

Financial Institutions for Innovation and Development

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Finance, innovation, and growth

FINNOV, the project, was a European Commission-funded research collaboration between seven European academic institutions aimed at understanding the relationship between changing financial markets, innovation dynamics, and economic performance.

FINNOV, the ongoing initiative, seeks to bring together the academics and policy-makers who can figure out how to make financial institutions support “smart inclusive growth”

theAIRnet

The Academic-Industry Research Network – theAIRnet – is devoted to the proposition that a sound understanding of the dynamics of industrial development requires collaboration between academic scholars and industry experts.

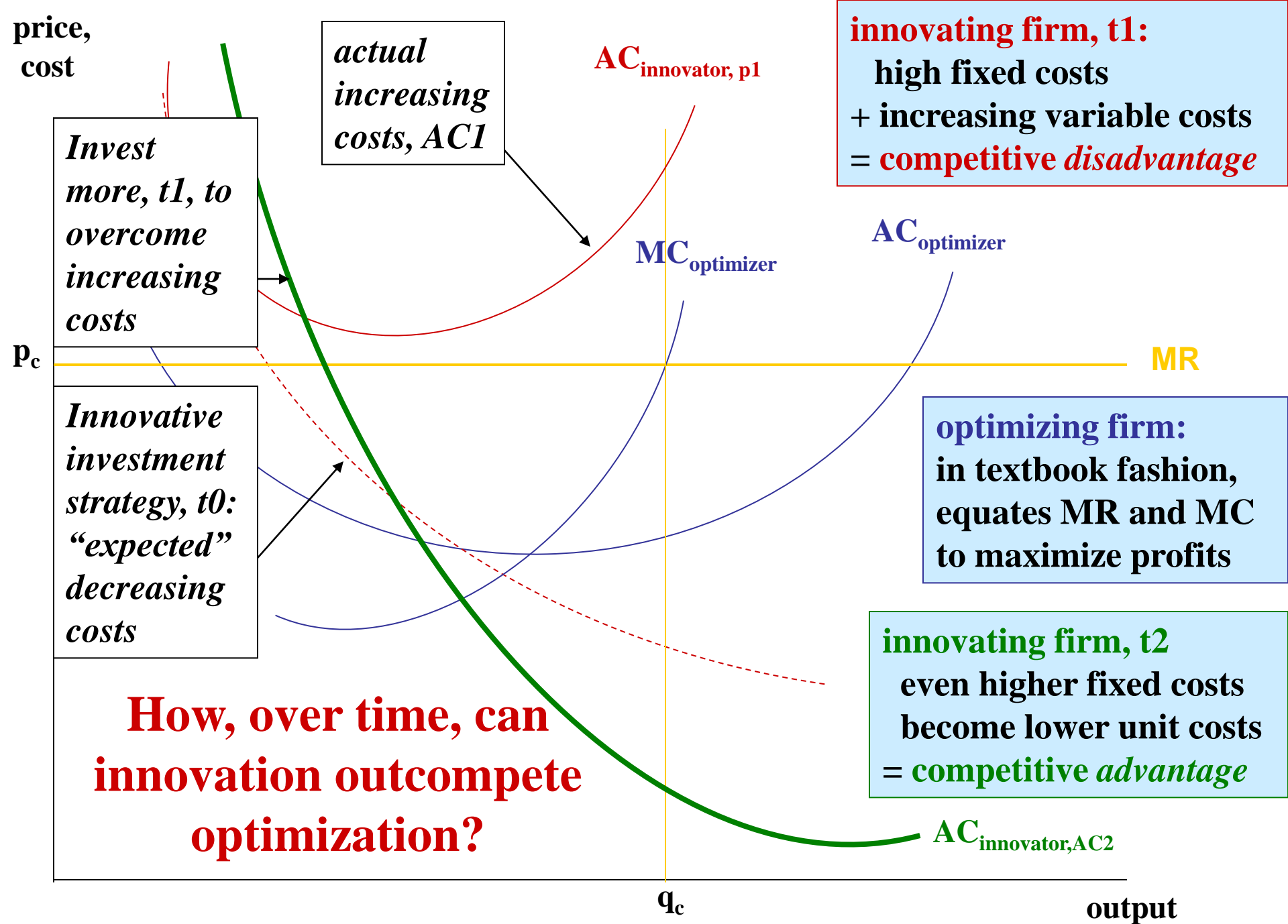
We engage in up-to-date, in-depth, and incisive research and commentary on issues related to industrial innovation and economic development.

Our goal is to understand the ways in which, through innovation, businesses and governments can contribute to equitable and stable economic growth – or what we call “sustainable prosperity”.

Financial institutions for innovation and development

Project funded by the Ford Foundation

- Innovation: the processes that generate higher quality, lower cost products at prevailing factor prices**
- Innovation creates the possibility for growth in per capita incomes, but that growth may be inequitably distributed across the population and unstable over time.**
- A prime challenge for legislators and policy-makers concerned with economic development is to structure financial institutions so that they support innovation in ways that contribute to equitable and stable growth.**



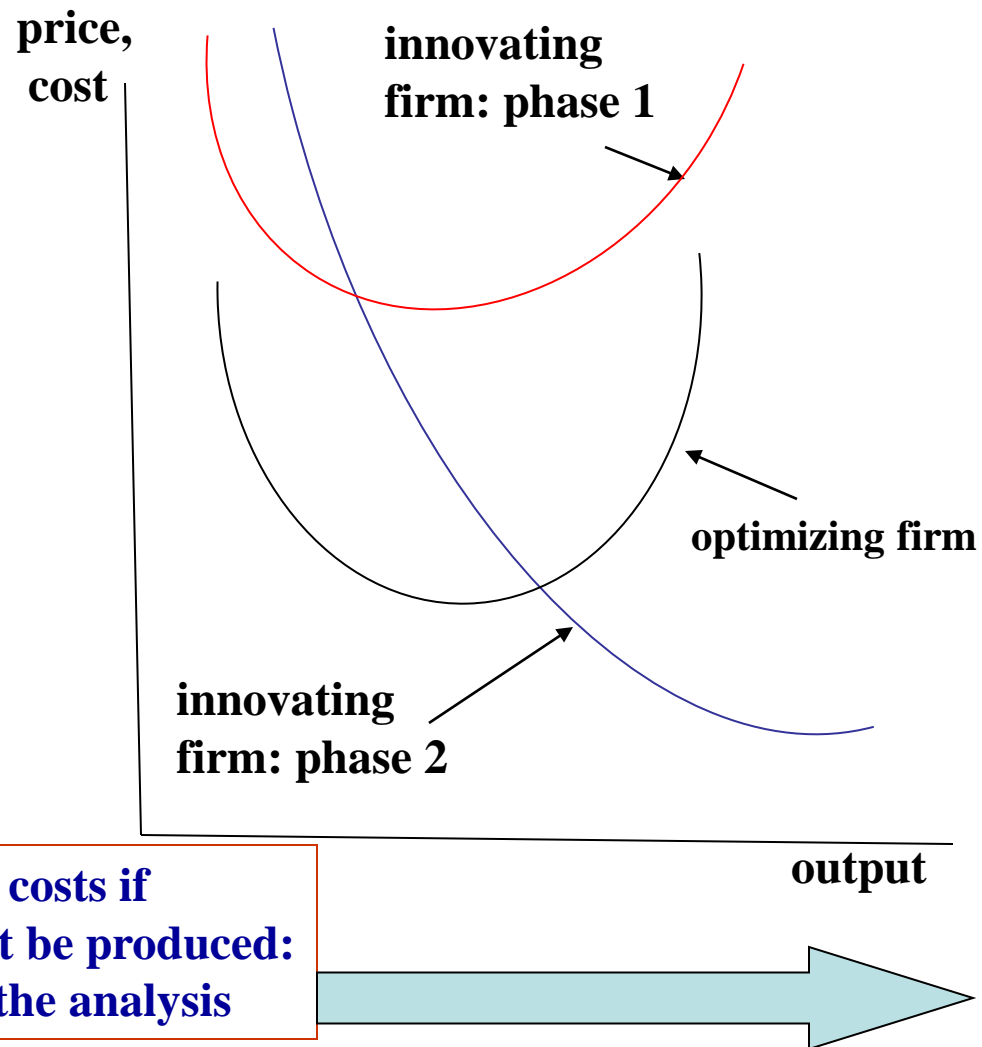
Strategy, organization and finance in the theory of the innovating firm

