



The (green?) Entrepreneurial State


Mariana Mazzucato

R.M. Phillips Professor in Economics of Innovation
Science Policy Research Unit (SPRU)
University of Sussex, UK

www.marianamazucato.com

@MazzucatoM

Many battles!

- ◆ “Smart” growth (more innovation)
- ◆ “Inclusive” growth (less inequality)
- ◆ “Sustainable” growth (more green) 
- ◆ “Rebalanced” growth (less speculative)

Biggest battle? Economic theory!

“The important thing for Government is not to do things which individuals are doing already, and to do them a little better or a little worse; but to **do those things which at present are not done at all.**” *John M. Keynes, The End of Laissez Faire, 1926 (p. 44)*

“Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the **slaves of some defunct economist.** ...I am sure that the power of vested interests is vastly exaggerated compared with the **gradual encroachment of ideas.**”

The General Theory of Employment Interest and Money, 1936 (p. 383)

What is the State's role?

- a) Set 'level' playing field then *get out of the way*
- b) Solve market 'failures'
- c) Something more interesting?

Market shaping not (only) fixing

Market failure view: correcting 'inefficiencies' to bring markets back to default 'efficient' position

SESSION TOPIC: STOCK MARKET PRICE BEHAVIOR

SESSION CHAIRMAN: BURTON G. MALKIEL

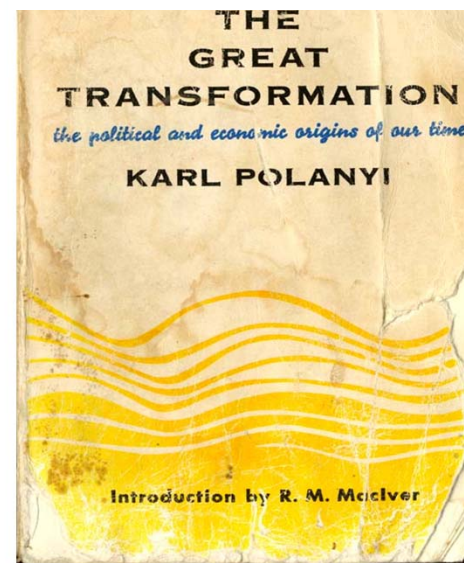
EFFICIENT CAPITAL MARKETS: A REVIEW OF
THEORY AND EMPIRICAL WORK*

EUGENE F. FAMA**

I. INTRODUCTION

THE PRIMARY ROLE of the capital market is allocation of ownership of the economy's capital stock. In general terms, the ideal is a market in which prices provide accurate signals for resource allocation: that is, a market in which firms can make production-investment decisions, and investors can choose among the securities that represent ownership of firms' activities under the assumption that security prices at any time "fully reflect" all available information. A market in which prices always "fully reflect" available information is called "efficient."

A different view:
Shaping and creating
markets actively





“The road to free markets was opened and kept open by an enormous increase in continuous, centrally organized and controlled interventionism... Administrators had to be constantly on the watch to ensure the free working of the system.”

Karl Polanyi, 1944
The Great Transformation

'THIS IS A BOOK WHOSE TIME HAS COME'
—PROFESSOR DANI RODRIK, HARVARD UNIVERSITY

THE ENTREPRENEURIAL STATE



Debunking
Public vs. Private
Sector Myths



BY LEADING INNOVATION ECONOMIST
MARIANA MAZZUCATO

THIS BOOK DEBUNKS THE MYTH OF THE STATE AS A LARGE BUREAUCRATIC ORGANIZATION THAT CAN AT BEST FACILITATE THE CREATIVE INNOVATION WHICH HAPPENS IN THE DYNAMIC PRIVATE SECTOR. ANALYSING VARIOUS CASE STUDIES OF INNOVATION-LED GROWTH, IT DESCRIBES THE OPPOSITE SITUATION, WHEREBY THE PRIVATE SECTOR ONLY BECOMES BOLD ENOUGH TO INVEST AFTER THE COURAGEOUS STATE HAS MADE THE HIGH-RISK INVESTMENTS.

For more information, please visit the book's website: www.entrepreneurialstate.anthepressblog.com

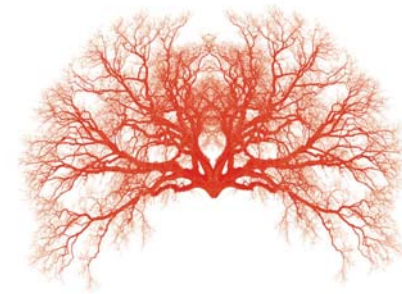
MARIANA MAZZUCATO

L'impresa privata è considerata da tutti una forza innovativa, mentre lo Stato è bollato come una forza inerziale, troppo grosso e pesante per fungere da motore dinamico. Lo scopo del libro che avete tra le mani è smontare questo mito.

Lo Stato innovatore

43 anticorpi  Laterza

MARIANA MAZZUCATO



DAS KAPITAL DES STAATES

Eine andere Geschichte von
Innovation und Wachstum

KUNSTMANN

the assumption



private
sector

vs.

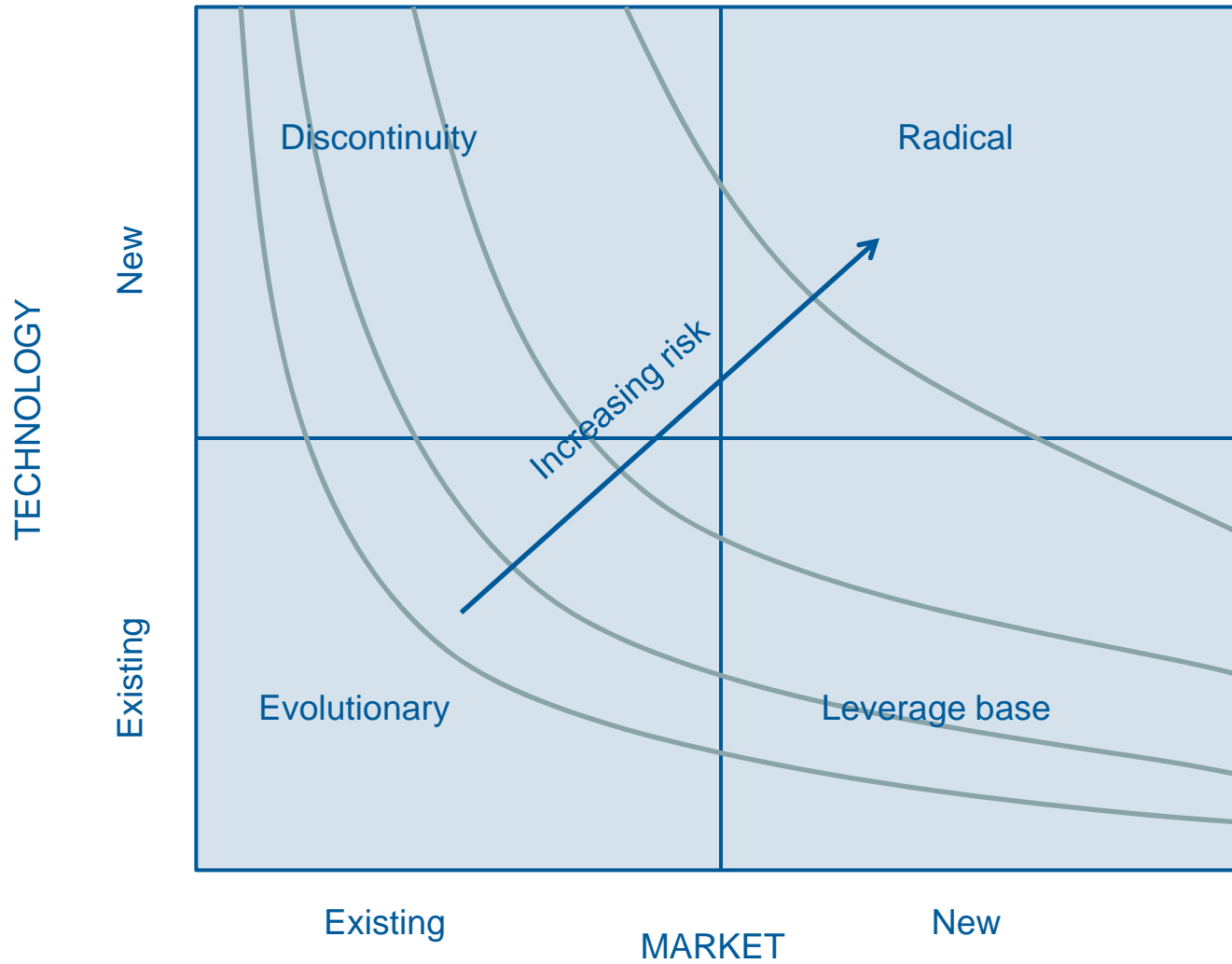


public
sector

Market failure policies don't explain the advent of key *General Purpose Technologies*

