

EE 366 Economics of Services Sector

CHAPTER 3

Development of Service Industry and Service Economy

Dr. Nessara Sukpanich

Content and Reading List

1

Service industry evolution mechanism and track characteristics

[Read: Zhou \(2016\): Ch. 5](#)

2

Basic features of service economy development trend

[Read: Zhou \(2016\): Ch. 6](#)

3

Service sector productivity, service sector growth, and economic growth

[Read: Navarro and Roura \(2010\)](#)

4

Service sector development in Asia

[Read: ADB \(2012\)](#)

1. Service Industry Evolution Mechanism and Track Characteristics

Zhou, Z. (2016). Chapter 5: Service industry evolution mechanism and track characteristics. *In The development of service economy: the changing economy in China*. Truth & Wisdom Press and Springer Science+Business Media Singapore (pp. 77 – 97).

Topics covered

1. Service economy evolution mechanism
2. The evolution process of service economy and its orbit characteristics

1.1 Three Types of Service Economy Mechanism

Three types of service economy evolution mechanism include

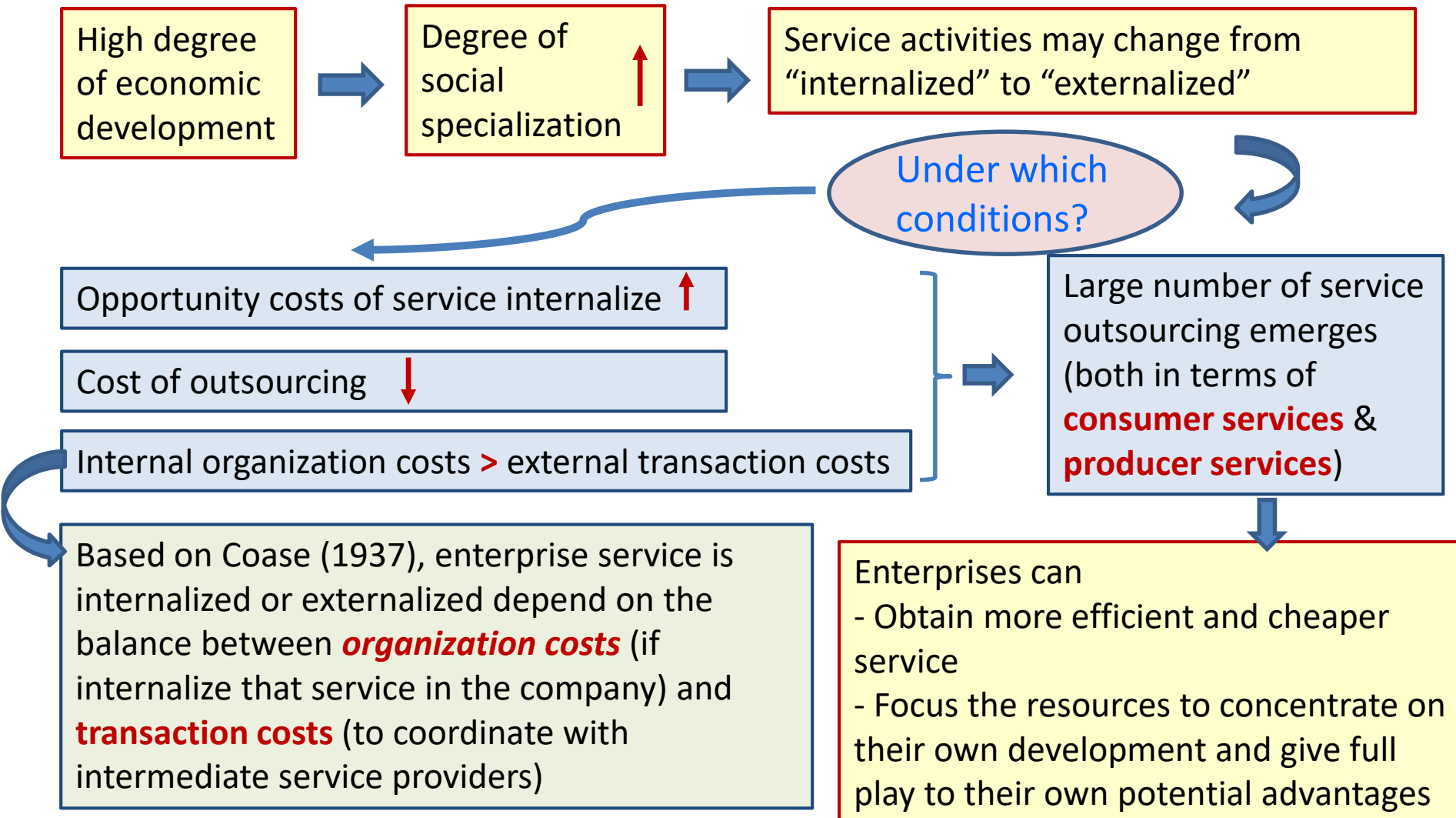
- ❖ **Deepening division mechanism**

- ❖ **Industry convergence**

- ❖ **Business transformation**

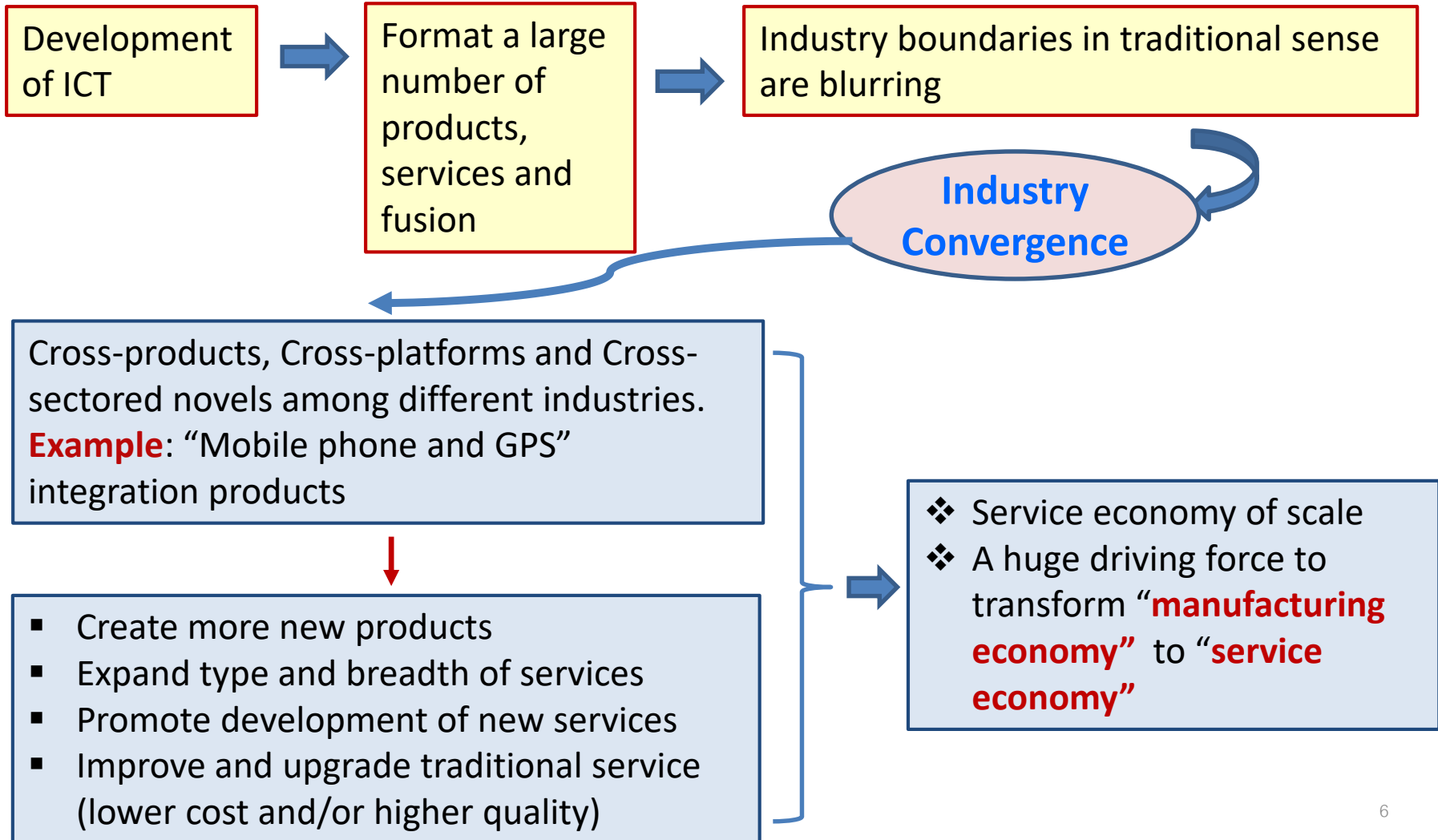
1.1 Three Types of Service Economy Mechanism

1. Deepening division mechanism



1.1 Three Types of Service Economy Mechanism

2. Industry convergence



1.1 Three Types of Service Economy Mechanism

3. Business transformation

Service activities within manufacturing enterprises continued to expand to create “service value” to maintain long term competitive advantages (product market homogeneity is increasingly competitive so product margins gradually getting thinner)



