

RETHINKING GROWTH

Michael Spence

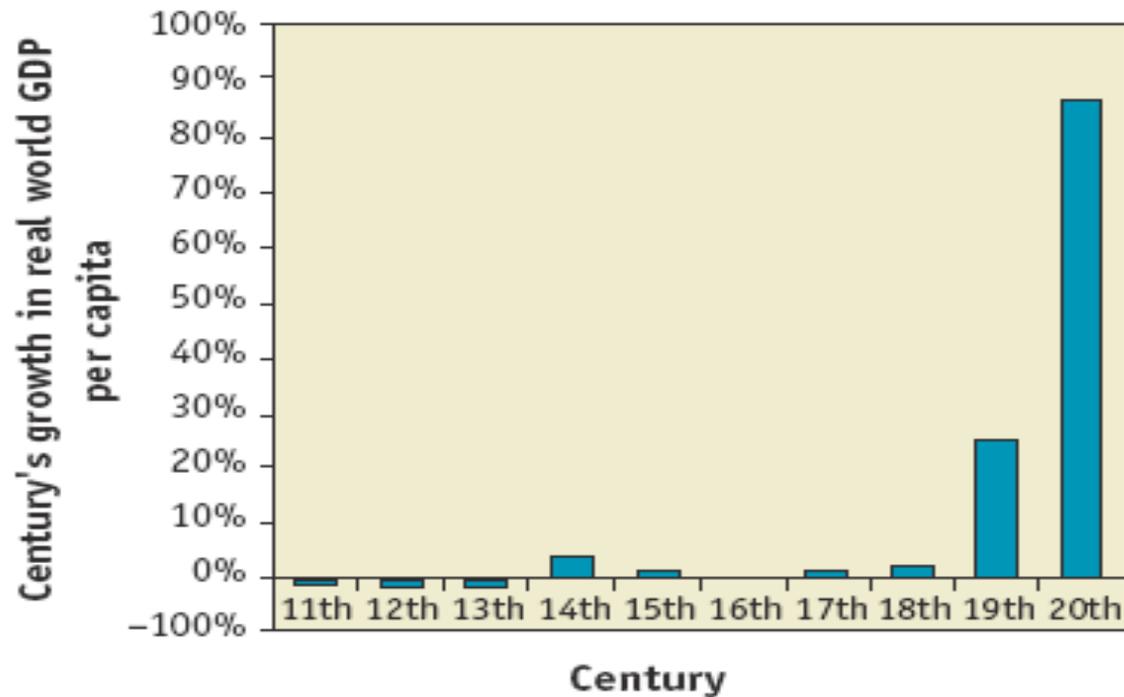
ISEO

July 2, 2005

A Little Data

FIGURE 11

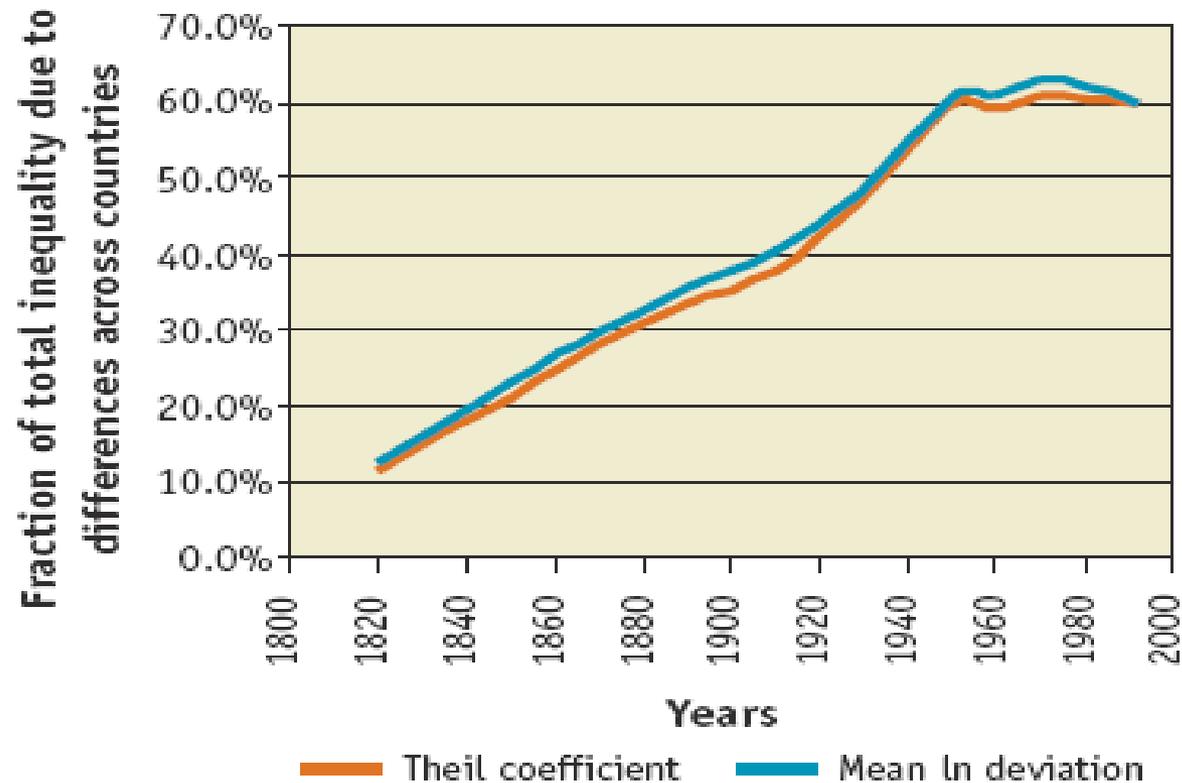
Worldwide Growth in Real GDP per Capita, 1000–Present



Source: DeLong 2000.