Strategy: *innovation is uncertain* - the abilities and incentives of the strategic decision-maker are of critical importance to the types of investments that are made

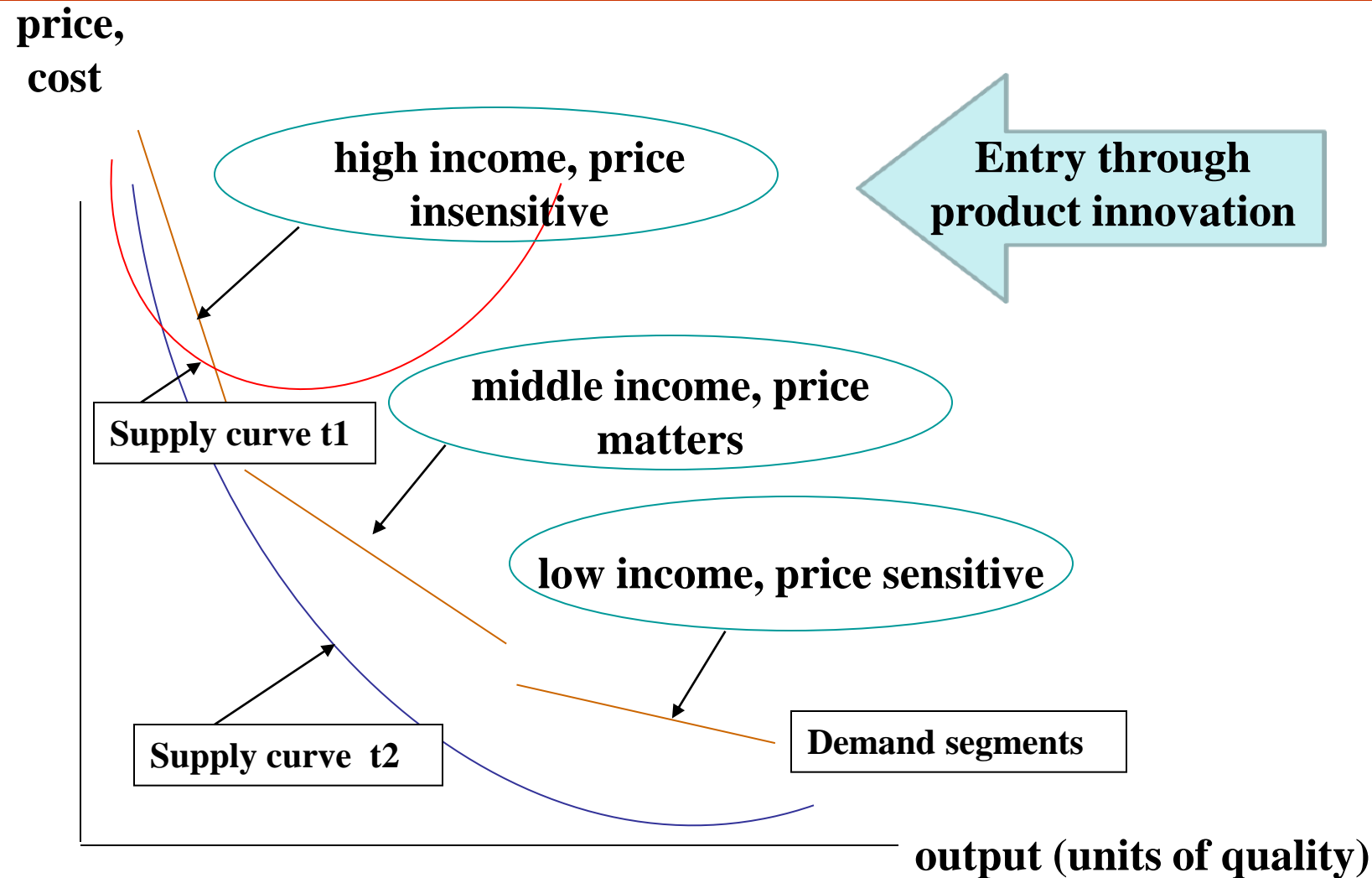
Organization: *innovation is collective* – development & utilization of productive resources requires integration of a hierarchical and functional division of labor

Finance: *innovation is cumulative* – committed finance (“patient capital”) is needed to sustain the innovation process until it generates financial returns

Innovative strategy only results in low units costs if products can be sold; otherwise they will not be produced: need to bring **product market demand** into the analysis



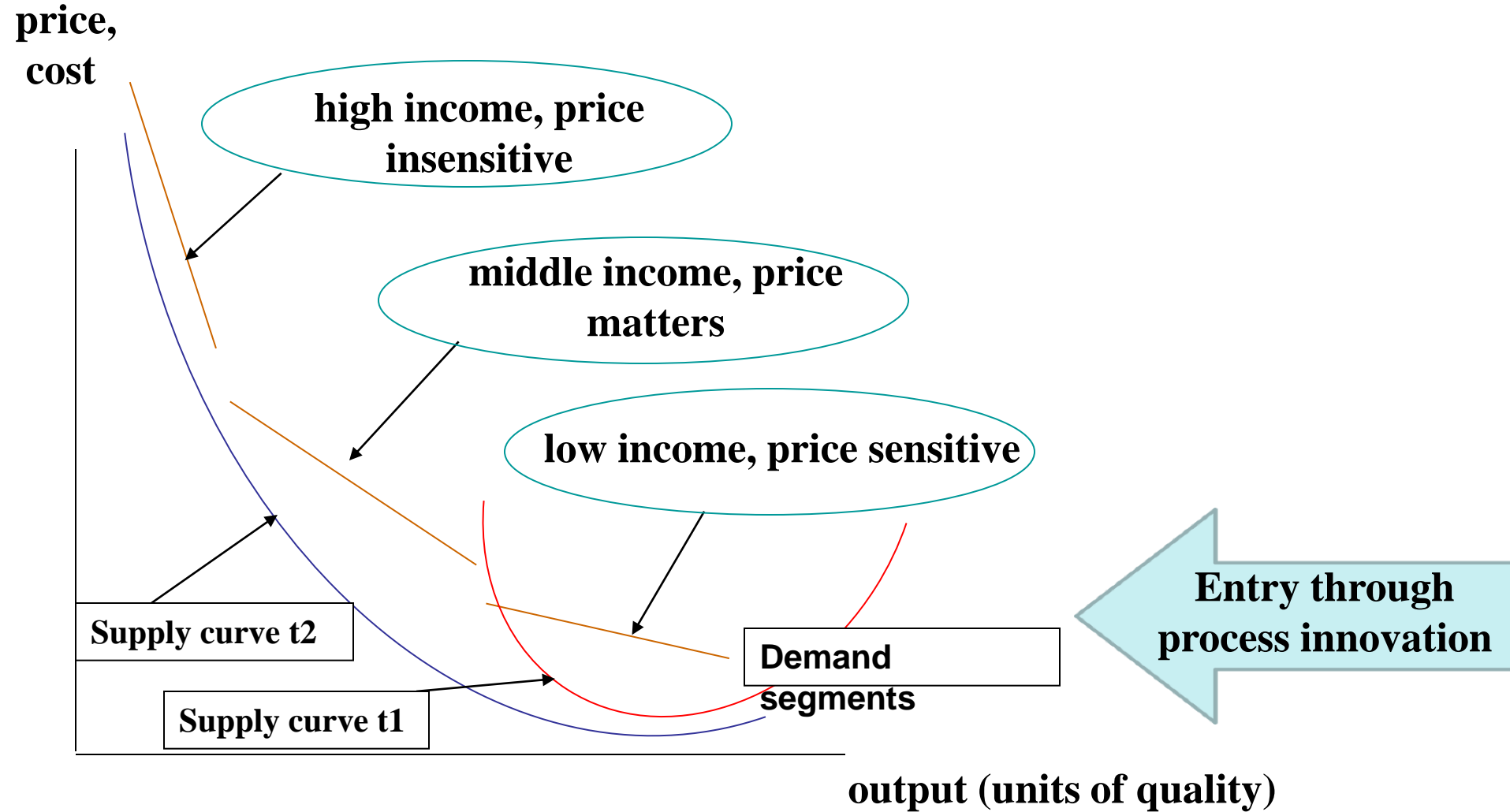
Accessing market segments: product innovation



