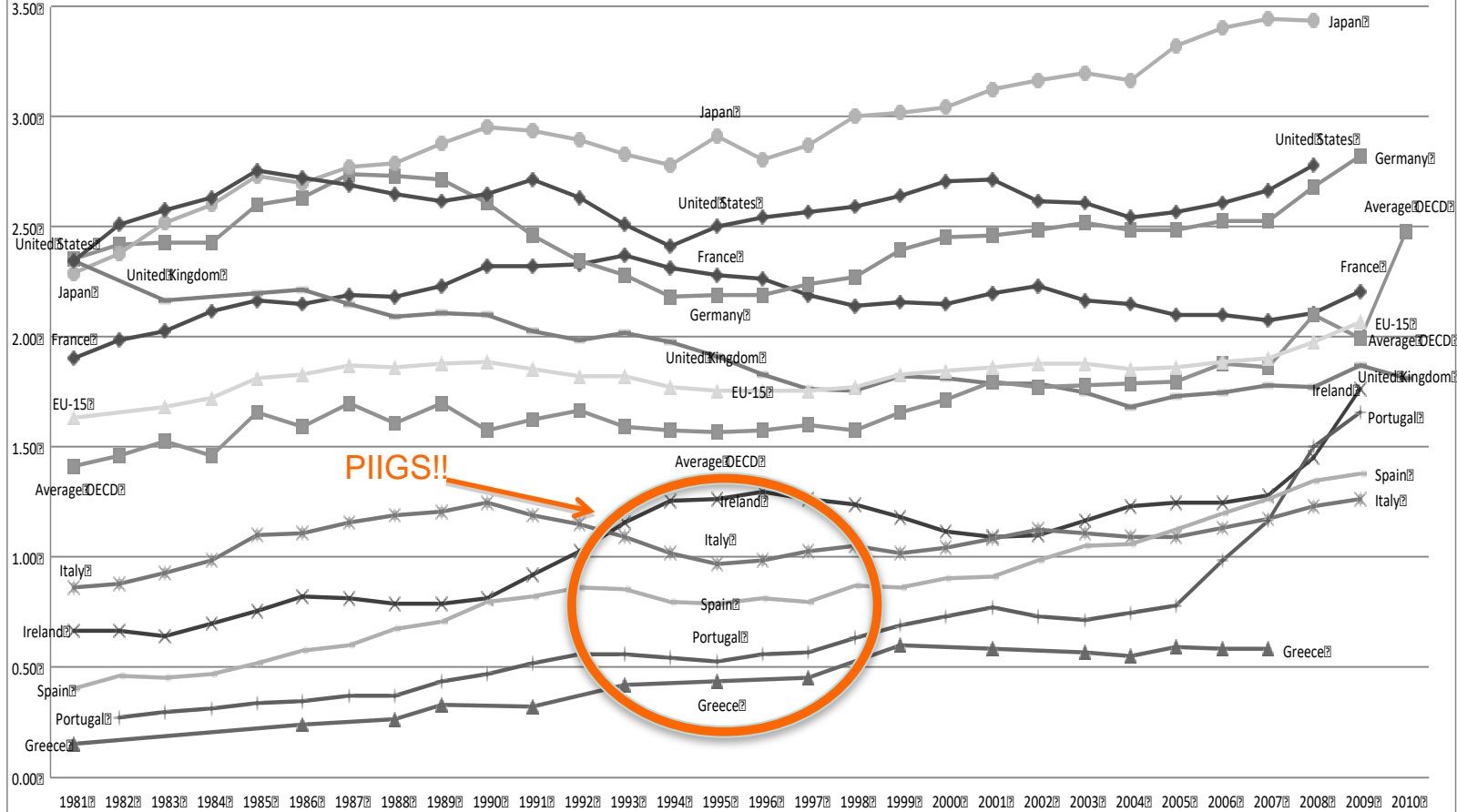
As a percentage of GDP



Business R&D spending across Europe



GERD as Percentage of GDP





A key element to get **an energy breakthrough** is more basic research. And that **requires the government to take the lead**. Only when that research is pointing towards a product then we can expect the private sector to kick in.