Main business function gradually shifted from the original manufacturing products to providing completely systematic services

Example: IBM



Manufacturing enterprises transfer to service enterprises



1.1 Three Types of Service Economy Mechanism

Homework and Discussion

Based on 3 types of service economy evolution mechanism

- ❖ **Deepening division mechanism**
- ❖ **Industry convergence**
- ❖ **Business transformation**

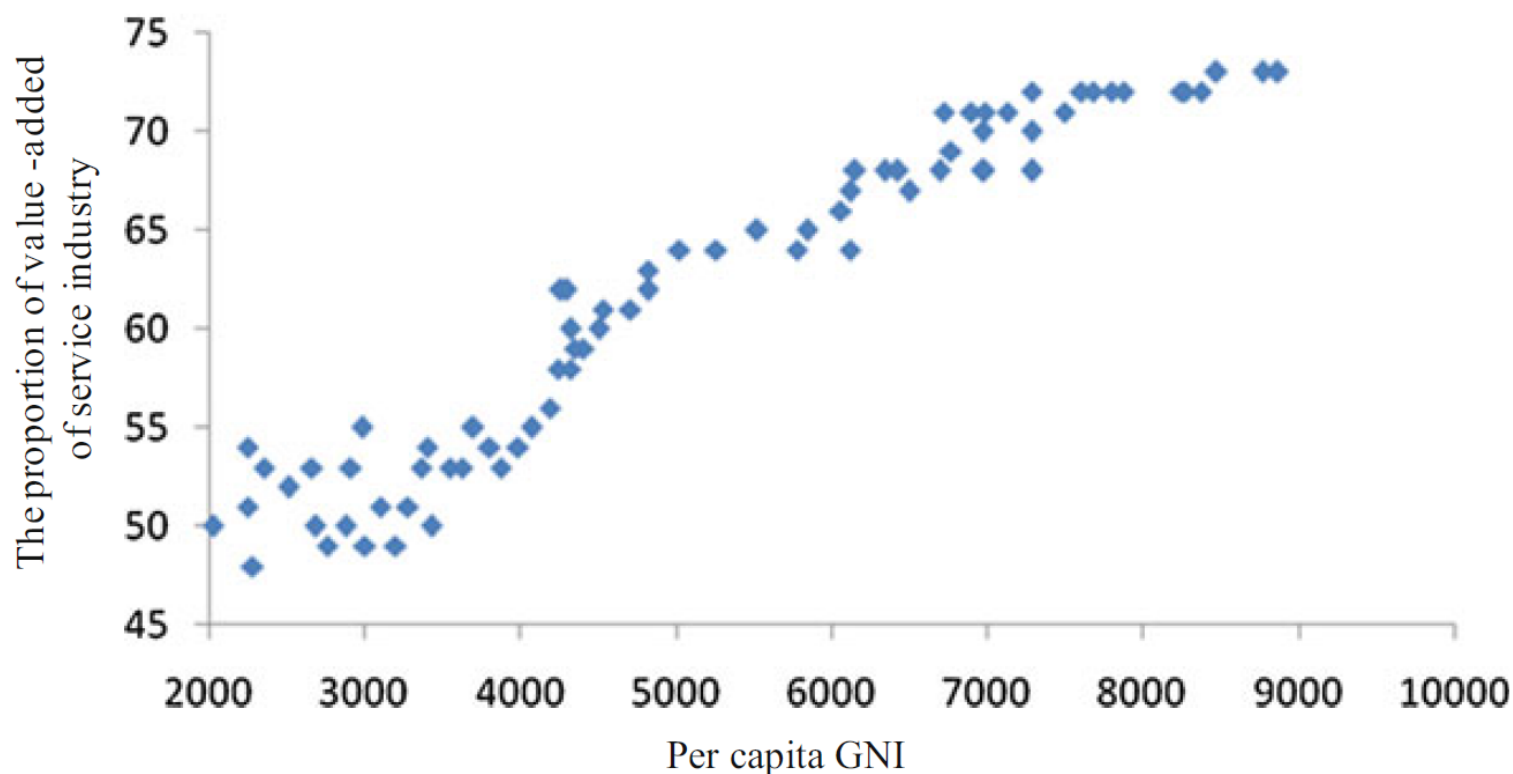
Provide relevant examples of each mechanism in the content of the service industry your group chose.

1.2 The Non-linear Evolution Characteristics

- ❖ This topic describes and explain underlying reasons of the **non-linear evolutional characteristics (three stages or S-Shaped characteristics of the relationship)** between **per capita income** and **the proportion value-added in service industry in the overall economy**. Those stages include
 - ❖ **Preliminary cultivating period**
(Early and middle stage of industrialization)
 - ❖ **Accelerator cultivating period**
(Middle and later stage of industrialization)
 - ❖ **Mature period**
(Later stage of industrialization and post industrialization period or matured period of industrialization and urbanization)
- ❖ Note: this topic also brings **the industrialization** and **urbanization process** into the explanation.