What is the source of high income demand?

For example: integrated circuits - military; jet engines - military; calculators - engineers; orphan drugs – national healthcare system

Accessing market segments: product innovation



Key to the **indigenous innovation** strategies of developing countries: e.g., Japan from 1950s, Korea from 1980s, China from 1990s

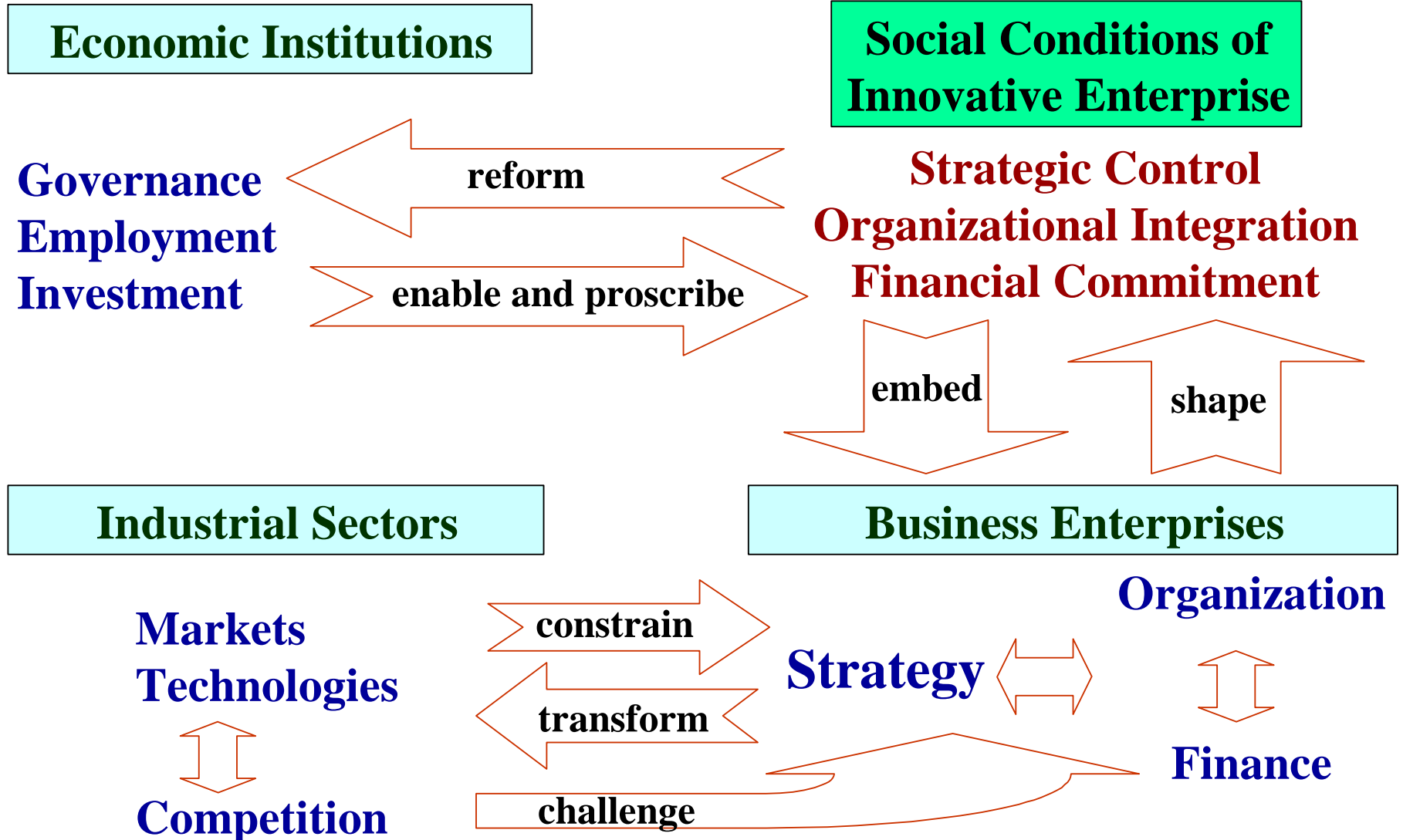
Social conditions of innovative enterprise

- **Strategic control:** a set of relations that gives decision-makers the power to allocate the firm's resources to confront *uncertainty* by transforming technologies and markets to generate higher quality, lower cost products
- **Organizational integration:** a set of relations that create incentives for people to apply their skills and efforts to engage in *collective* learning
- **Financial commitment:** a set of relations that secure the allocation of money to sustain the *cumulative* innovation process until it generates financial returns

What are financial institutions?

We construe the relevant financial institutions to include not only securities markets, the banking system, prevailing tax regimes and foreign direct investment but also government spending on the knowledge base and physical infrastructure that can serve as inputs into the innovation process at the business level as well as government subsidies to businesses that promote the development and utilization of innovative products.

Institutions enterprises, and sectors



National institutions and business organizations in the innovation process

Governance institutions and strategic control:

What are the rights and responsibilities that govern the allocation of productive resources (labor and capital) in the economy? Where in the economy is control over allocation decisions located? What are the social processes that monitor, sanction, and reform such control?

Employment institutions and organizational integration:

To whom does society provide education, training, and access to research? Through what organizations? For what purposes? Who pays? How do people get jobs? With what expectations of rewards over what time frame? Are careers within or across firms?

Investment institutions and financial commitment:

How are financial resources mobilized in the economy for investments in productive resources? From what sources? On what terms? With what expected returns?