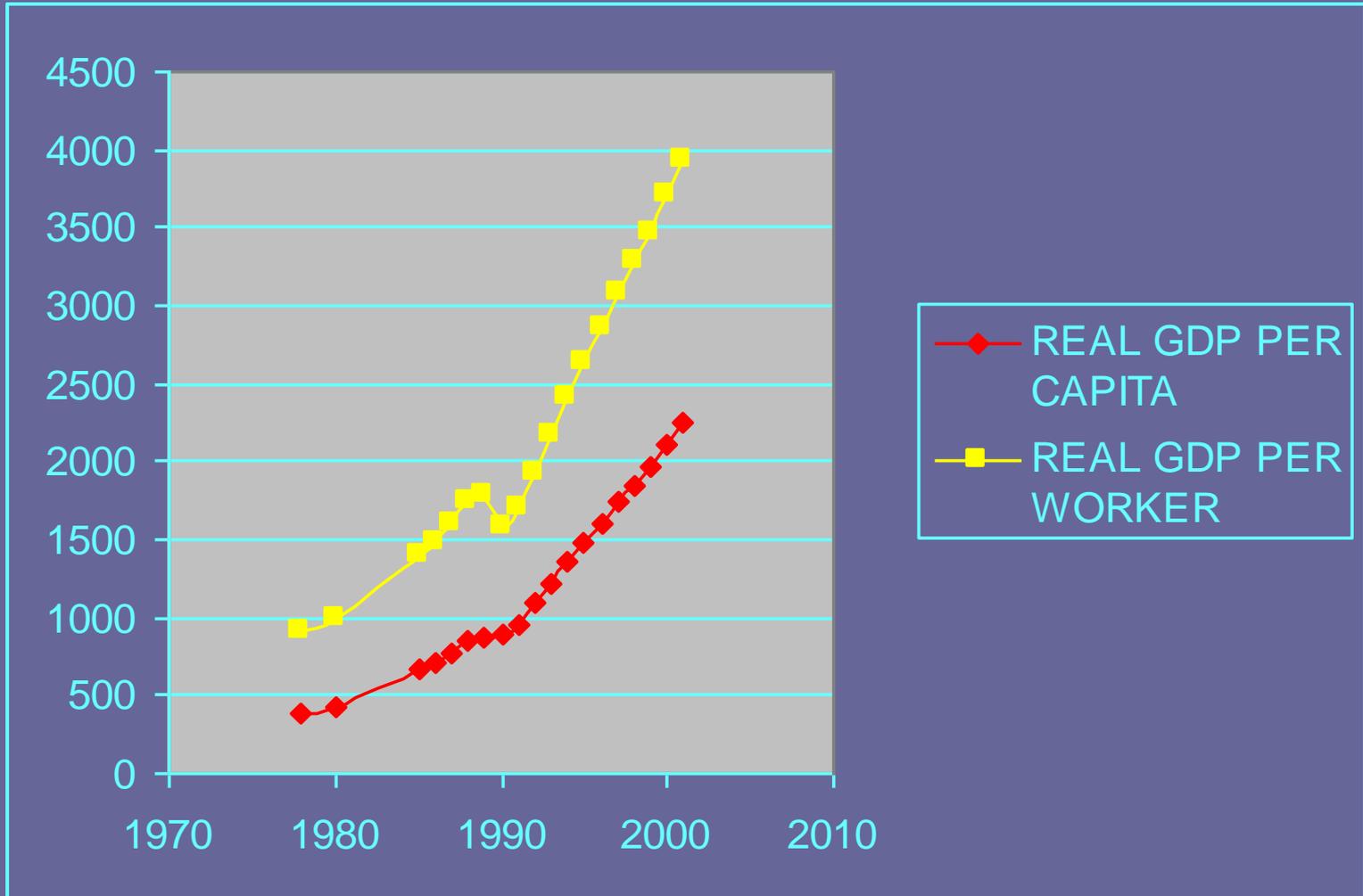
FIGURE 1.4

Fraction of World Inequality Accounted for by Differences across Countries

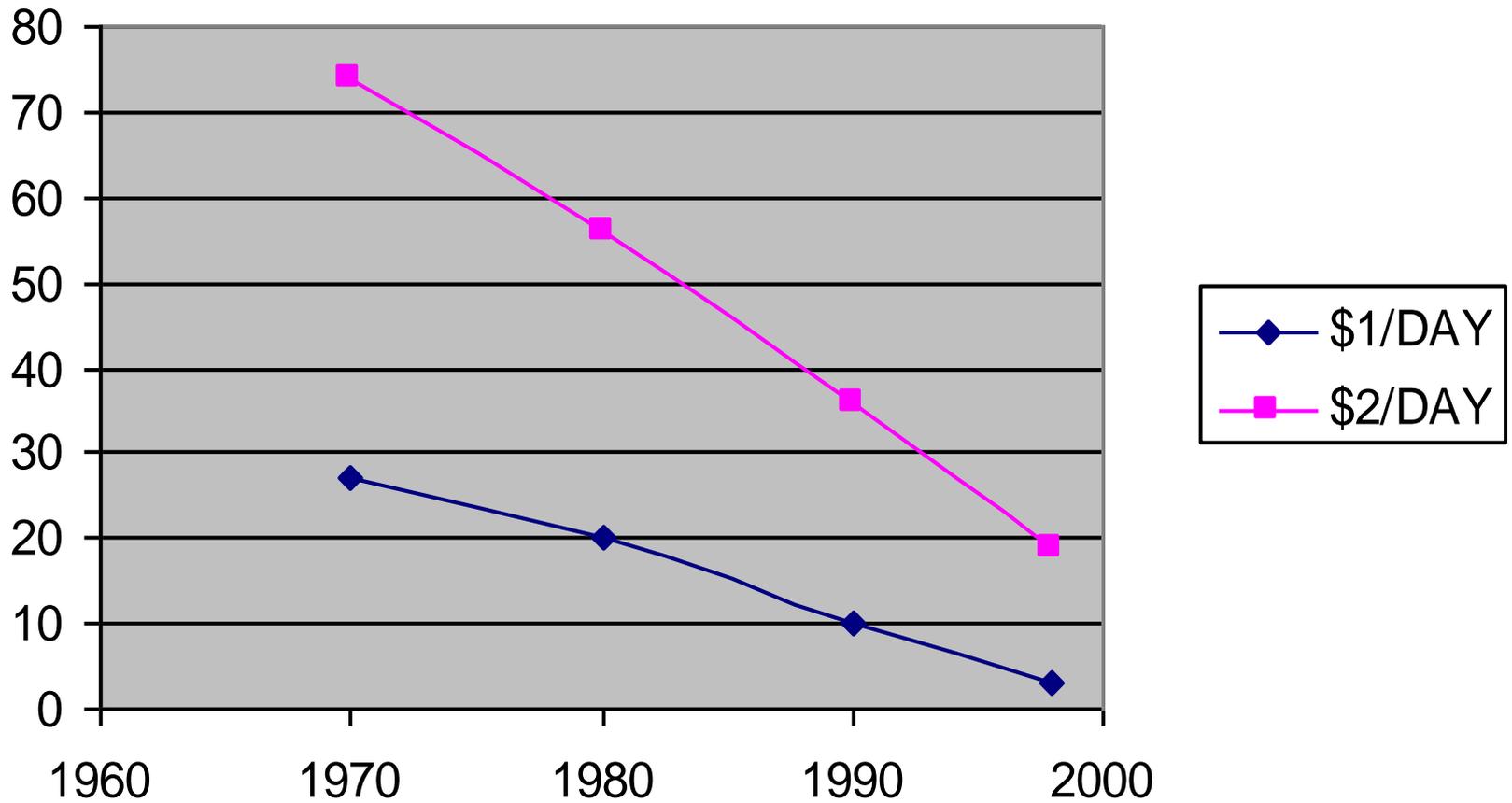


Source: Bourguignon and Morrison 2002.

China



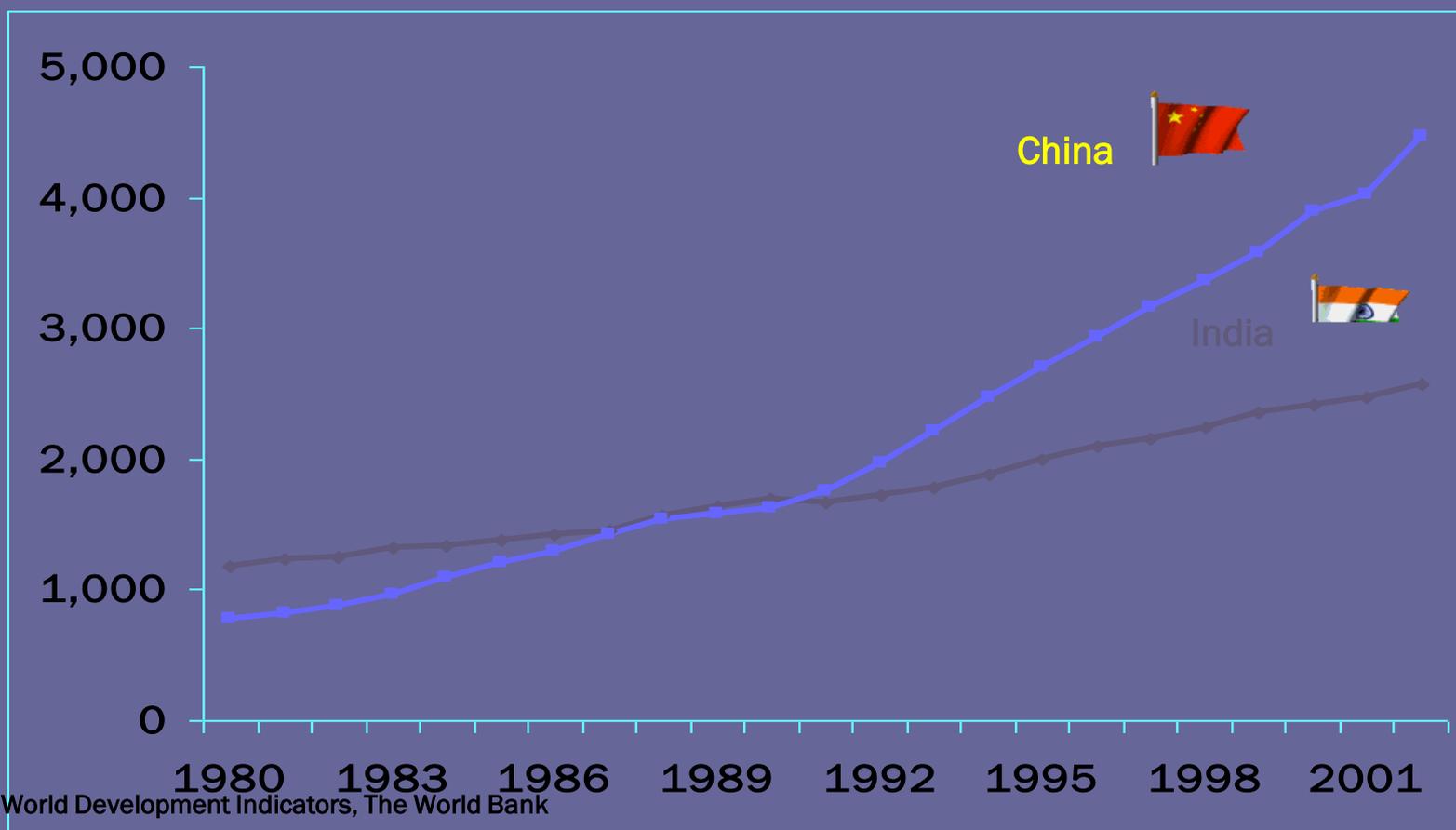
POVERTY IN PERCENTAGES



(GDP in billions of 1995 US\$)	1980	1988	2001	Growth Multiple 80-01	% World	
• China	9.5	164	368	1,114	6.8	3.0
• India	5.5	161	253	506	3.1	1.5
• Korea	7.2	149	295	639	4.3	1.9
• Taiwan	6.7	85	160	333	3.9	1.0
• Russia	n/a	n/a	367	-	1.1	
• Brazil	489	580	772	1.6	2.3	
• Mexico	220	243	372	1.7	1.1	
• Argentina	220	214	280	1.3	0.8	
• South Africa	127	141	176	1.4	0.5	
• Japan	2.6	3,298	4,496	5,651	1.7	
	16.5					
• Emerging Markets	2,389	3,158	6,112	2.6	17.9	
• World	4.6	18,662	23,898	34,187	1.8	