1. Service Industry Evolution Mechanism and Track Characteristics

The changes of per capita GNI and the proportion of value-added of service industry

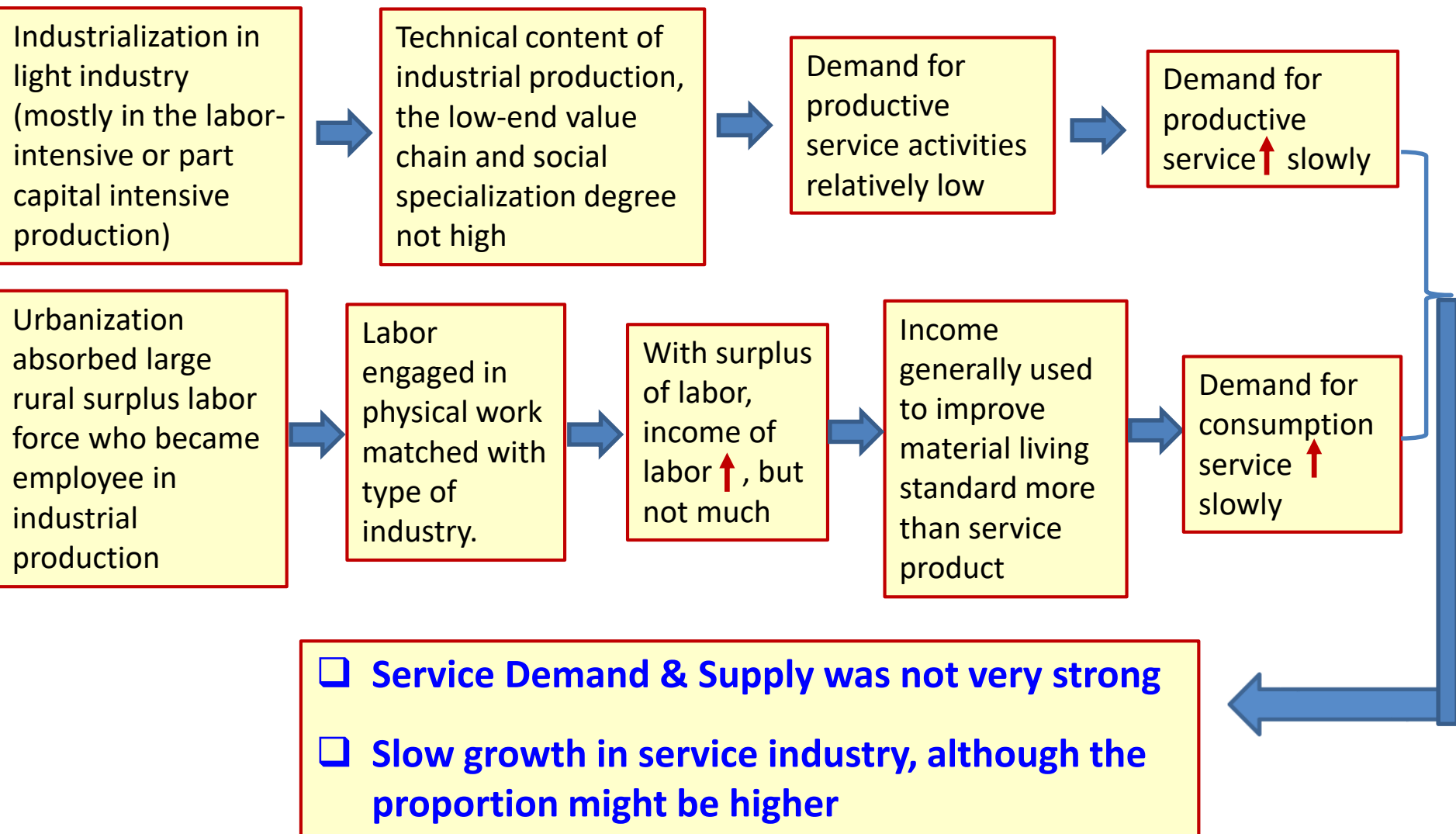


Note: Data sources from World Bank Database

Source: Zhou (2016)

1.2 The Non-linear Evolution Characteristics

1. Early and middle stage of industrialization



1.2 The Non-linear Evolution Characteristics

2. Middle and later stage of industrialization

- Basic industry,
- heavy chemical industry,
- capital intensive industry
- technology intensive industry



Production of technology chain transfer from low-end to high and mid grade.