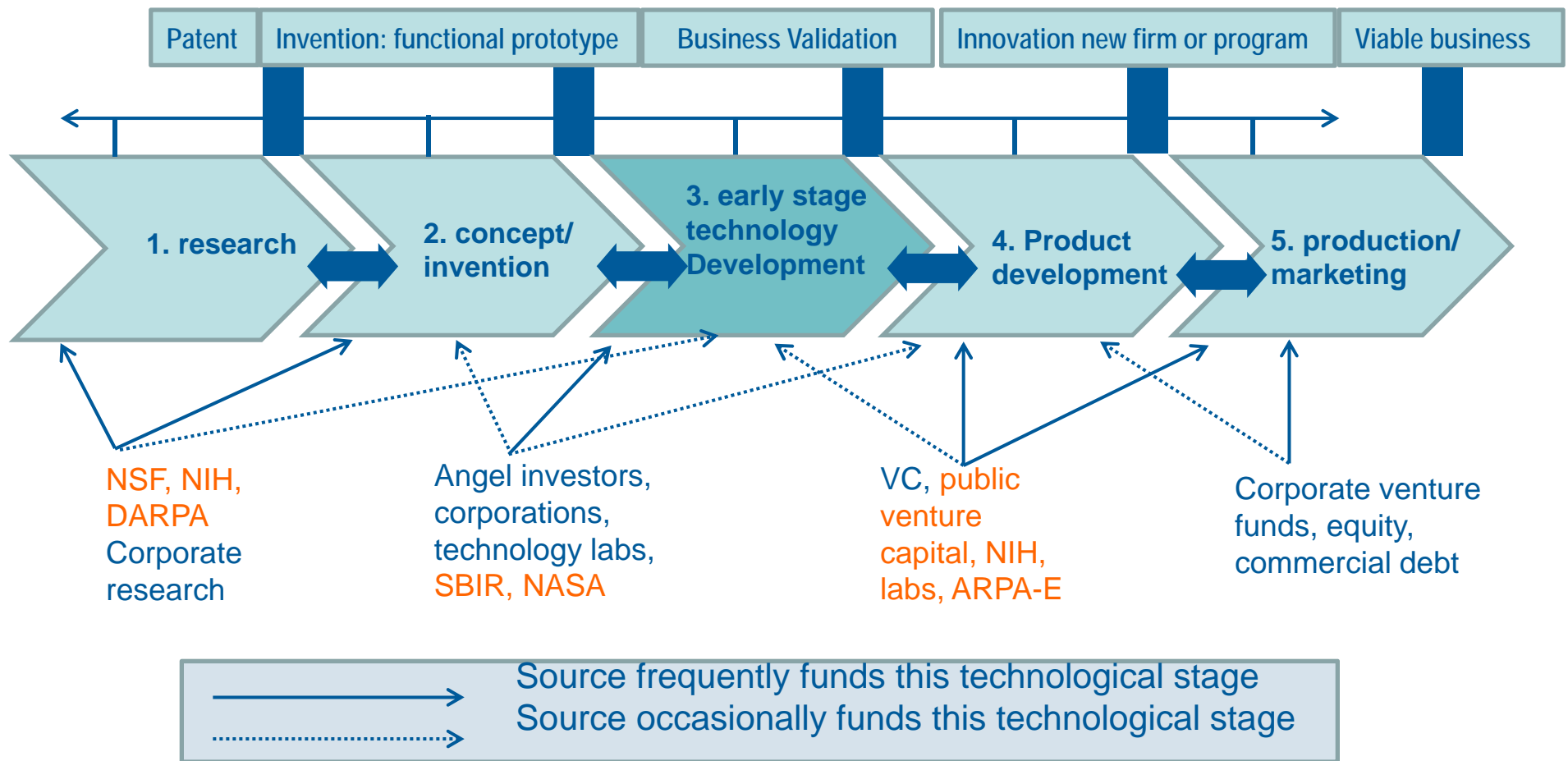
- 'mass production' system
- aviation technologies
- space technologies
- IT
- internet
- nuclear power
- nanotechnology
- green technology?

Market and technology risk



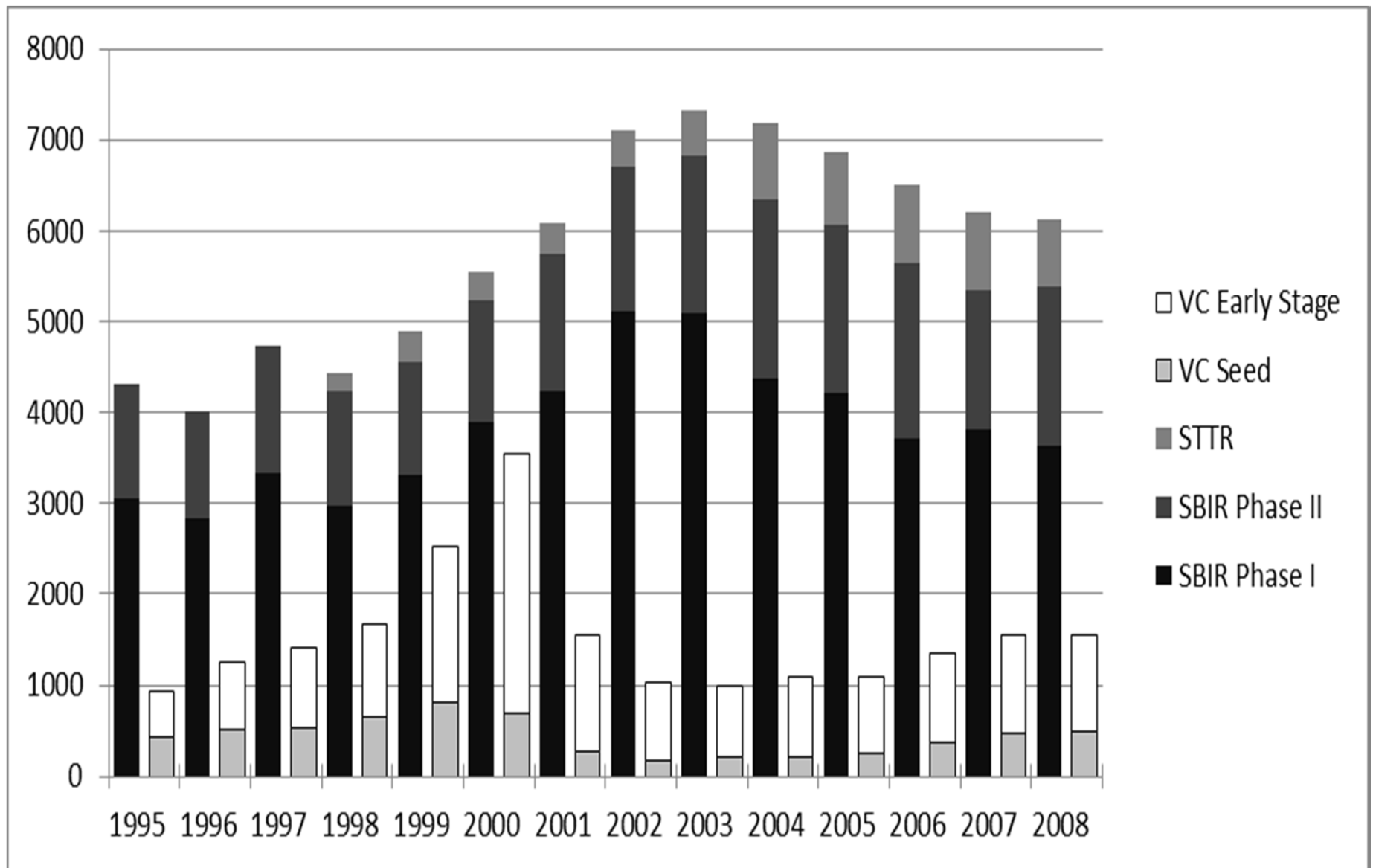
Mission oriented finance along entire innovation chain (demand side too)

(is green the new mission?)