Source:

<http://www.youtube.com/watch?v=x54bVuduqaU>



INCOME INEQUALITY IN THE UNITED STATES, 1910-2010



Source: Piketty, 2013

Warren Buffet

“I have worked with investors for 60 years and I have yet to see anyone — not even when capital gains rates were 39.9 percent in 1976-77 — shy away from a sensible investment because of the tax rate on the potential gain. People invest to make money, and potential taxes have never scared them off. And to those who argue that higher rates hurt job creation, I would note that a net of nearly 40 million jobs were added between 1980 and 2000. You know what’s happened since then: lower tax rates and far lower job creation.”

THE TOP 10 STOCK REPURCHASERS

2003-2012

At most of the leading U.S. companies below, distributions to shareholders were well in excess of net income. These distributions came at great cost to innovation, employment, and—in cases such as oil refining and pharmaceuticals—customers who had to pay higher prices for products.

Fortune 500 companies have spent **\$2.3 trillion** on **buybacks** from **2003-2012** (54% of their earnings), with another 37% on dividends.

(William Lazonick, HBR 2014)

#1

EXXON MOBIL

NET INCOME

\$347B

REPURCHASES

\$207B

DIVIDENDS

\$80B

TOTAL

\$287B

83% of NI

CEO PAY

\$289M

% STOCK BASED

73%

\$211M

#2

MICROSOFT

NET INCOME

\$148B

REPURCHASES

\$114B

DIVIDENDS

\$71B

TOTAL

\$185B

125% of NI

CEO PAY

\$12M

% STOCK BASED

0%

\$0*

#3

IBM

NET INCOME

\$117B

REPURCHASES

\$107B

DIVIDENDS

\$23B

TOTAL

\$130B

111% of NI

CEO PAY

\$247M

% STOCK BASED

64%

\$158M

#4

CISCO SYSTEMS

NET INCOME

\$64B

REPURCHASES

\$75B

DIVIDENDS

\$2B

TOTAL

\$77B

121% of NI

CEO PAY

\$297M

% STOCK BASED

92%

\$273M

#5

PROCTER & GAMBLE

NET INCOME

\$93B

REPURCHASES

\$66B

DIVIDENDS

\$42B

TOTAL

\$108B

116% of NI

CEO PAY

\$90M

% STOCK BASED

16%

\$14M

#6

HEWLETT-PACKARD

NET INCOME

\$41B

REPURCHASES

\$64B

DIVIDENDS

\$9B

TOTAL

\$73B

177% of NI

CEO PAY

\$210M

% STOCK BASED

37%

\$78M

#7

WALMART

NET INCOME

\$134B

REPURCHASES

\$62B

DIVIDENDS

\$35B

TOTAL

\$97B

73% of NI

CEO PAY

\$189M

% STOCK BASED

62%

\$117M

#8

INTEL

NET INCOME

\$79B

REPURCHASES

\$60B

DIVIDENDS

\$27B

TOTAL

\$87B

109% of NI

CEO PAY

\$127M

% STOCK BASED

62%

\$79M

#9

PFIZER

NET INCOME

\$84B

REPURCHASES

\$59B

DIVIDENDS

\$63B

TOTAL

\$122B

146% of NI

CEO PAY

\$91M

% STOCK BASED

25%

\$23M

#10

GENERAL ELECTRIC

NET INCOME

\$165B

REPURCHASES

\$45B

DIVIDENDS

\$87B

TOTAL

\$132B

81% of NI

CEO PAY

\$126M

% STOCK BASED

25%

\$32M

Better 'deal' between public & private

- reinvesting profits (less hoarding and sharebuybacks)
- retaining golden share of IPR
- negotiating conditions on patents (less upstream)
- income contingent loans
- capping prices (Bayh Dole act allows it)
- retain some equity (lessons from Tesla & Solyndra)
- % payback into an 'innovation fund'
- State investment banks

Think Again!



vs.