Innovation: *potential* for sustainable prosperity

By creating new sources of value (embodied in higher quality, lower cost products), the innovative enterprise makes it possible (but by no means inevitable) that, simultaneously, *all participants in the economy can gain*:

- **Employees:** Higher pay, better work conditions
- **Creditors:** More secure paper
- **Shareholders:** Higher dividends or share prices
- **Government:** Higher taxes
- **The Firm:** Stronger balance sheet

AND

- **Consumers:** Higher quality, lower cost products

What is the role of finance in innovation?

Need to embed “finance” in a theory of innovative enterprise

- **“social conditions of innovative enterprise”**

- strategic control: an uncertain process**

- organizational integration: a collective process**

- financial commitment: a cumulative process**

- **Those who have the incentive and ability to exercise strategic control have to have access to financial resources to fund the collective and cumulative innovation process.**

- **Financing organizational learning, i.e., investing in people, is much more difficult than financing physical infrastructure.**

- **For a business, human capital can walk out the door, and for a government, human capital can leave the country.**

What are the sources of financial commitment?

- **Supportive households:** fundamental to developing the labor force, and increasing burden of doing so – what happens to people who do not have supportive households? And what happens when more and more households do not have the “good jobs” that enable them to be supportive?
- **Innovative businesses:** “retain and reinvest” – retain people and retain profits – what happens when enterprises engage in “downsize and distribute”?
- **Developmental governments:** a progressive tax regime (taps the incomes of supportive households and innovative enterprises) – what happens when an ideology prevails that says that households and businesses do better without government taxation and spending

Mistaking value extraction for value creation

- **In some times and places, the objectives of business enterprises may be to generate the higher quality, lower cost products that can be the foundation for equitable and stable economic growth.**
- **But business interests may use financial institutions in ways that generate instability and inequity. A case in point is the speculative promotion of startups in the “dot.com” boom of the late 1990s, with the US venture capital industry and Wall Street banks playing active and important roles.**
- **So too is the way in which, in the name of selling “innovative” derivative products, US banking interests shaped the governance, organization, and operation of US mortgage institutions, culminating in the financial meltdown of 2008.**

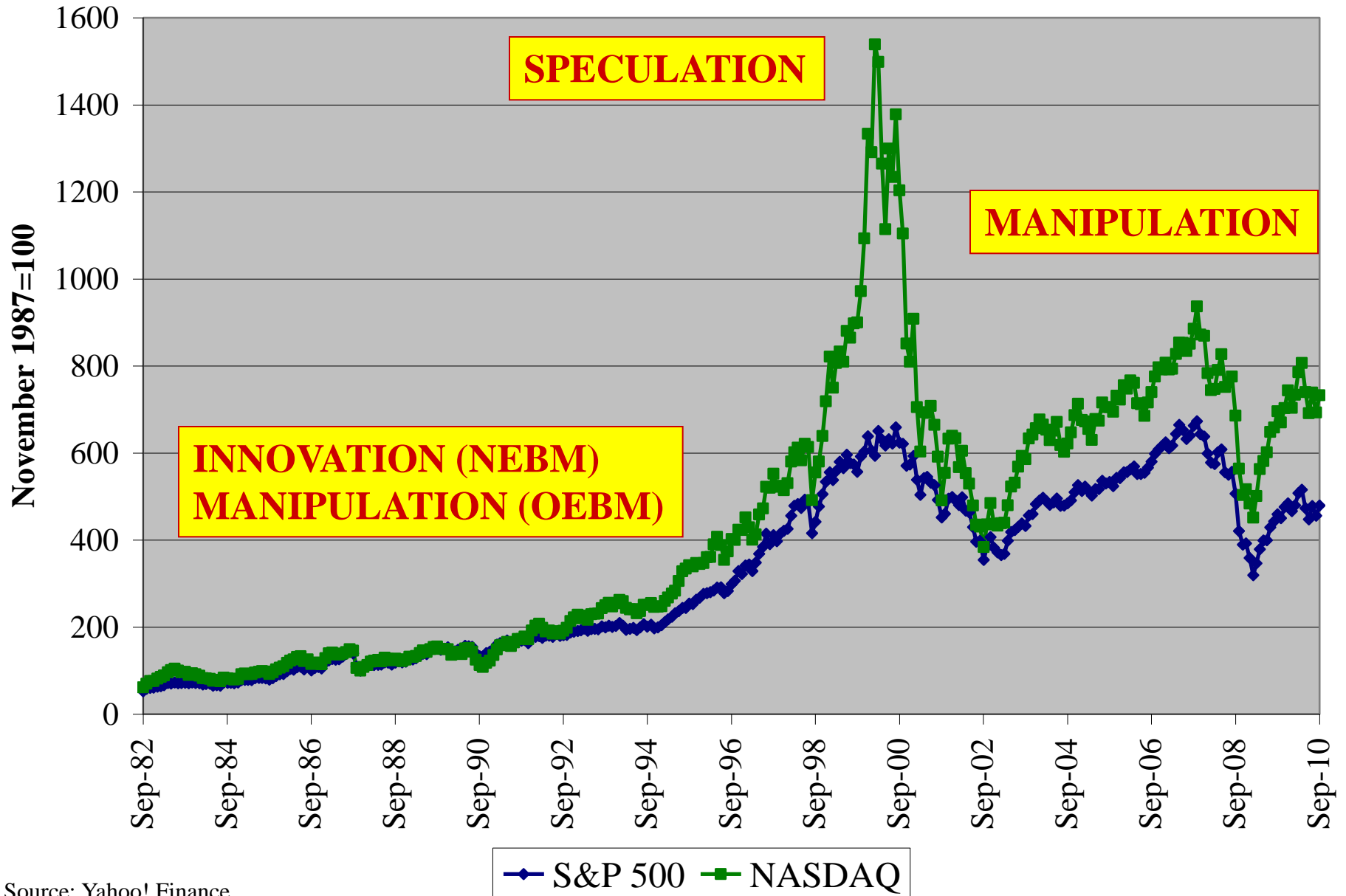
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The stock market and innovative enterprise

Funded by the Institute for New Economic Thinking

- **The stock market functions much more as an institution for value extraction rather than value creation**
- **The theory of innovative enterprise provides the foundation for a critique of the prevailing ideology that, through the “maximization of shareholder value”, corporate resource allocation contributes to the superior performance of the economy as a whole.**
- **This research further our understanding of the interaction of corporate resource allocation decisions and stock-price movements, and thereby shed light on economic perspectives on the stock market such as the efficient market hypothesis, behavioral finance, information asymmetries, and financial instability.**

Drivers of the stock market: Innovation, speculation, manipulation



The functions of the stock market

- **Creation (financial commitment)**
- **Control (strategic control)**
- **Combination (strategic control)**
- **Compensation (organizational integration)**
- **Cash (financial commitment)**

Who takes the risks? Who get the rewards?

New paper by Lazonick and Mazzucato

- The collective, cumulative and uncertain character of the innovation process means that some actors in positions of strategic control can position themselves to **extract value that they did not create.**
- They use a combination of social power and market manipulation to accomplish this feat.
- A prime example is the remuneration of top executives of US corporations.
- The ideology used to justify this value extraction is **“maximizing shareholder value”**, rooted in the false claim that, among all the participants in the corporation, only shareholders bear risk, and hence all returns to risk (profits) belong to shareholders. **Taxpayers and workers bear risk.**

SUSTAINABLE PROSPERITY IN THE NEW ECONOMY?