Relative Growth rates for China and India

GDP per capita growth
PPP adjusted*, \$ per person



Source: World Development Indicators, The World Bank

Topics

- Growth as a Means to an end, not an end in itself
- Thinking about growth in terms of productivity, investment and the accumulation of assets
- Accelerating Growth
- Aggregate saving and investment and the market
- Capital markets and informational depth
- Network-based information technology
- Governance and Culture

A Frame of Reference

- The search for necessary and sufficient conditions is elusive
- We can look for necessary conditions
- Focus on investment and capital
- For growth one needs a dynamic model
- An income statement and a balance sheet
- A particular focus on information technology and its impacts on both advanced and developing economies

A functioning market system as a Necessary Condition

- Decentralization
- Price signals
- Incentives
- Property
 - Clarity about who owns the asset - the SOE in China
- Caveats
 - Capital Markets
 - Informational asymmetries and gaps
 - Macroeconomic stability
- There are degrees of efficiency

Growth

- Increases in per capita incomes
- In a market system, per capita incomes reflect average productivity levels.
- Average productivity levels are a function of a vector of assets that are accumulated over time.
- Embedded in this function is the accumulated technical progress from the advanced countries
 - Alternatively the technology has to be transferred and the function moves as that occurs
- These assets include
 - Tangible and intangible assets
 - Accumulated private and public investment

Assets that Determine Productivity Levels

- Private tangible capital - plant and equipment
- Infrastructure
 - Transportation and communication
 - Energy
 - Telecommunications
- Facilities and real estate
 - Private and public
- Human capital/Education
- Public health
- Scientific and engineering/technical knowledge
- A functioning legal and regulatory environment
- Macroeconomic stability

Growth

- Results primarily from the accumulation of these assets in a balanced way
- Why balanced?
 - They are complements
 - The return to investment in any category rises with the levels of the other assets
 - Put another way, the aggregate return to overall investment is highest if the portfolio underlying the aggregate is reasonably balanced
- To maximize growth, public and private investment would go to categories with the highest marginal impact
 - The sequential bottleneck approach

An Analogy with Private Investing

- Venture Investing in SV
 - Technology without management or the reverse
 - Supplying the missing intangible assets
 - Human resources
 - Access to customers
 - Supplying complementary resources to permit focus
 - Managing the risk profile
- Investments have a higher probability of succeeding if there is a reasonably subtle and lengthy set of complementary assets in place
- One might describe this as a disciplined art

Growth Again

- I will call the function $P(A)$, where A is the vector of assets
- Diminishing returns
- With high investment rates, rapid growth is possible
 - But not indefinitely
- Process takes decades because of limits on feasible rates of saving and capital accumulation
- China
 - Savings rate
 - Substituting for capital market efficiency

Accelerating Growth

- Romer data
- Advanced Country Relevance
 - Demand beyond the domestic market
 - Partially export led growth
 - Investment (private) beyond capacity of domestic economy
 - Transfer of technology and knowledge

Savings and Investment

- Domestic saving and investment is required for growth
- In poor economies, this is painful and may not be feasible
- Low income trap
- There is a good argument for substantial aid
- The Case of China
 - Market reforms in agriculture first
 - Then government pushed the saving and investment rate up
- University endowments
 - Discount rate is zero or negative

Capital Markets

- Informational gaps and asymmetries
 - Require regulation and disclosure to function efficiently
 - Endogenous market solutions are imperfect
- Developing Country capital markets are often informationally immature
 - Domestically and from an international perspective
- Informational maturity is an intangible asset
 - Not just transparency and regulation
 - Human resources and the regulatory surround
 - Requires a long time to acquire
 - China

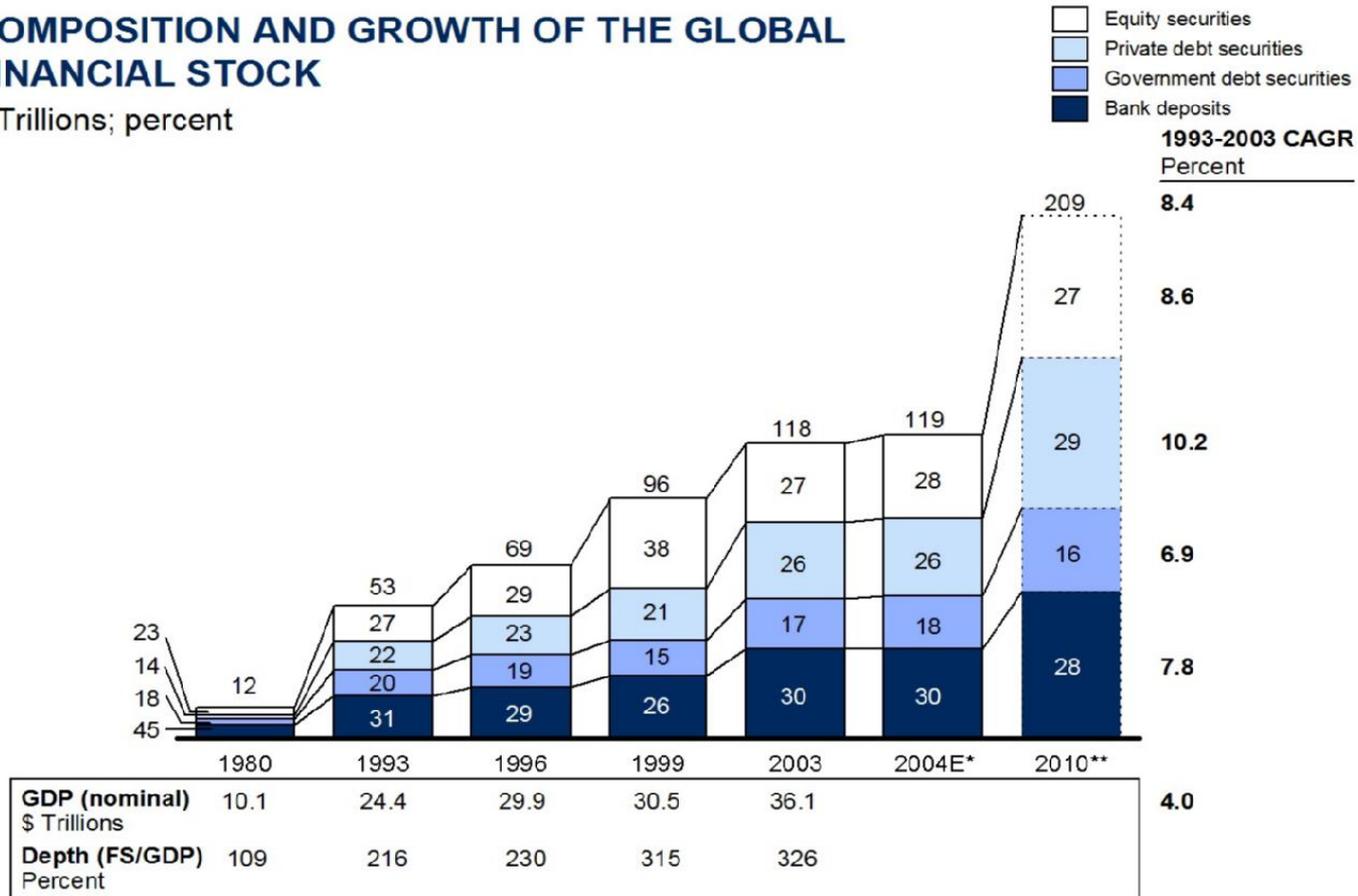
(Continued)