Demand for productive service  rapidly



- Urbanization now still have rural surplus labor force flowing to the city.
- But second and third generation human capital has more composition of knowledge and have high skills.



Labor supply matched demand (especially for high skilled work force)



High skill and professional skill labor have higher income



After the material life of family reaches certain level, demand for service consumption  rapidly

**Service industry grows rapidly
(Accelerated Growth)**



1.2 The Non-linear Evolution Characteristics

3. Later stage of industrialization, post industrialization period

- Industrialization entered mature period.
- Industrial production & agriculture reach the height of modernization

Still need a variety of support of producer services

Demand for middle service still ↑

Producer service industry still grow

- Urbanization entered mature period.
- Transfer of rural surplus labor force had come to an end
- Proportion of urban population was high

Laborers possessed professional knowledge and skills

Labor income ↑

Demand for service consumption gradually ↑

Steady growth of consumer service industry

- Steady growth in service industry
- The proportion of service industry & material production was in relative stable equilibrium state

1.2 The Non-linear Evolution Characteristics

Further investigation

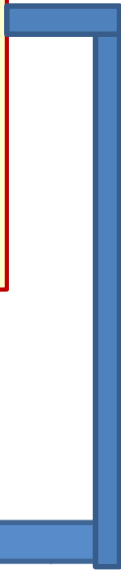
When per capita income ↑



- Growth of service consumer demand overall relatively stable
- Rapid growth of intermediate demand for service



- Demand for service consumption presents a positive linear relationship with per capita income
- Intermediate demand for service is non-linear correlation with per capita income



Non-linear characteristics of *per capita income* & *proportion of service* in total production or income may have nothing to do with the growth of demand for service consumption, but depends on the growth of intermediate demand

2. Basic Features of Service Economy Development Trend

Zhou, Z. (2016). Chapter 6: The basic features of service economy development trend. *In The development of service economy: the changing economy in China*. Truth & Wisdom Press and Springer Science+Business Media Singapore (pp. 99 – 114).

Topics covered

1. Features of growth morphology
2. Industry development characteristics
3. Spatial distribution in service economy

2. Basic Features of Service Economy Development Trend

Outline of the paper

1. Features of growth morphology

- The innovation-driven based on human capital
- Moderation, steady and sustainable growth
- The duality of growth structure

2. Industry development characteristics

- The dominant of knowledge intensive business service
- The development of industrial-service oriented

3. Spatial distribution in service economy

- The urban agglomeration based on networking
- Agglomeration of high-density urban centers and rural agglomeration point

2. Basic Features of Service Economy Development Trend

The innovation-driven based on human capital

○ Agricultural economy driven by _____

○ Industrial economy driven by

○ Service economy is driven by

2. Basic Features of Service Economy Development Trend

The innovation-driven based on human capital (cont.)

Note:

- In service economy, manufacturing experienced a conversion from *capital intensive* to *technology and knowledge intensive*
- **Innovation-driven based on human capital** not only from the producers, but also **from consumers** (participation and experience of consumers becoming the subject of value creation like the producer, consumers play the main role in value creation)

2. Basic Features of Service Economy Development Trend

Moderation, steady and sustainable growth

- The **growth rate of service economy is relatively slow compared to industrial economy** . Why?
 - ✓ **Unlike some new products that can set growth a new round of consumption, growth of service consumption is relatively stable**
 - ✓ **When the country income grows demand for service increase, the growth of commodity production will inevitably slowdown -
→ modest growth in service economy**
- However, service industry has strong **positive externality** towards other sectors in the society (esp. from growth in intermediate services or producer services)
- Industrial economy is normally led by cyclical industry, the service industry sectors have both **cyclical industries** and **counter-cyclical industries (e.g. cultural industry and entertainment)** → **service industry does play a role of “stabilizer”** of national economy

2. Basic Features of Service Economy Development Trend

The duality of growth structure

- **Low growth** vs. **high growth** (such as in terms of employment and income)
- **Low productivity** vs. **high productivity**
- Duality could be both **between service industries** and duality **within the same industry**

2. Basic Features of Service Economy Development Trend

The dominant of knowledge intensive business service (KIBS)

- Knowledge-intensive services may include **information services, research services, legal services, financial services, marketing services, engineering services, management consulting industries** to provide a knowledge-based service
- **KIBS itself is the generating source and transfer node of knowledge in the innovation system**, directly provide a number of new knowledge and new technology for the **development of manufacturing industry, modern agriculture** and **other service industry**
- **The growth rate of KIBS added value is significantly higher than the growth rate of employees number**, reflecting its ***high level of labor productivity***

2. Basic Features of Service Economy Development Trend

The development of industrial service-oriented

- In the industrial structure of service economy, the **upgrade of the non-service sectors firstly extensively use advanced technology and equipment, modern management tools and manufacturing model to transform to modern agriculture and advanced manufacturing**, particularly the development of high-tech industries.
- As producers focus mainly business to provide services for consumers, **its products have more features of services**, the production process is more and more service-oriented, the sectors, the type and the way of provided services tend to be diversified.