Business Organization and High-Tech
Employment in the United States

WILLIAM LAZONICK

The shift from the Old Economy business model (OEBM) to the New Economy business model (NEBM) has resulted in a highly financialized US corporate economy that contributes to inequity and instability, and threatens economic growth

Published in September 2009 by the
Upjohn Institute for Employment Research

- 1. What is New, and Permanent, about the “New Economy”?**
- 2. The Rise of the New Economy Business Model**
- 3. The Demise of the Old Economy Business Model**
- 4. Pensions and Unions in the New Economy**
- 5. Globalization of the High-Tech Labor Force**
- 6. The Quest for Shareholder Value**
- 7. Prospects for Sustainable Prosperity**

A greatly increased role of the stock market in allocating capital and labor in NEBM compared with OEBM

	OEBM	NEBM
Strategy, product	Growth by building on internal capabilities; business expansion in product markets based on related technologies; geographic expansion; access national product markets	Firm entry into specialized markets; sale of branded products; system integrators; acquisition of new capabilities by technology firms
Strategy, process	Corporate R&D labs; patenting of proprietary technologies; vertical integration of value chain, at home and abroad	Cross-licensing technology based on open systems; specialization of the value chain; outsourcing and off-shoring
Finance	Venture capital; personal savings, family business associates; NYSE listing; payment of steady dividends; reliance on retentions; supplemented with bond issues.	Venture capital; NASDAQ listing; low or no dividends; growth from retentions plus stock as acquisition currency; stock buybacks to support stock price.
Organization	Secure employment: career company; salaried/hourly employees; unions; defined-benefit pensions; employer-funded medical insurance in employment and retirement.	Insecure employment: interfirm mobility of labor; broad-based stock options; non-union; defined-contribution pensions; employee bears greater burden of medical insurance.

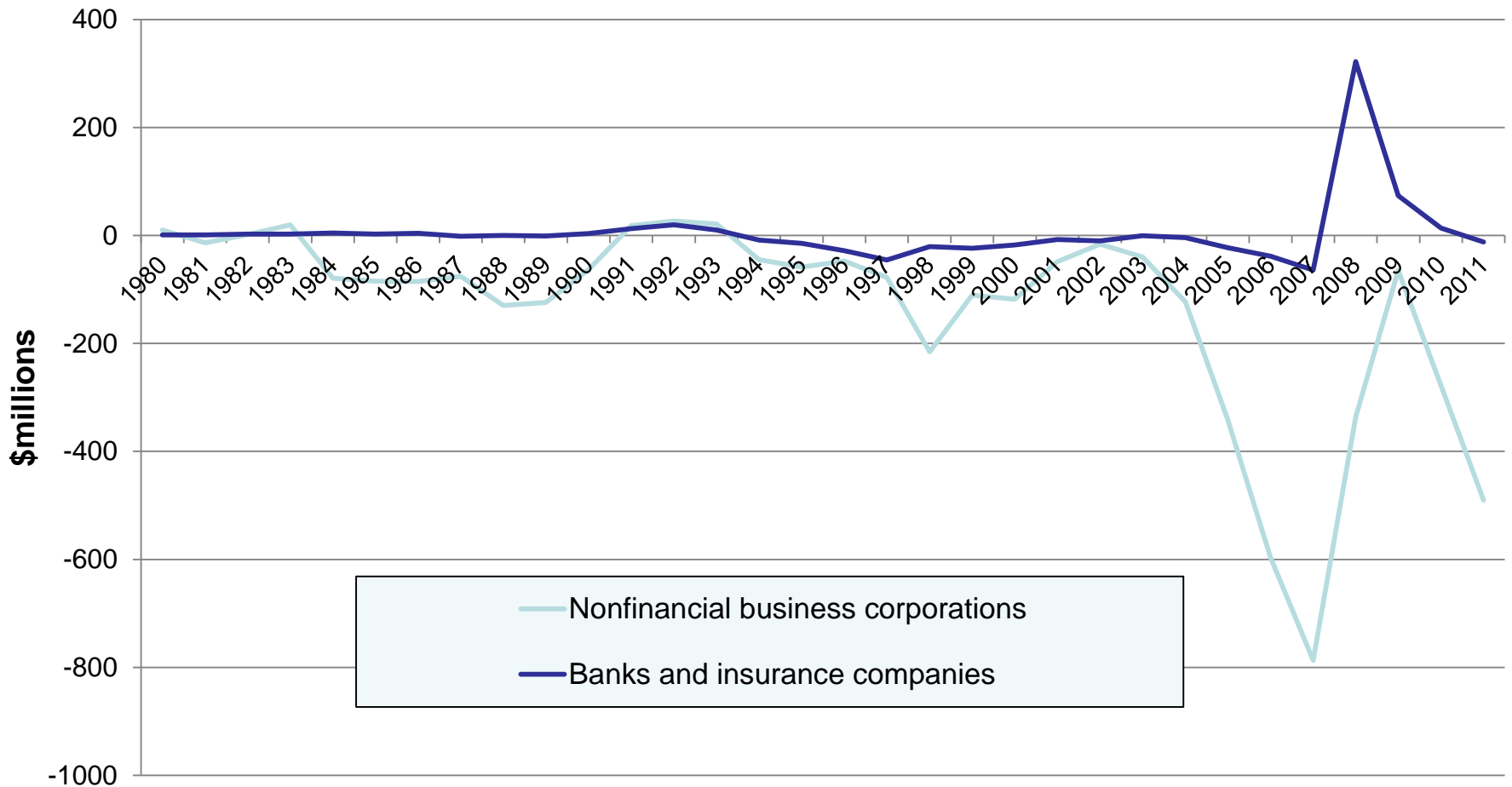
OEBM: The stock market is only important for the separation of ownership and control

NEBM: Five functions of the stock market: creation, control, combination, compensation, cash

US corporations finance the stock market (not vice versa)