- Volatility
- Asset classes are a function of the fineness of the informational grid
- Complete openness is not likely to optimal strategy in the immature phase
 - Controlling inflows and hot money
- Global capital flows are not yet fully regulated
 - By the standard we are used to in advanced countries
 - As a result they are inherently more risky

Exhibit 1

COMPOSITION AND GROWTH OF THE GLOBAL FINANCIAL STOCK

\$ Trillions; percent



* Based on latest available data: September 2004 for equities, March/June 2004 for debt, June 2004 for bank deposits

** Extrapolation off of 2003 base, with components grown at 1993-2003 CAGRs

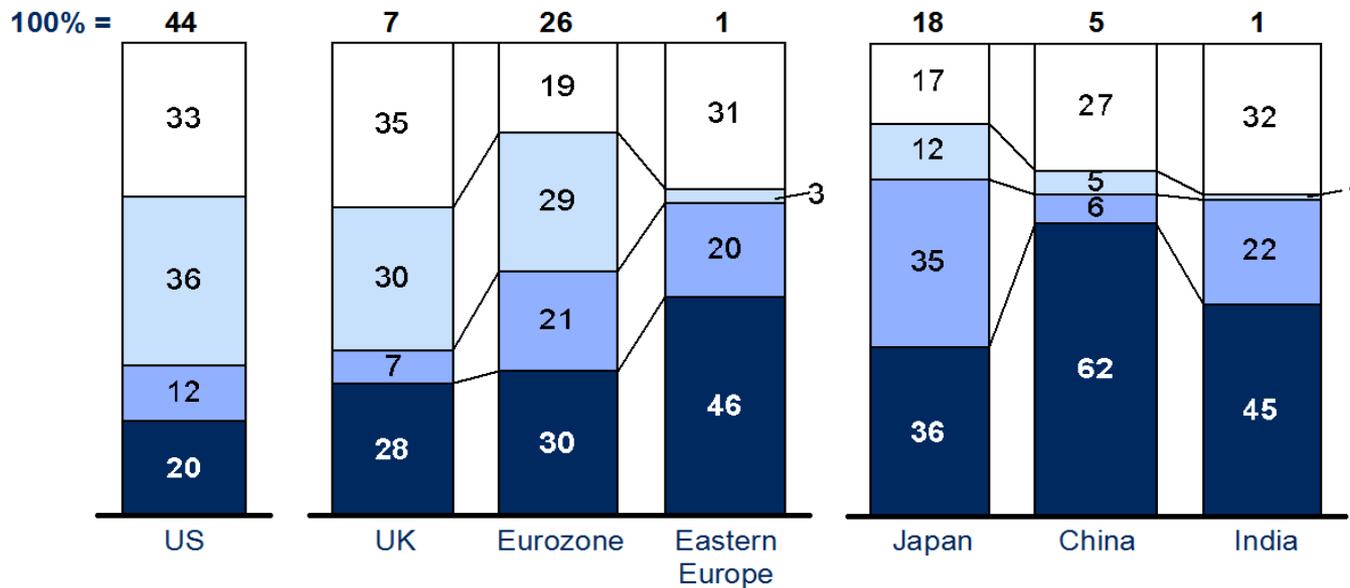
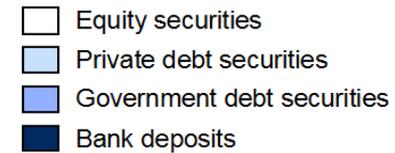
Note: 2004E shares do not add to 100% due to rounding error

Source: McKinsey Global Institute Global Financial Stock Database; World Federation of Stock Exchanges; Merrill Lynch; Global Insight

Exhibit 6

COMPOSITION OF FINANCIAL STOCK, 2003— THREE REGIONAL STORIES

\$ Trillions; percent



Depth (FS/GDP)	397	385	314	99	411	323	137
Percent							
CAGR	8.6	11.3	9.8	19.3	4.0	14.5	11.9
Percent							

Note: Some numbers do not add to 100% due to rounding error
Source: McKinsey Global Institute Global Financial Stock Database; Global Insight