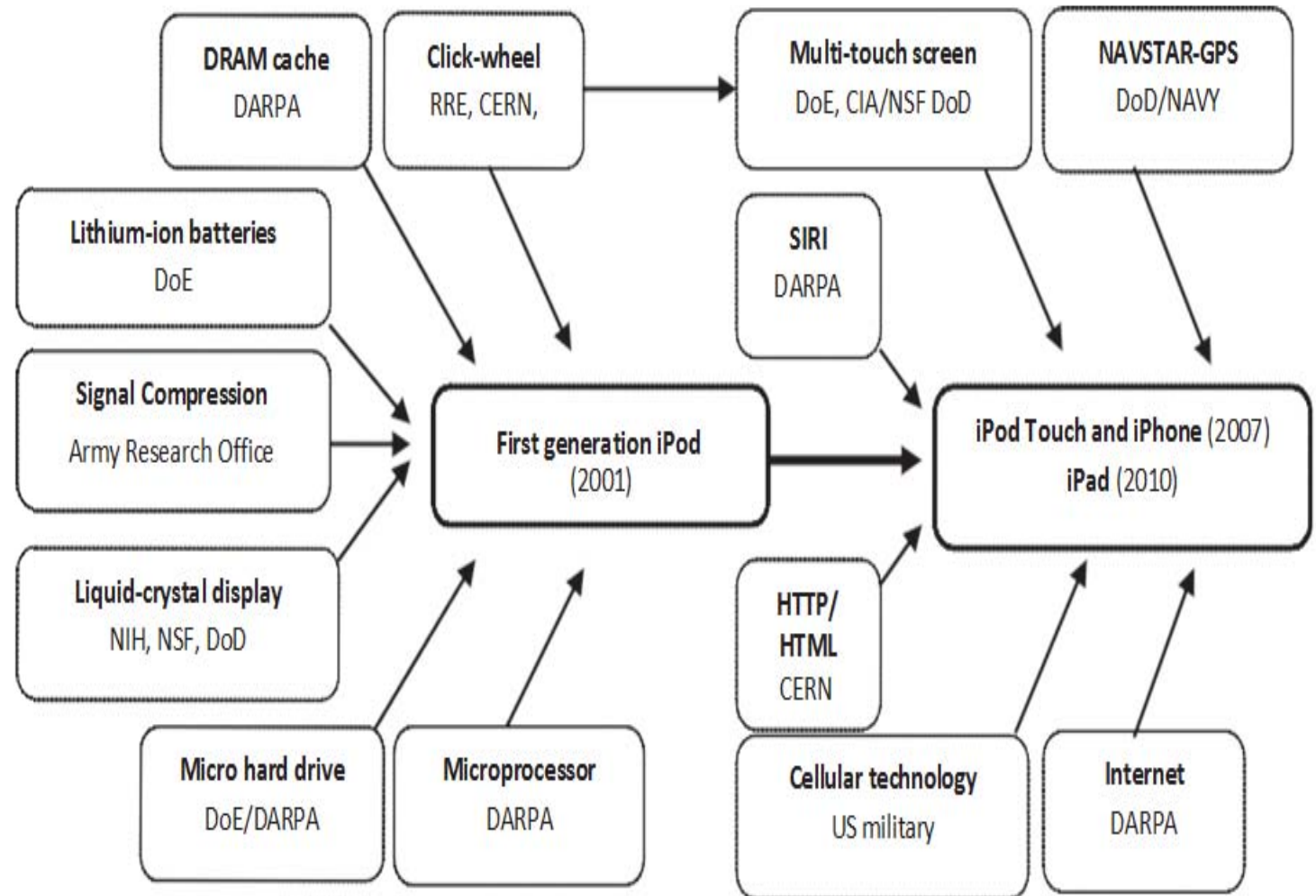
Source: Auerswald/Branscomb , 2003

Private and Public (SBIR) Venture Capital

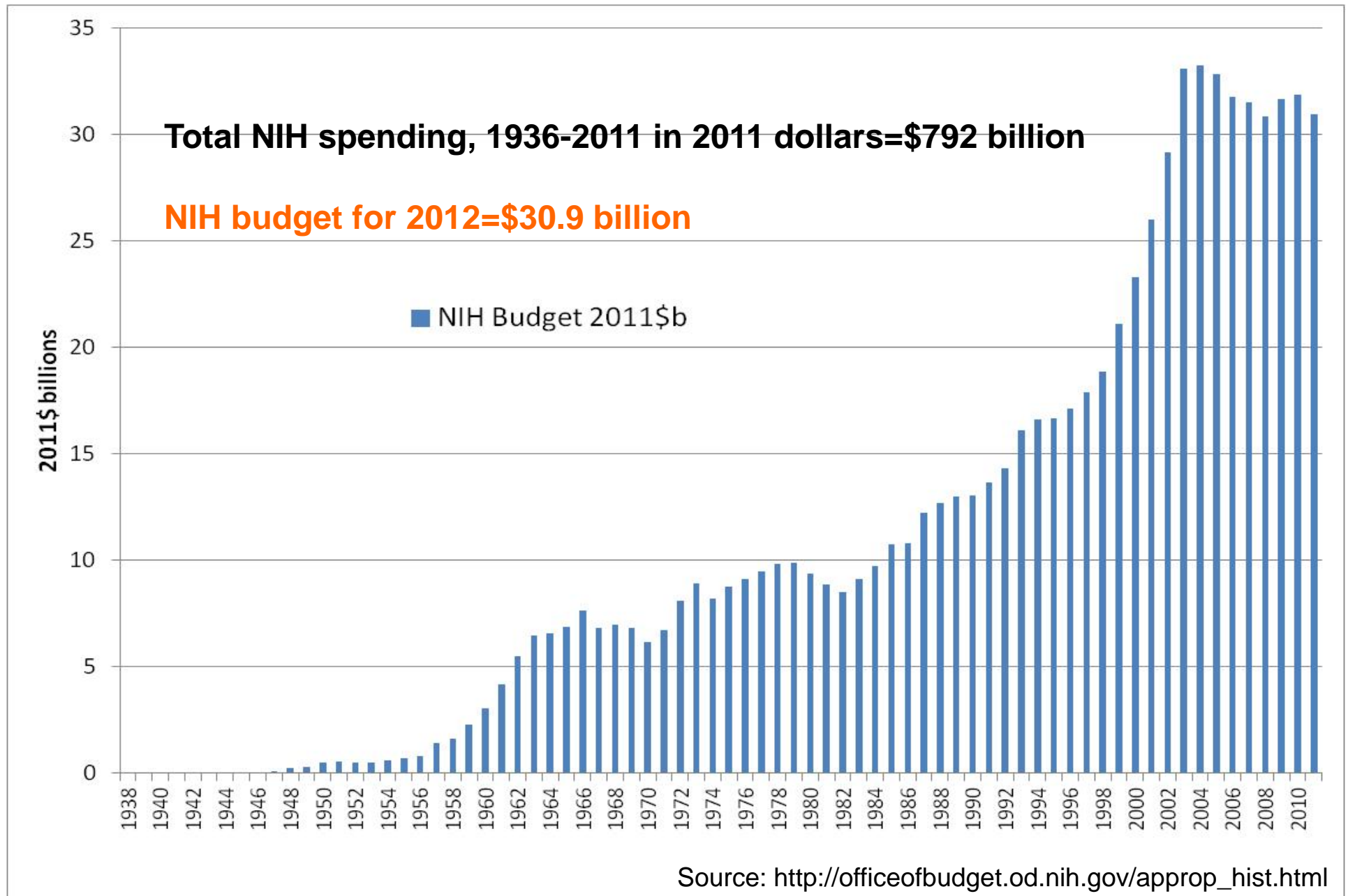


Source: Block and Keller, 2012

What makes the iPhone so 'smart'?