2. Basic Features of Service Economy Development Trend

The development of industrial service-oriented (cont.)

- According to a survey conducted by the University of Cambridge on the global financial analysis of the top 50 libraries manufacturing enterprises, **the services provided by manufacturing companies are related to 12 kinds of services** including
 - ✓ product design and development
 - ✓ systems and solutions
 - ✓ maintenance and support
 - ✓ retail and distribution
 - ✓ installation and implementation
 - ✓ real estate and real estate services
 - ✓ financial services
 - ✓ Consulting
 - ✓ Leasing
 - ✓ outsourcing services and operations
 - ✓ Procurement
 - ✓ transport and logistics.

2. Basic Features of Service Economy Development Trend

The urban agglomeration based on networking

- To provide service, it is difficult to reduce the average same cost based on **standardized through economies of scale** like the physical products, but through the **networking way** will be more efficiency in order to achieve this purpose.
- **The node of the network system is city**, especially large city. From a range of countries and regions, **service industry has significant spatial structural features of urban agglomeration**, especially producer services usually very unevenly concentrated in the cities, especially big cities.

2. Basic Features of Service Economy Development Trend

The urban agglomeration based on networking (cont.)

- For the location choice of service enterprises, the main motivation is to **market-seeking**, more dominated by the **demand of service consumer**, rather than resource-seeking
 - resource abundance is not to be considered as an important location factors.
 - As the city gathering a lot of people, carrying all types of economic activity, it is naturally become the main gathering place for service and support

2. Basic Features of Service Economy Development Trend

Agglomeration of high-density urban centers and rural agglomeration point

- The **market-oriented diversification of producer service industry location**, complicated the **business location choice** (Illeris 1996). For example,
 - ✓ **Enterprises of spatially distributed market**, the principle of location selection is convenient transport network, including the airport and the interstate highway system;
 - ✓ **Enterprises of highly concentrated market**, the principle is to facilitate these market-oriented.
 - ✓ **Owning fixed places or reputable outlets** is also one of important factors that influence the trust and confidence of customer.
 - ✓ **Division owned by a large integrated company**, mainly select dots from the corporate network location departure orientation, it can be in the city or the interurban

Therefore in a city-wide area service industry tends to gather toward certain area

2. Basic Features of Service Economy Development Trend

Agglomeration of high-density urban centers and rural agglomeration point (cont.)

- Although **producer service industry** continued to expand in the original area, but soon **will follow a standardized process to seek low-cost production cycle layout** (Grubel and Walker 1989)
- With the advent of the Internet technology and the rise of resilient service production mode, **enterprises can share the fruits of economic growth in the broader local area network.**
- The trend of company size miniaturization and decentralization, also allows **positioning mode of company to become more flexible and decentralized** (Reinert 1998).
- In the city center of service industry highly concentrated, also presents the trend of **selective spatial diffusion**. Especially producer service industry with the “back” function can stay away from the downtown central business district, but lay in the edge region of the big cities to enjoy the benefits of a low cost (Moss and Dunau 1986). Therefore, in the **suburban district**, especially in **suburbs newtowns**, many agglomeration points of service industry formed.

2. Basic Features of Service Economy Development Trend

Zhou, Z. (2016). Chapter 6: The basic features of service economy development trend. *In The development of service economy: the changing economy in China*. Truth & Wisdom Press and Springer Science+Business Media Singapore (pp. 99 – 114).

Discussion

1. Do you think your group service industry plays the role of “economic stabilizer”? Explain
2. Do you think there exists duality features within your group service industry? Explain
3. Are there any evidence of your group industry regarding the urban agglomeration based on networking and agglomeration of high density urban centers and rural agglomeration point

3. Service sector productivity, service sector growth and economic growth

Navarro, T. M. and Roura, D. R. (2010). *Growth and Productivity in the Service Sector: The State of the Art*. Working Papers, the Institute of Social and Economic Analysis.

Key messages

- 1. Baumol's cost disease**
- 2. The impact of services on economic growth**
- 3. Factors affect growth of services and related employment**
- 4. Service productivity and measurement**

3. Service sector productivity, service sector growth and economic growth

3.1 Baumol's Cost Disease

- ✓ What is “Baumol's Cost Disease” argument and its implication on the relationship between service sector growth and economic growth?
- ✓ What could be possible explanation to counter this argument?