The Portfolio of Economic Activity or Industrial Mix

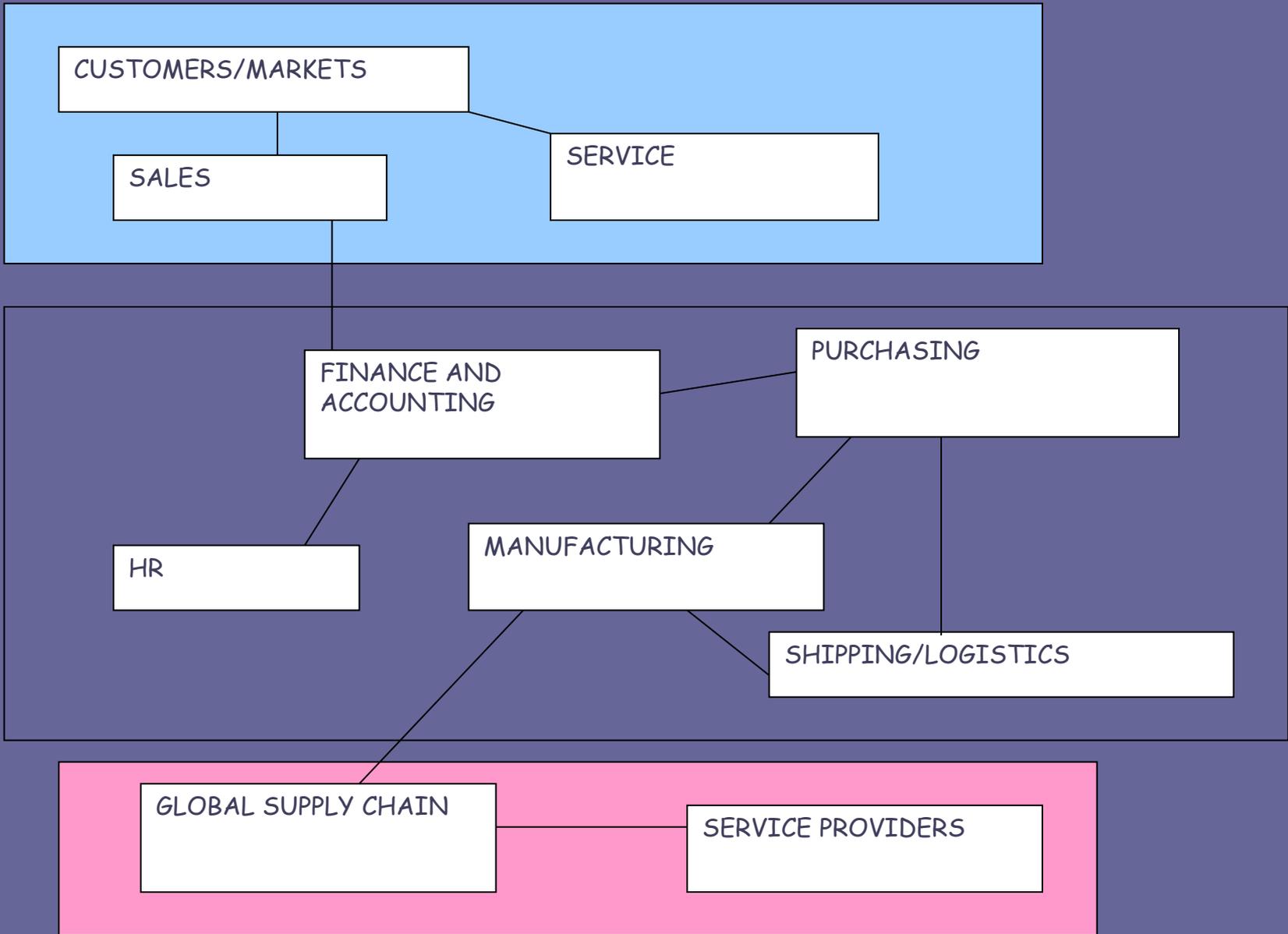
- Evolves over time
- Quite rapidly at these growth rates
 - Japan, Taiwan and Korea are examples
- The global economy creates more opportunities for economic activity to move around
- Education is the key to accomplishing the implied shifts in types of jobs and employment
- Social policy: US and Europe
- Implementing social insurance at the industry or company level is unwise
- Europe and China