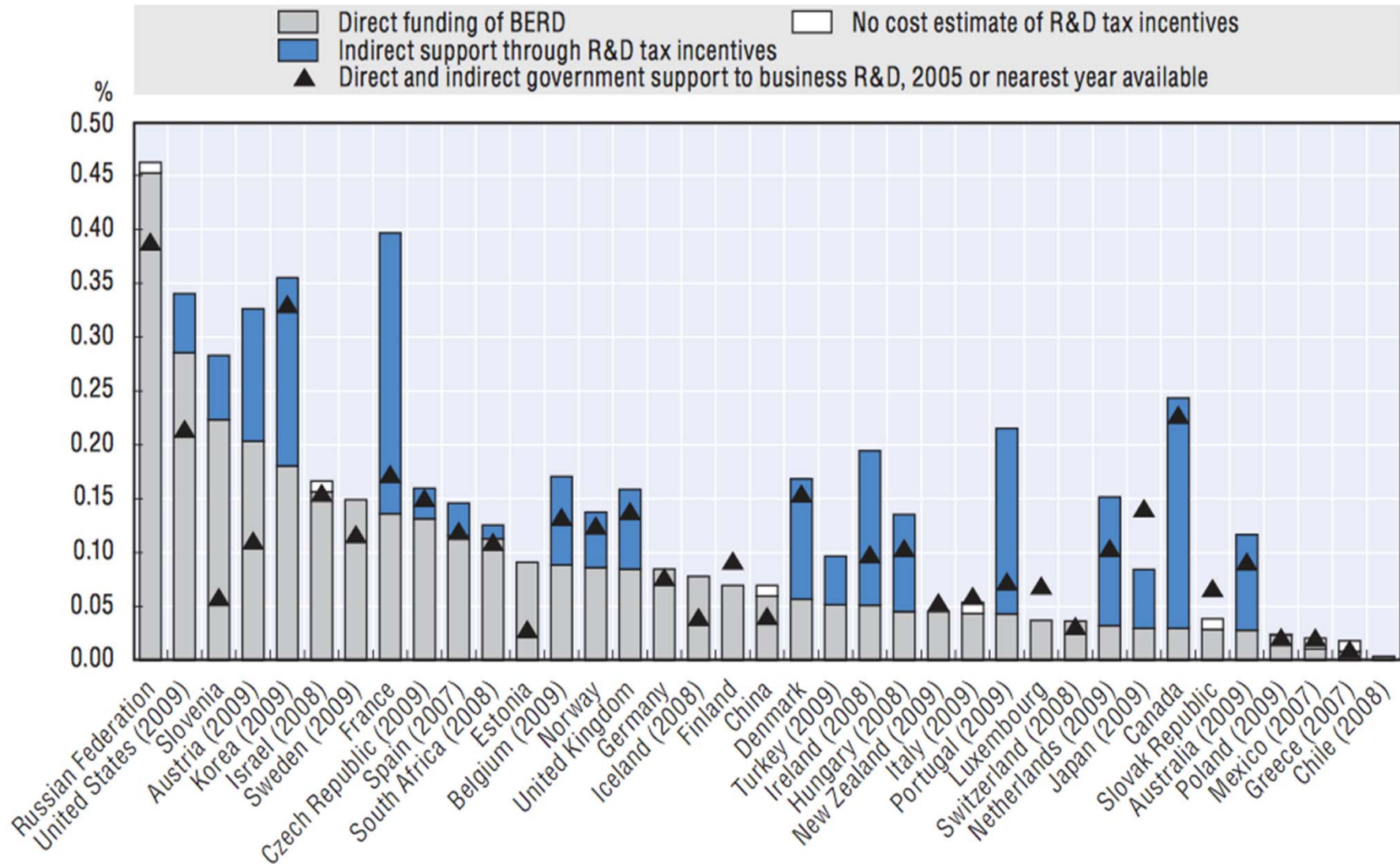


National Institutes of Health budgets 1936-2011



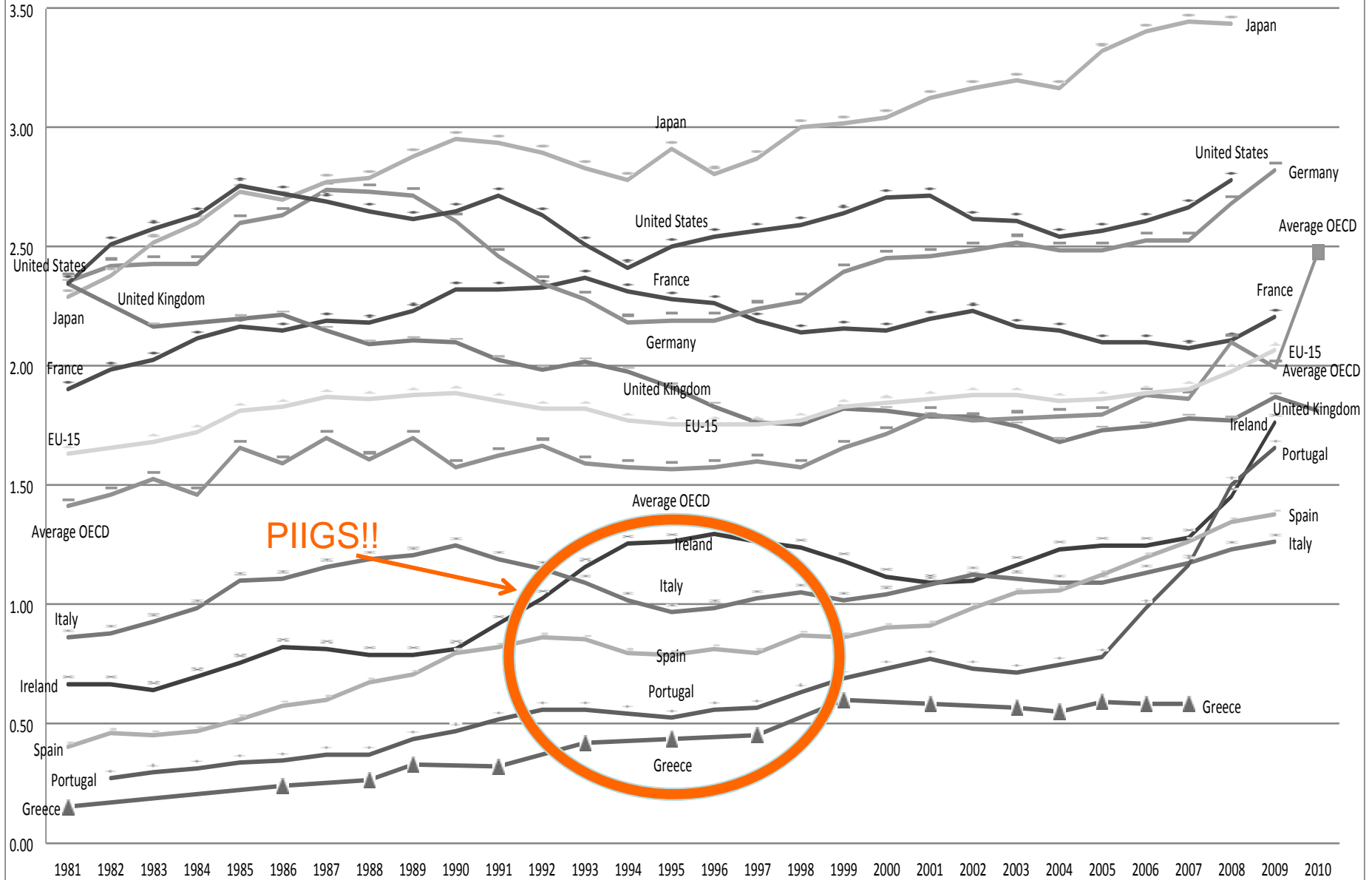
Direct government funding of business R&D and tax incentives for R&D, 2010