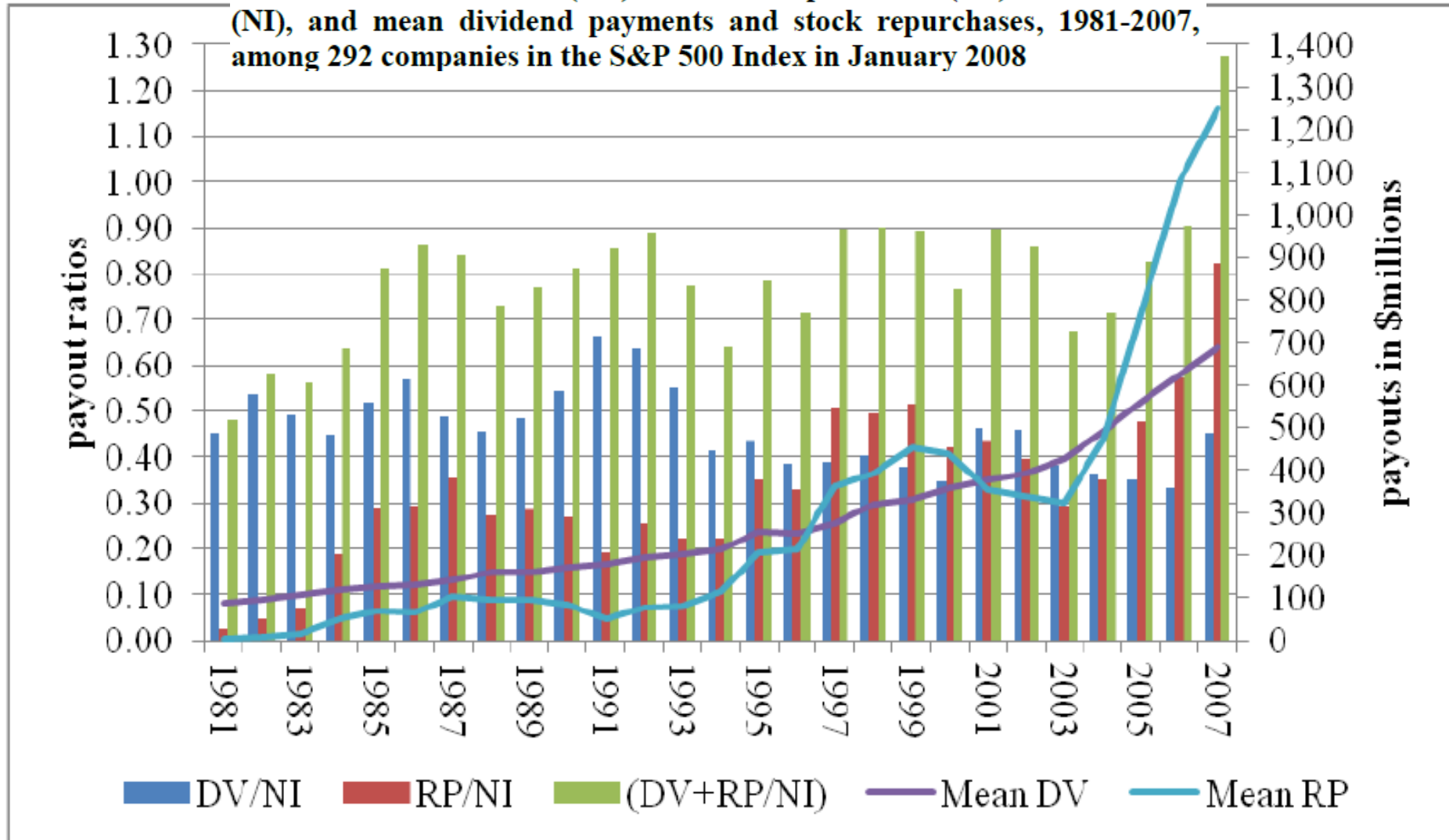
Net equity issues, U.S. nonfinancial corporations and
U.S. banks and insurance companies,
1980-2011

Federal Reserve Flow of Funds



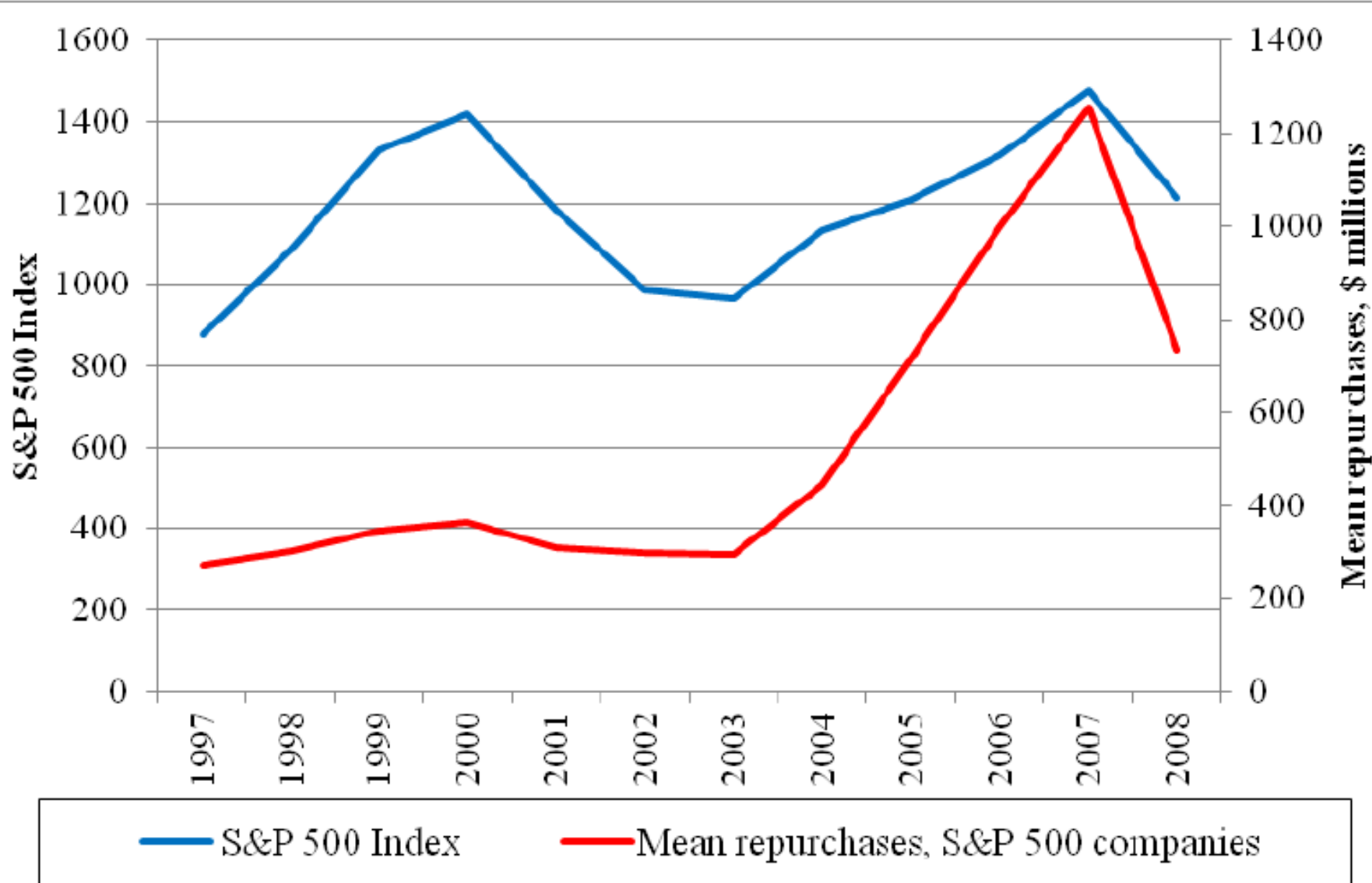
Increasing use of stock buybacks to manipulate the market

Ratios of cash dividends (DV) and stock repurchases (RP) to net income (NI), and mean dividend payments and stock repurchases, 1981-2007, among 292 companies in the S&P 500 Index in January 2008