3. Service sector productivity, service sector growth and economic growth

What is “Baumol’s Cost Disease” arguments?

- ❖ In the 1960s, Baumol was trying to understand *the economics of the arts*.
- ❖ He noticed something surprising !!!
- ❖ “Musicians weren’t getting any more productive — playing a piece written for a string quartet took four musicians the same amount of time in 1965 as it did in 1865 — yet musicians in 1965 made a lot more money than musicians in 1865”
- ❖ That means even labor productivity of musician does not increase over time --- musician still get much higher compensation

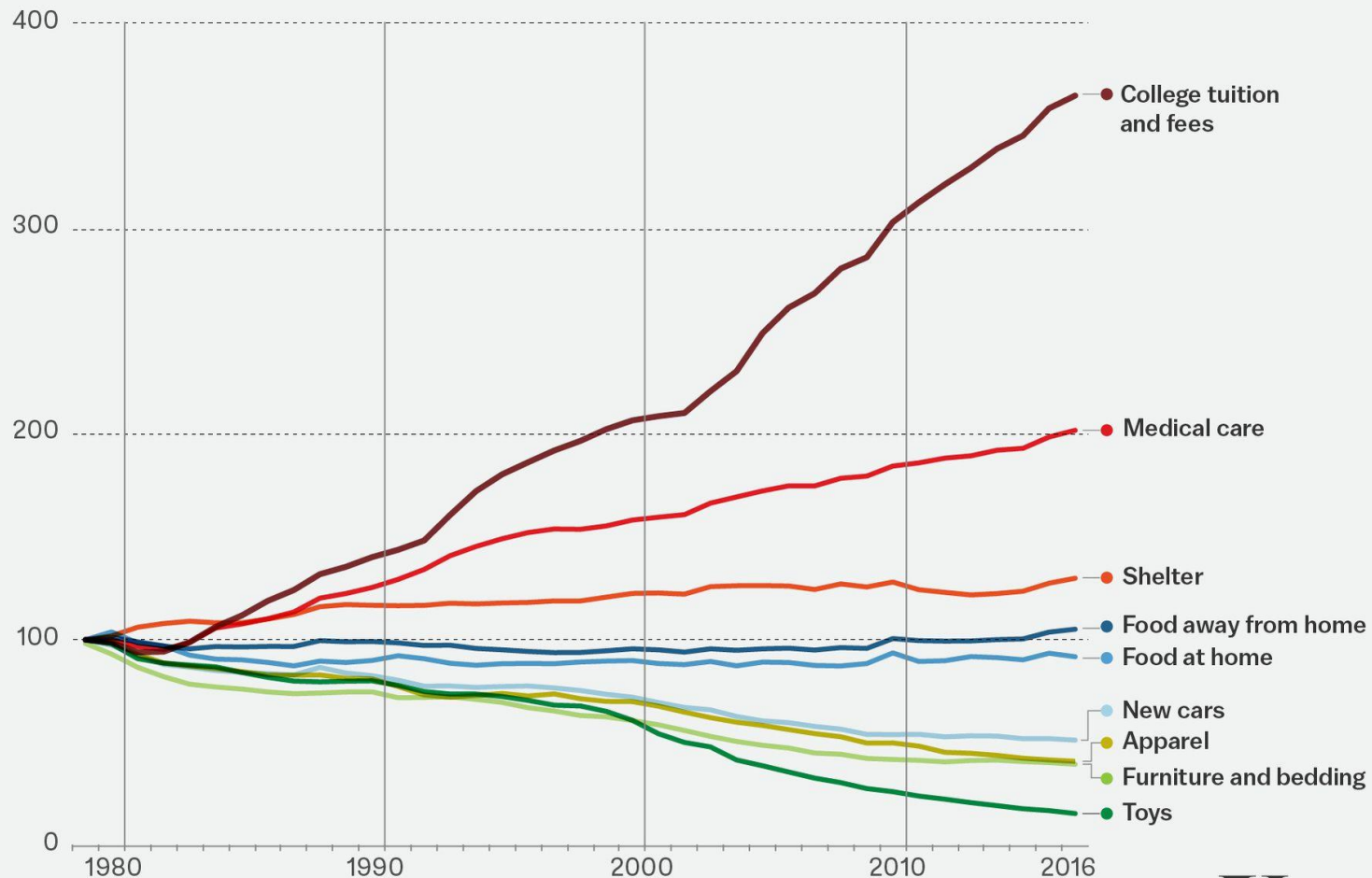
What is “Baumol’s Cost Disease” arguments?