As a percentage of GDP

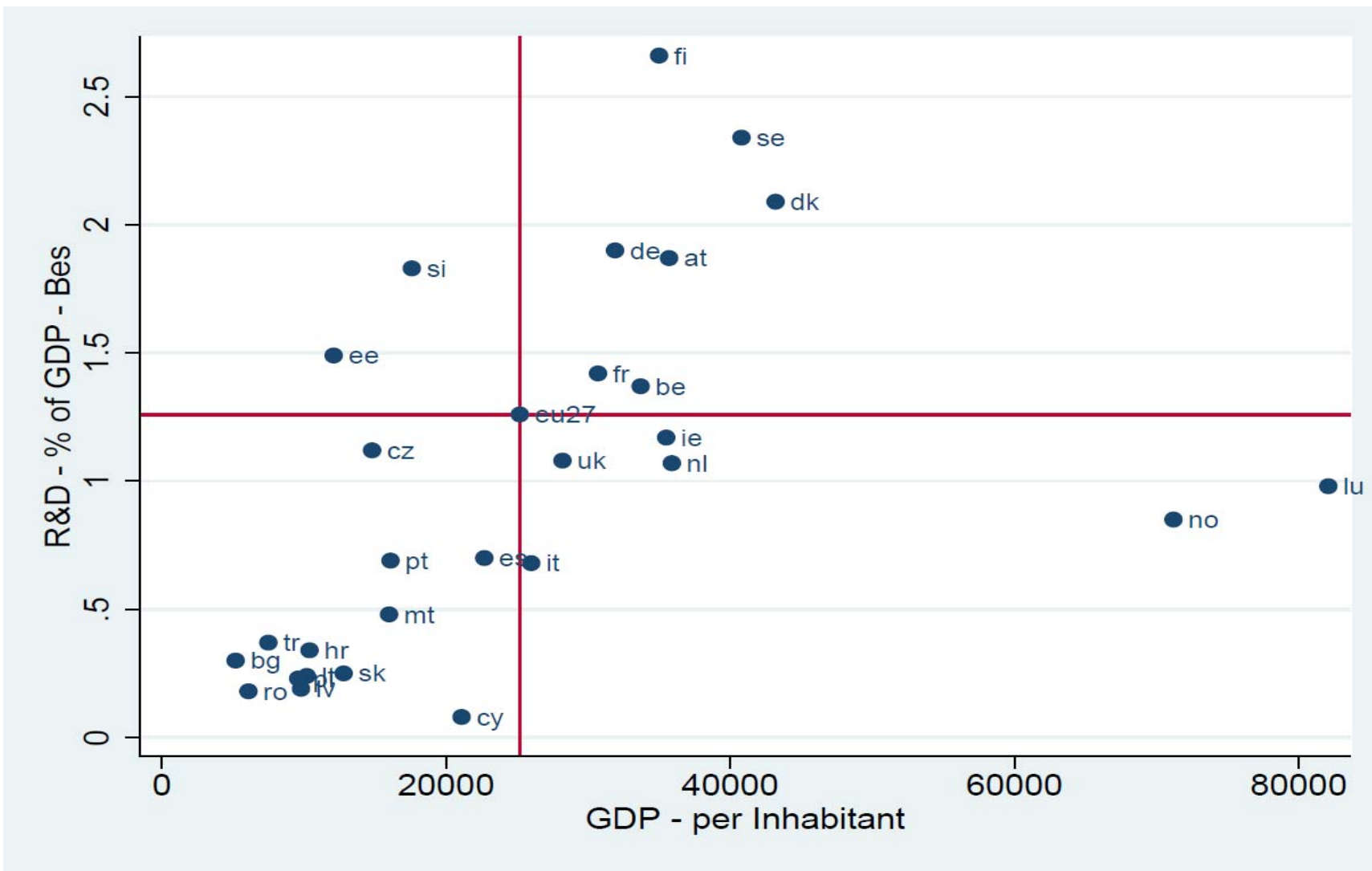


Source: OECD 2012 <http://www.oecd.org/sti/sti-outlook-2012-financing-business-rd.pdf>