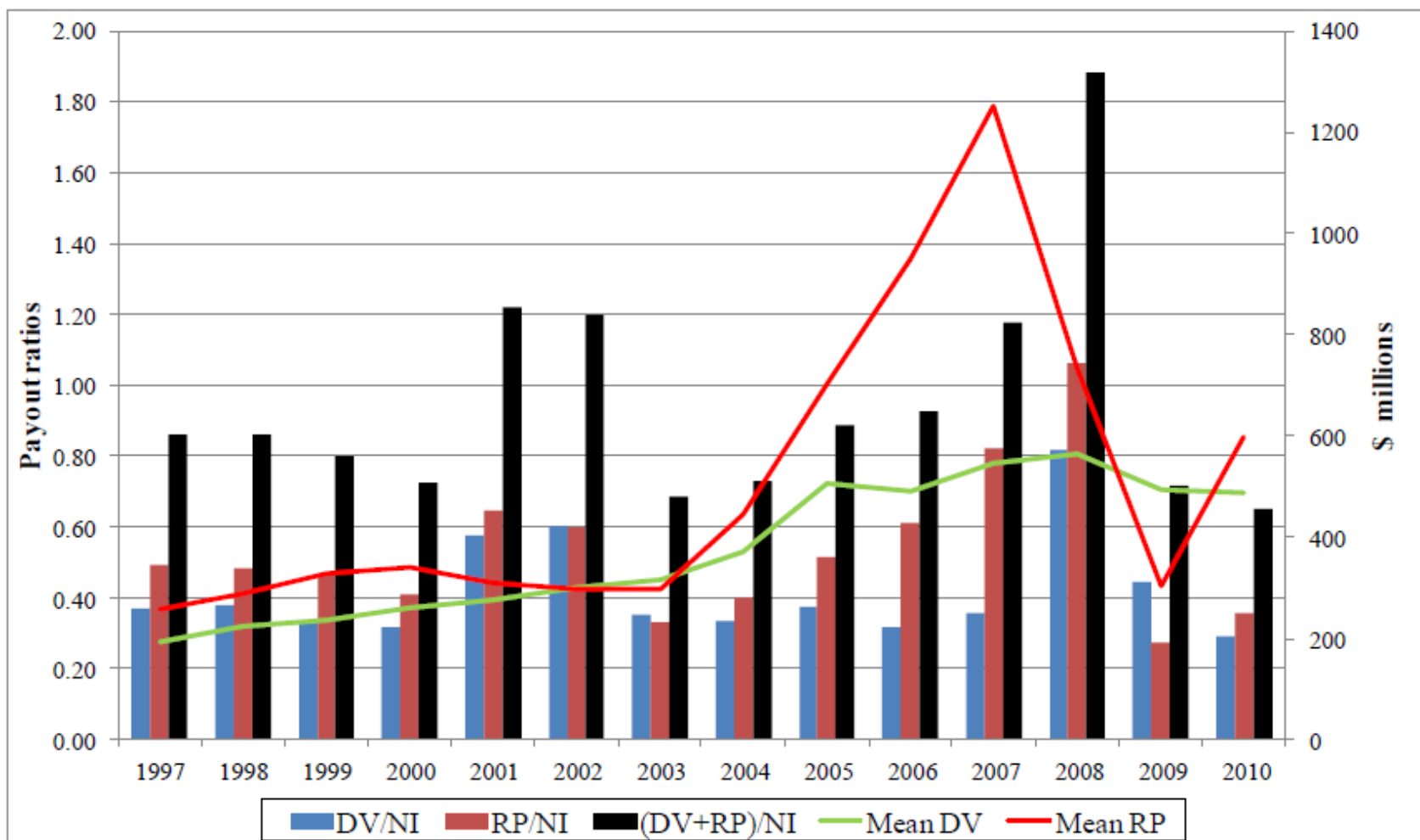
Sources: Standard & Poor's Compustat database (North America, Fundamentals Annual) and company 10-K filings.

Buybacks push the S&P 500 Index to a new peak in 2007



Sources: Standard and Poor's Compustat database (North America, Fundamentals Annual); Yahoo! Finance at <http://finance.yahoo.com> (Historical Prices, Monthly Data).

Buybacks of 419 S&P 500 companies, 1997-2010



Data for 419 corporations in the S&P 500 Index in January 2011 that were publicly listed 1997-2010. Data for companies that end their fiscal years during the first six months of the calendar year are attributed to the previous year.

RP, stock repurchases; DV, total dividends (common and preferred); NI, net income (after tax with inventory evaluation and capital consumption adjustments).

Sources: S&P Compustat database (North America, Fundamentals Annual, 1997-2010); company 10-K filings for missing or erroneous data from the Compustat database.

2011: The new run-up in stock buybacks

S&P Indices: S&P 500 Stock Buybacks Decrease for First Time Since Q2 2009: Third Quarter Success May Have Led to Fourth Quarter Pull Back [PRNewswire](#), March 28, 2012

NEW YORK, March 28, 2012 /PRNewswire via COMTEX/ -- S&P Indices announced today that preliminary results show that S&P 500 stock buybacks decreased 22.8% to \$91.5 billion during the fourth quarter of 2011, the first quarterly decline since the second quarter of 2009. For calendar year 2011, S&P 500 issues increased their buyback expenditures by 36.9% to \$409.0 billion from the \$298.8 billion posted in 2010....

Exxon Mobil continues to be the poster child for share repurchases spending \$5.4 billion on buybacks during the fourth quarter, slightly down from its \$5.5 billion share repurchase level for the third quarter. Trailing Exxon during the fourth quarter was Amgen with \$5.3 billion in buybacks, Intel with \$4.2 billion, International Business Machines with \$3.6 billion, and Pfizer with \$3.2 billion.

Industry color codes:

Petroleum	ICT	Consumer	Retail	Financial	Healthcare	Aerospace	Entertainment	Misc.
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Top 25 repurchasers, 2001-2010

RP rank	Company Name	Fortune rank 2010	Repurchases 2001-2010, \$b.	RP/NI %	DV/NI %	R&D% SALES	RP/R&D
1	EXXON MOBIL	2	174.5	62	26	0.3	22.8
2	MICROSOFT	38	110.0	89	49	15.2	1.6
3	IBM	18	89.2	91	18	5.7	1.7
4	CISCO SYSTEMS	62	65.0	130	0	14.8	1.5
5	PROCTER & GAMBLE	26	57.0	72	44	3.1	3.0
6	HEWLETT-PACKARD	11	54.0	116	18	3.8	1.6
7	WAL-MART STORES	1	52.6	46	24	0.0	nm
8	BANK OF AMERICA	9	52.1	51	63	0.0	nm
9	PFIZER	31	50.6	62	68	17.1	0.6
10	GENERAL ELECTRIC	6	48.5	29	52	1.9	1.7
11	INTEL	56	48.3	81	32	15.0	0.9
12	JOHNSON & JOHNSON	40	37.3	38	40	12.4	0.6
13	GOLDMAN SACHS	54	35.8	57	13	0.0	nm
14	CITIGROUP	14	32.2	38	72	0.0	nm
15	HOME DEPOT	30	30.9	75	27	0.0	nm
16	DELL	41	29.5	119	0	1.0	5.8
17	PEPSICO	43	28.8	62	39	0.7	11.3
18	AMGEN	163	28.8	105	0	25.1	1.0
19	TIME WARNER	95	28.7	-73	-13	0.3	28.2
20	UNITEDHEALTH GROUP	22	26.5	88	2	0.0	nm
21	CHEVRON	3	26.0	20	32	0.3	6.2
22	AT&T	12	25.5	27	68	0.6	5.2
23	DISNEY	55	24.9	90	19	0.0	nm
24	ORACLE	96	22.4	52	5	12.4	1.0
25	CONOCOPHILLIPS	4	22.0	40	34	0.1	13.0

Japan: The Institutional Triad

William Lazonick “The Institutional Triad and Japanese Development,” [translated into Japanese] in Glenn Hook and Akira Kudo, eds., The Contemporary Japanese Enterprise, Yukikaku Publishing, 2005, Volume 1: 55-82.