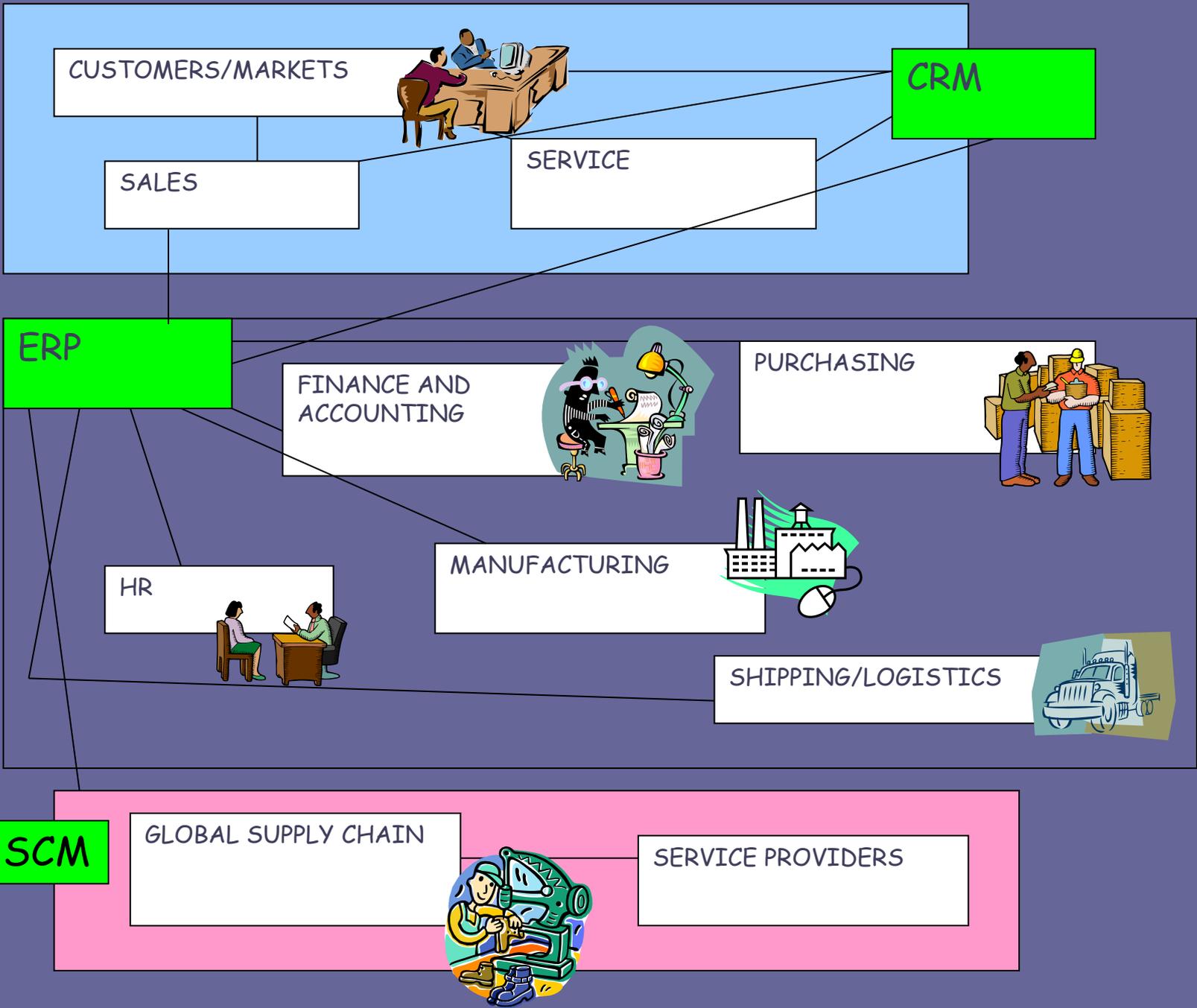
Network Based Information Technology

- Its impacts are evolving rapidly
- Impacts are in three classes (more or less in historical order) and all in relatively early stages of a lengthy evolution
- All fit the general description of lowering transactions costs, but in different areas
- The headings are
 - 1. Automation of information processing functions
 - 2. Lowering the cost of finding things
 - 3. Making remote HR resources much more accessible and therefore valuable in supply chains

Automation of Information processing, monitoring, accounting, control and reporting

- Labor saving technical change
- Source of much of the US productivity growth spurt and it is in process in other advanced countries with a lag.
- The network is critical because it connects disparate databases and users
- Evident in macro data and at the micro level of the firm