GERD as a percentage of GDP



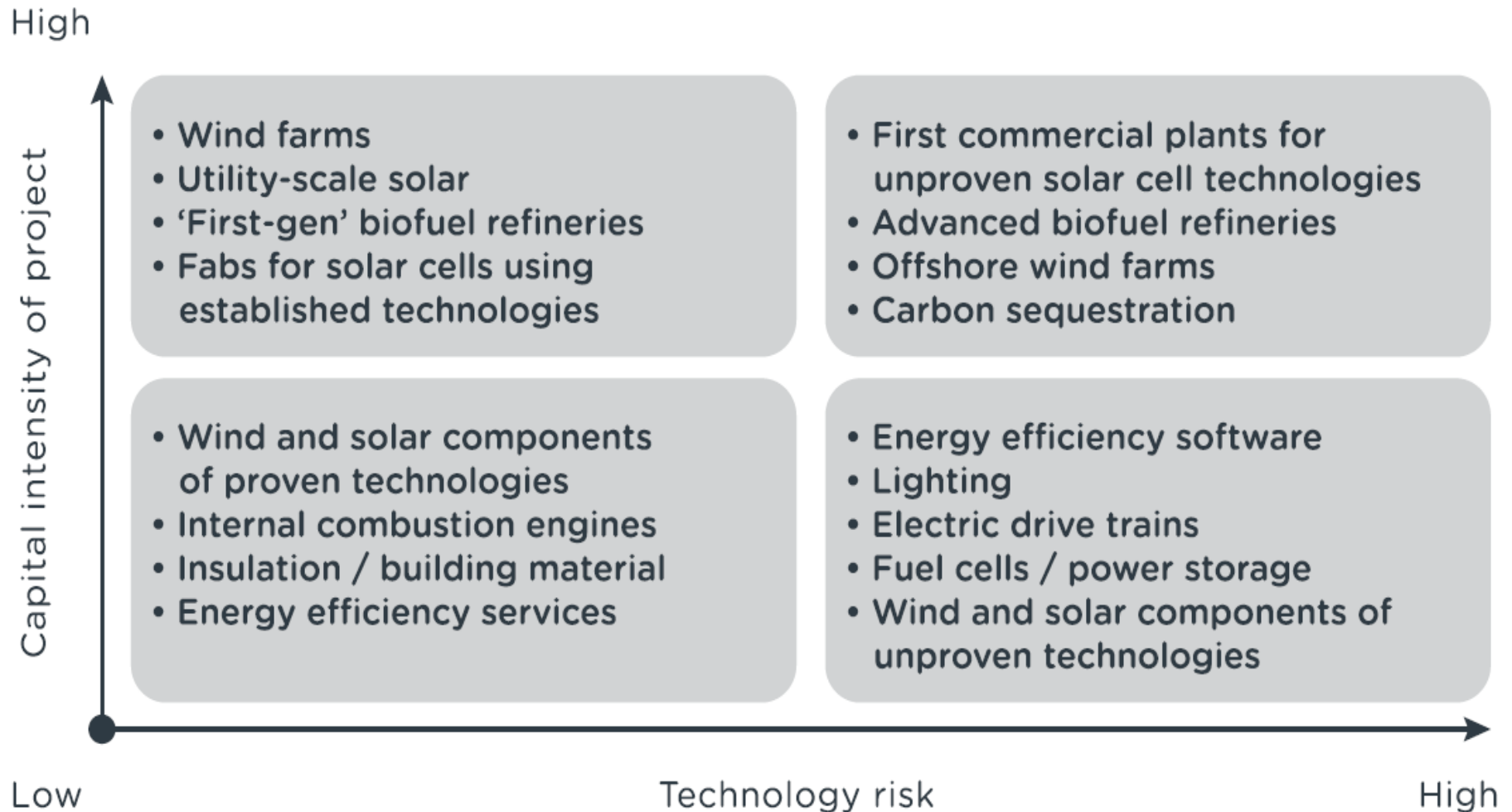
Business R&D spending across Europe



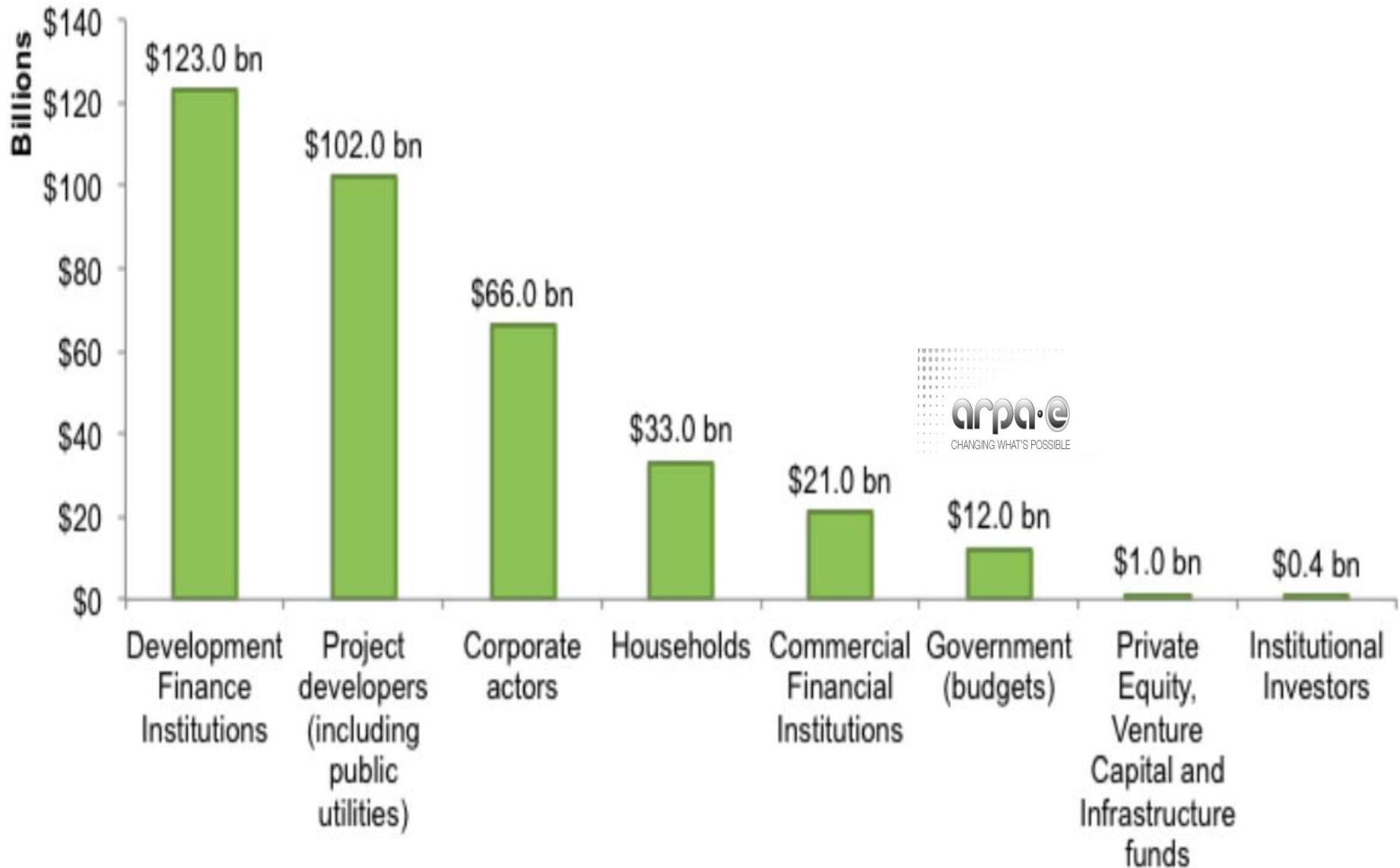
Who is funding the 'next big' green thing?
(understanding green as a 'direction')

Technology risk in clean tech

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

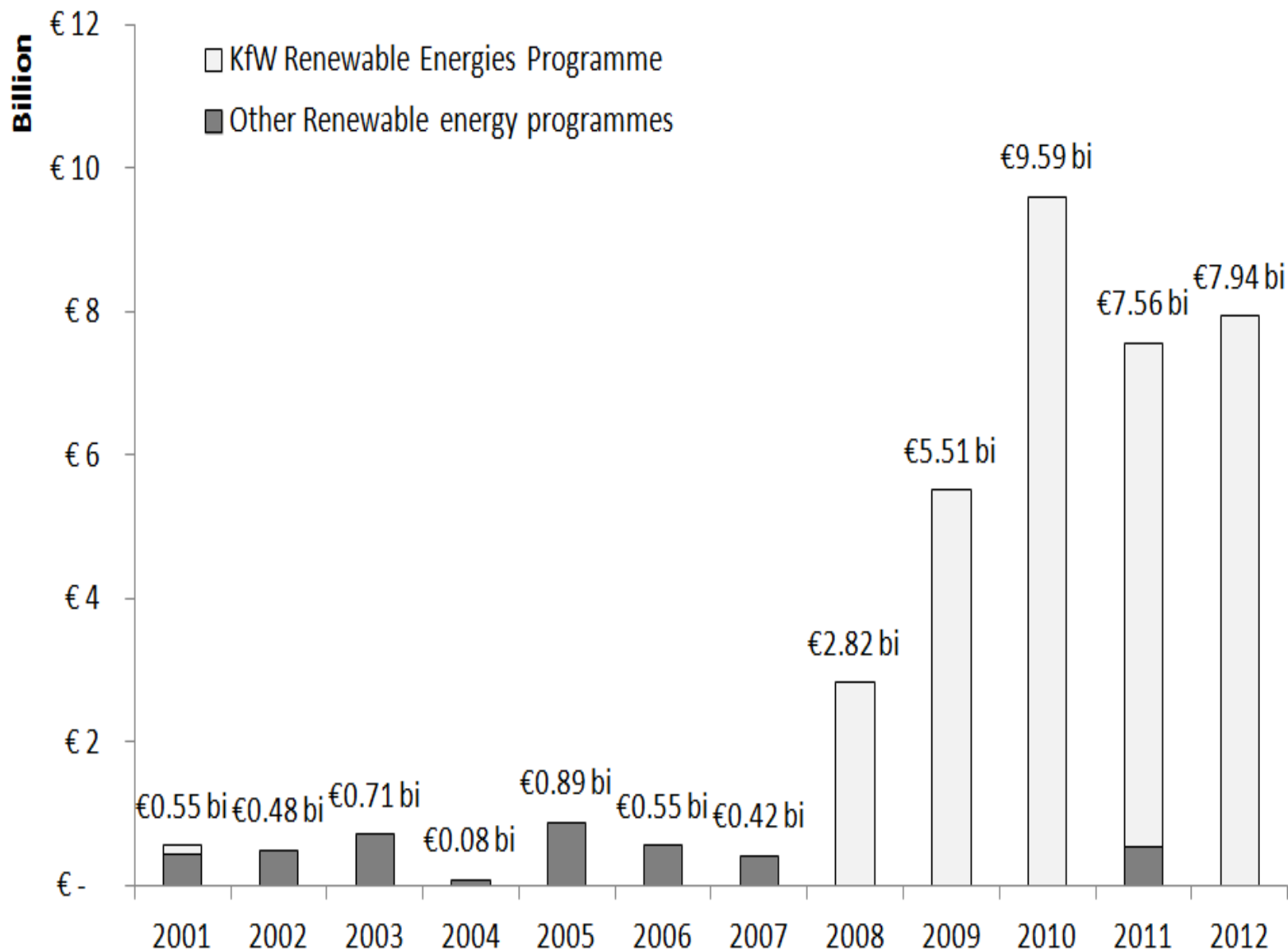


Green tech public & private investments (2011)



Source: Bloomberg New Energy Finance

KfW funding for industrial environmental and climate protection projects in Germany 2001-2012



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



Source:
<http://www.youtube.com/watch?v=x54bVuduggU>

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.