- **Stable shareholding and strategic control**
- **Permanent employment and organizational integration**
- **Main bank lending and financial commitment**

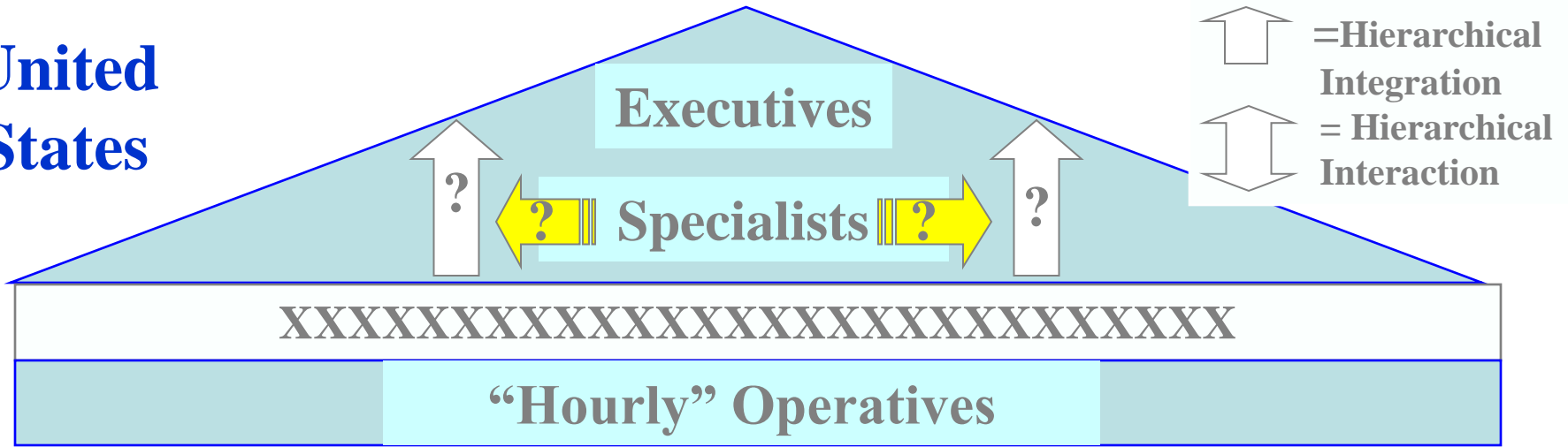
Japan perfected the Old Economy business model, but has had difficulties making the transition to the New Economy business model

Is it possible to have a version of the New Economy business model that does not become financialized as in the US case?

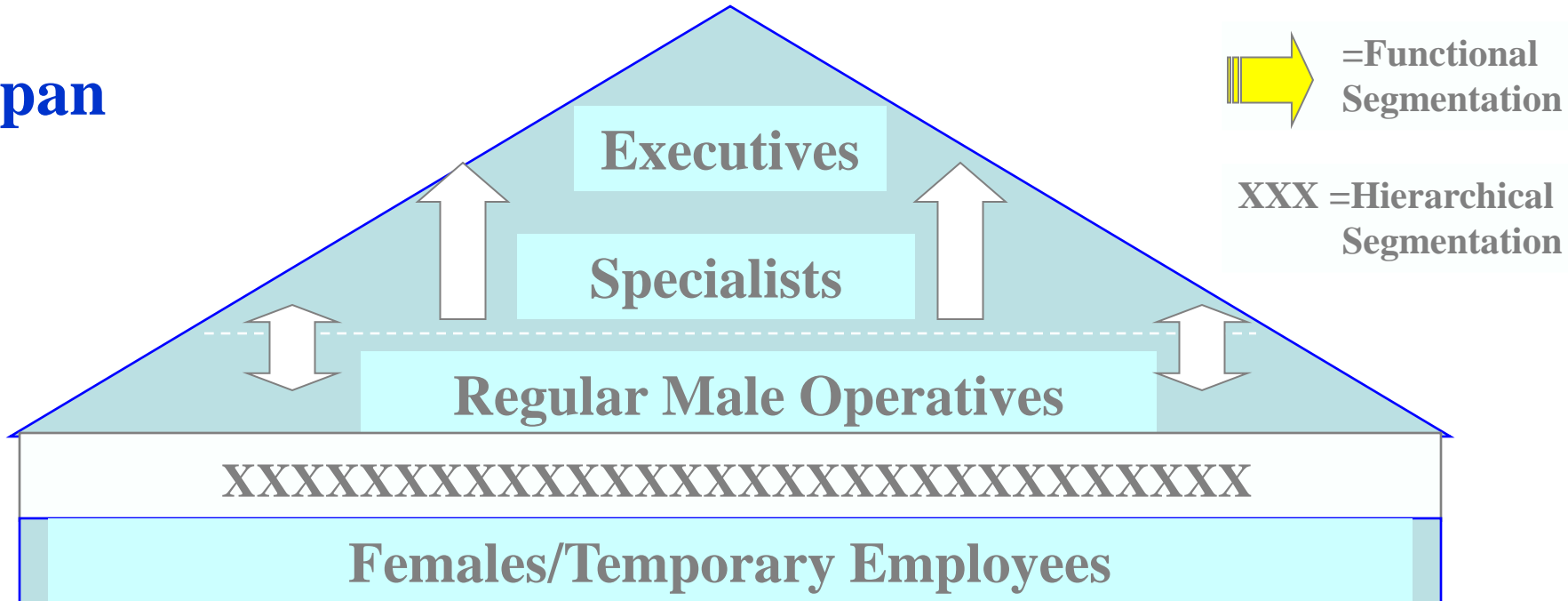
Organizational integration and international competition

United States and Japan, circa 1980

United States



Japan



China and the social conditions of innovative enterprise

**A research agenda for China in comparative, historical
perspective**

**China's path to indigenous innovation (paper in progress
by William Lazonick and Yin Li)**

- **Investments in physical and human infrastructure**
- **Technology transfer: FDI, returnees, and listening posts**
- **Indigenous innovation**

**What are the implications for the achievement of equitable
and stable growth in China?**

OXFORD

CHINA'S LEAP INTO THE INFORMATION AGE

INNOVATION AND ORGANIZATION IN
THE COMPUTER INDUSTRY

QIWEN LU

Indigenous innovation in China

**Pioneering study of China's
emerging ICT sector, published
in 2000 by the late Qiwen Lu**

**Studies of
Stone Group,
Legend Computer (Lenovo),
Founder Group,
China Great Wall Computer**

Lu employed the social conditions of innovative enterprise framework (see the summary in W. Lazonick, "Indigenous Innovation and Economic Development," *Industry & Innovation*, 11, 4, 2004)

Conversation between Jiang Zemin and Bill Gates

Beijing, February 2003

Jiang asked Gates: “Why [was] Microsoft worth almost a trillion dollars [at the peak of the Internet boom]?”

Gates explained projected earnings and net present value.

Jiang replied: “Okay that makes sense, but a trillion dollars seems too much.”

Gates: “Yeah, it was too much. It was inflated, Now Microsoft is more reasonably valued; the whole stock market was in a bubble.”

Jiang: “Well, stock was in a bubble, so why didn’t you sell all the Microsoft shares.”

Gates: Well, I have certain responsibilities to my shareholders.”

Jiang: “Why didn’t the company sell all its shares?”

Gates: “The company didn’t have that many shares, plus that would be viewed as not having confidence in the company.”

Jiang: “I guess I understand. This whole thing is not very rational.”

Gates: “You know, Mr. Jiang, you are a real capitalist.”

Quoted in Buderer and Huang, Guanxi, 2006, pp. 3-4.