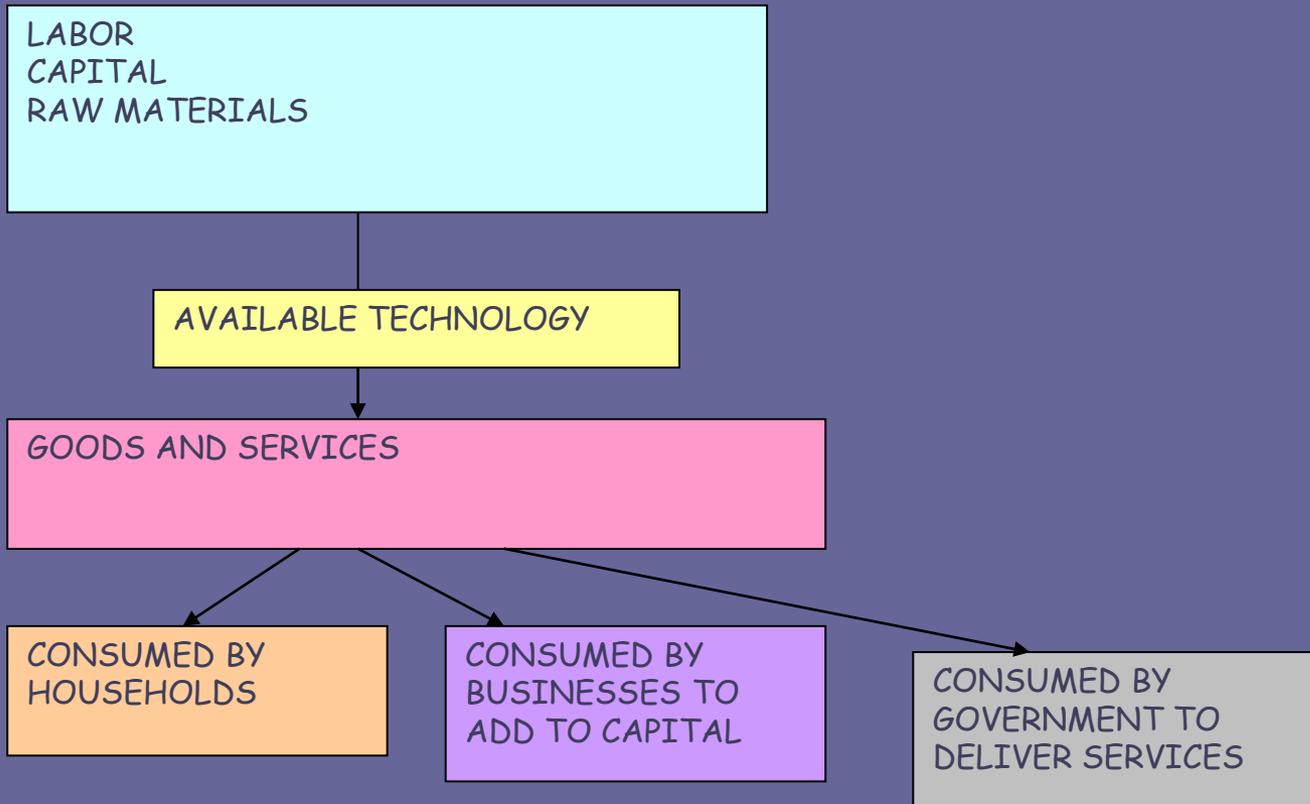




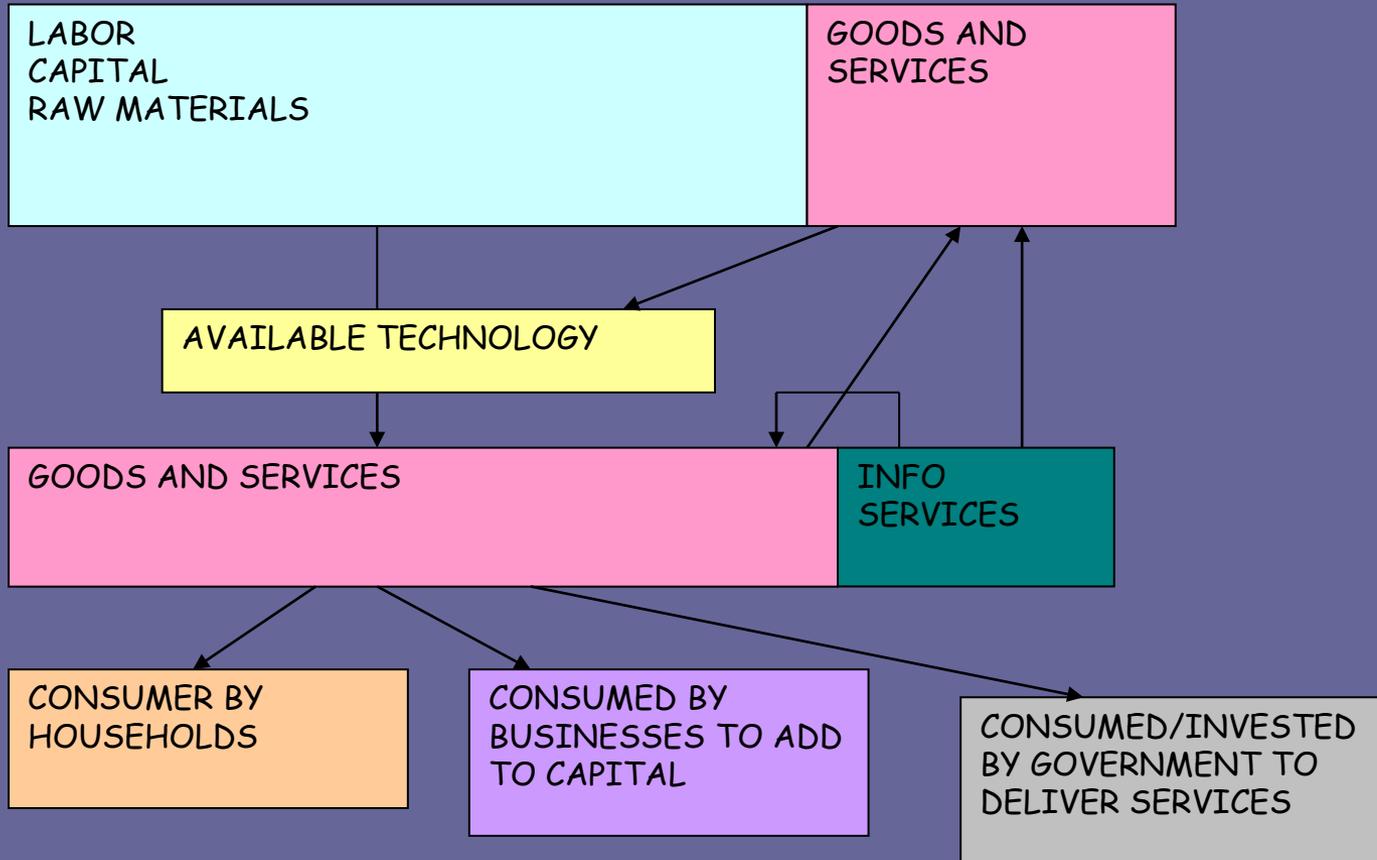
Technological Change in the Information Service Sector and Productivity Increases

- Why are the effects of technological change in information service sector large
- It has to do with the input-output structure of advanced economies

INPUT OUTPUT STRUCTURE



INPUT OUTPUT STRUCTURE 2



Search and Transacting Costs

- Making markets - buyers and sellers finding each other - eBay
 - Quasi natural monopoly
- Better informed buyers
- Transacting services - banking and financial services
- Market liquidity and the geographic boundaries of markets - more buyers
- Finding specific valuable human resources
- Measuring the economic benefits is harder than in the automation case

Accessing Geographically Disparate Human Resources Efficiently

- IT services
- Business Process Outsourcing
- R&D
- In certain kinds of functions, the geographic boundaries of labor markets are breaking down
- Paul Samuelson article
- The nature of this kind of technological progress
 - Production functions
 - Transactions costs
- Comparative Advantage of the Advanced Countries?

Telecommunications Infrastructure and the pricing of Services in Developing Economies

- My brother
- Modern telecommunications technology and the poor
 - Many experiments
- The issue of sustainability without ongoing subsidization
- High variance in telecom regulation
- High levels of externalities
 - Range of applications: education, health, government services, making markets, global supply chains
- Purely private model will result in underinvestment
 - Revenue generating model in pricing is even worse

Governance

- A variety of governance systems are consistent with rapid growth and integration into the global economy
- Democracy and autocracy
 - Advantages and disadvantages
- The implicit objective function of those who hold the power - i.e. control the resources or access to them
 - Growth/future generation orientation
 - Inclusive/egalitarian

Justifiable Microeconomic Intervention

- To correct market failures
 - Externalities
 - Informational gaps and asymmetries
- To prevent the exercise of monopoly power
- To countervail subsidies or other interventions elsewhere
- To slow the rate of change to protect people and to give them a chance to adapt
- To prevent excessive volatility in informationally immature markets
- Investing to create assets with externalities or public good like characteristics
- Setting standards and objectives for Foreign Direct Investment

Culture and Values

- Attitudes toward progress, material wealth, risk-taking, action by individuals versus groups
- Students at our business schools
- A sense of possibilities

Comments, Questions and General Discussion