Symbiotic vs. *Parasitic* Eco-systems

AEIC IN 2010:

Asked US government to spend
\$16 billion/yr. in clean tech

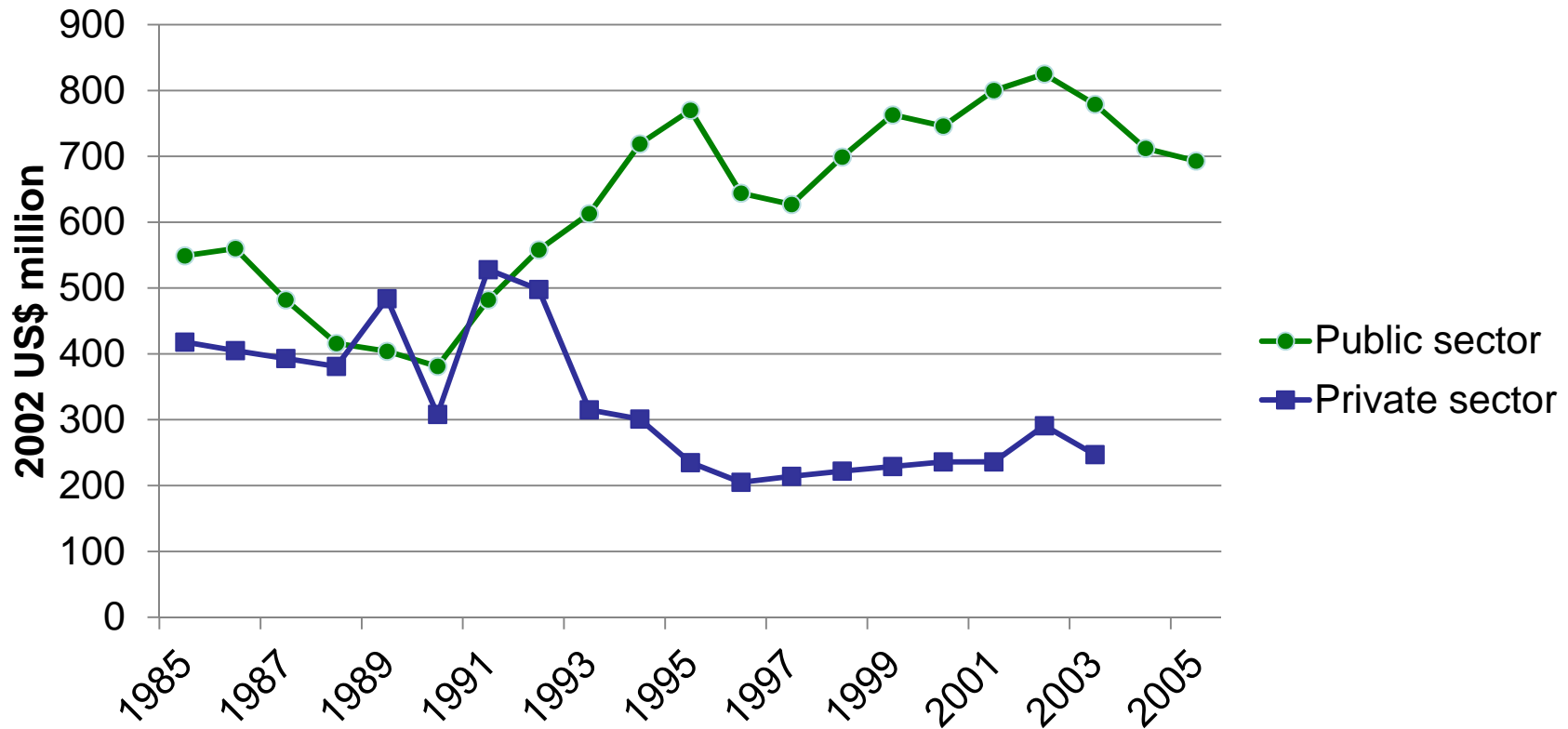
Plus an additional \$1 billion to ARPA-E
(Advanced Research Projects Agency for
Energy)

Between 2001-2010:

The 7 companies that form AEIC
spent \$237 billion on stock repurchases

Where are energy's Xerox Parcs & Bell Labs?

Renewable energy R&D investments in the U.S.
in million 2002 dollars

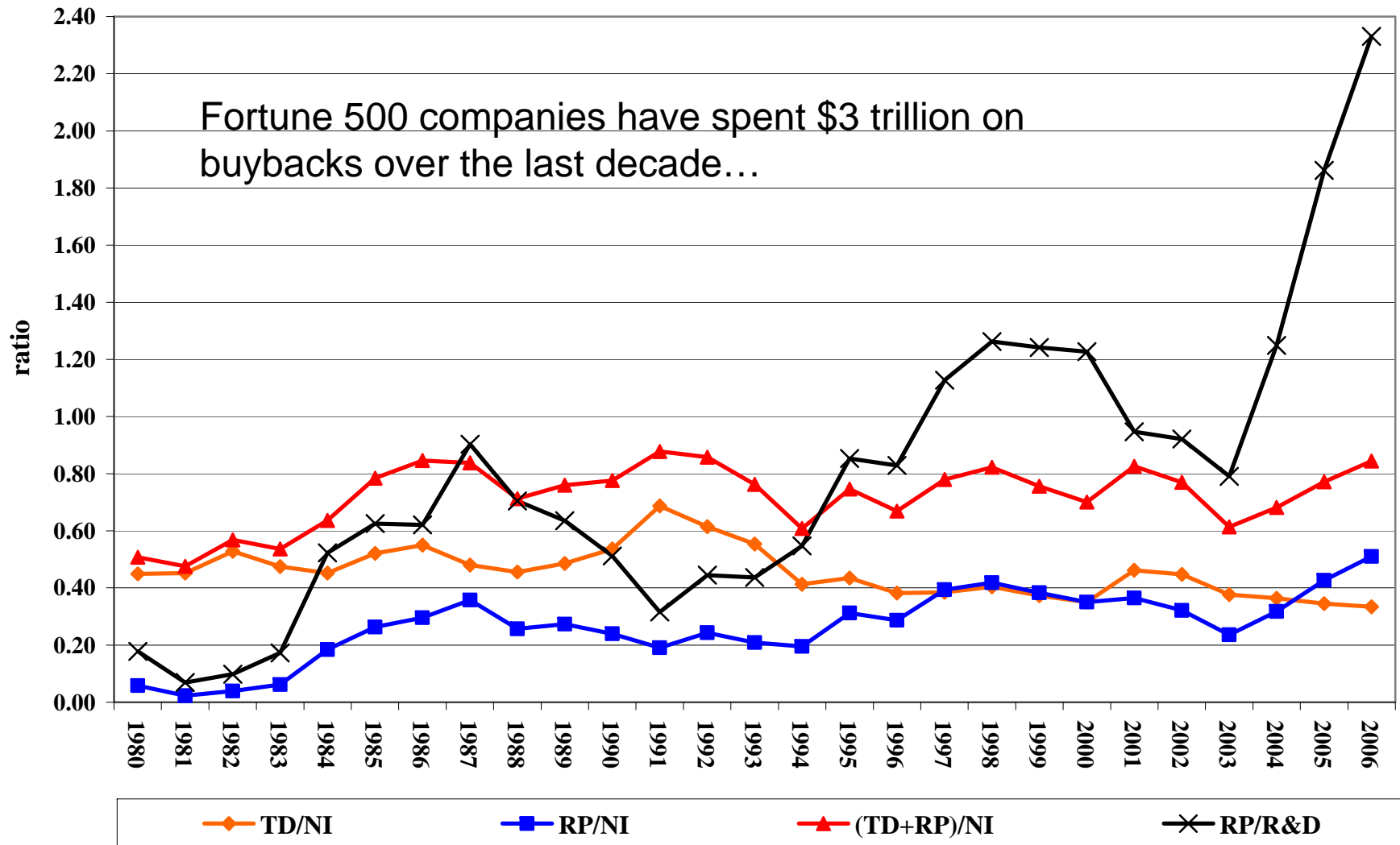


Source: Nemet and Kammen (2007), "U.S. energy research and development: Declining investment, increasing need, and the feasibility of expansion", *Energy Policy*, 35 (1), 746-755

From 'de-risking' to
sharing both risks and rewards

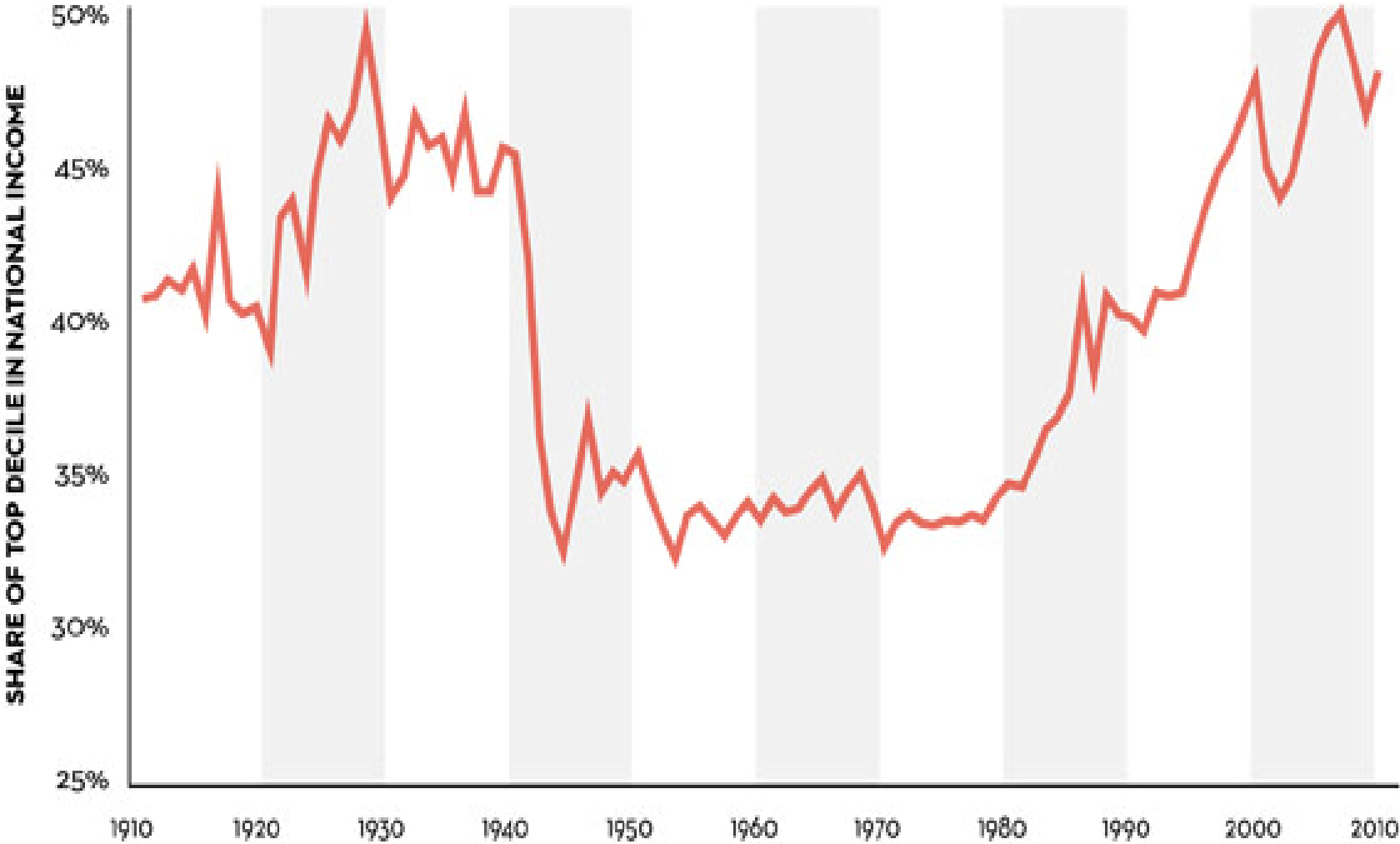
Repurchases, dividends, net income, R&D 1980-2006

(293 corporations in the S&P500 in October 2007 in operation in 1980)



Source: Lazonick, 2014

INCOME INEQUALITY IN THE UNITED STATES, 1910-2010

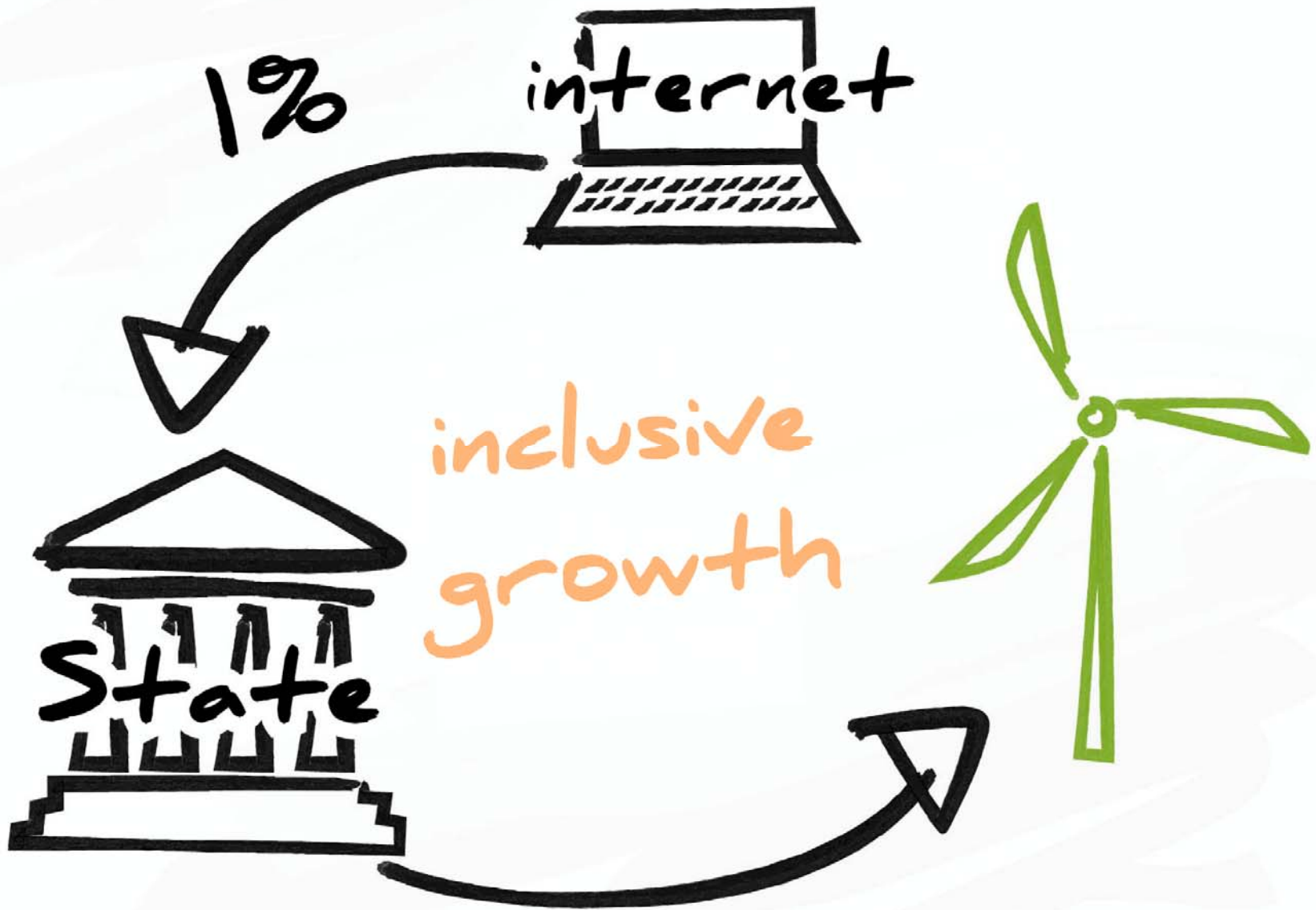


Source: Piketty, 2013

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.”

And....why did capital gains fall in 1976?



New questions for economic policy

- ◆ **DIRECTIONS.** How to think about public sector *directionality*?
- ◆ **EVALUATION.** How to evaluate public sector market creating investments (pushing market frontiers)?
- ◆ **EXPLORATIVE ORGANIZATIONS.** How to build explorative public sector organizations that welcome trial and error?
- ◆ **RISKS AND REWARDS.** How to socialize both risks and rewards, with revolving fund for future innovation and welfare.

think again!



private sector

vs.



public sector