Baumol’s explanation

- ❖ Since the *performer’s labour is the output* – the singer singing, the dancer dancing, the pianist playing – there is really no way to increase output per hour (Heilbrun, 2003)
- ❖ Rising productivity in the manufacturing sector of the economy inevitably pushes up the cost of labor-intensive services like live musical performances.
- ❖ Rising productivity allows factories to cut prices and raise wages at the same time. But when wages rise, music venues have no alternative but to raise ticket prices to cover the higher costs.

3. Service sector productivity, service sector growth and economic growth

Change in prices of goods and services relative to overall price level



Source: Bureau of Labor Statistics consumer price index

Vox

Source: Leetim (2017)

3. Service sector productivity, service sector growth and economic growth

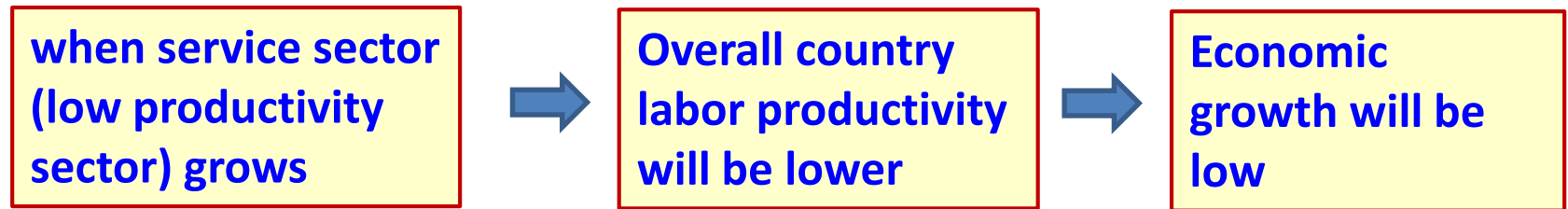
Possible “Baumol’s Cost Disease” counter arguments

- ❖ The cost of many services is actually rising faster than growing wages in the sector. **So, “Baumol’s Cost Disease” is not the whole story** (Leetim, 2017) Why this is the case? Example?
- ❖ Rising price of services might be associated with better quality of those services.
- ❖ When economy of the country grows, income increase, demand for services tend to increase ---- **Demand pull price of services up**
- ❖ **As manufacturing has gotten more efficient, the price of manufactured goods** like T-shirts and televisions **has fallen**. At some point, our living rooms and closets get full **and we don’t need any more of this stuff, so we spend less and less on it as prices fall**. What do we do with these savings? **We spend it on stuff that’s *not* getting cheaper like many services** (Leetim, 2017).

3. Service sector productivity, service sector growth and economic growth

3.2 Impact of service sector on economic growth

❖ Based on “Baumol’s Cost Disease”,



❖ However, each service sector can contribute directly or indirectly to economy.

- ✓ It can have direct, indirect and induced impact to GDP.
- ✓ Each service industry (especially intermediate service) might also help promote development of other industries (in agricultural, manufacturing or service sectors) in the economy.

3. Service sector productivity, service sector growth and economic growth (Paper1)

Possible counter arguments of “Baumol’s Cost Disease” implication on relationship between service sector growth and economic growth

- ❖ Dutt and Lee (1993) found that **the effect of a service sector expansion is either positive or negative depending on how the expansion is measured**, although there is a strong case that the effect is in fact usually negative
- ❖ Wilber (2001, 2002) argue that **the impact of service expansion will depend on the relative factor intensities in the economic sectors**
- ❖ New research shows that in **some service industries, heavy IT investments since the 90s have begun to yield high productivity returns and to positively push economic growth** – so the effect of the expansion of service sector depends on which services are expanding

3. Service sector productivity, service sector growth and economic growth

Possible counter arguments of “Baumol’s Cost Disease” implication on relationship between service sector growth and economic growth

- ❖ According to U.S. Department of commerce (1996), deciding whether slow growth is a consequence of the shift to service is complicated by the absence of satisfactory **performance measures** for many service industries
 - ✓ Traditionally, **productivity** is viewed mainly as an **efficiency concept**.
 - ✓ It is now viewed increasingly as **efficiency** and **effectiveness** concept
 - ✓ **Effectiveness** is being how the enterprise meets the dynamic needs and expectations of customers.
 - ✓ **Productivity** is now depends on the value of the products and services (**utility, uniqueness, quality, convenience, availability**, etc.) and the efficiency with which they are produced and delivered to the customers (Tolentini, 2004)

3. Service sector productivity, service sector growth and economic growth

3.3 Factors that might affect service sector growth

- ❖ Relative productivity (**Baumol's Cost Disease**)
- ❖ Income (**Engel's law**, hierarchy of needs)
- ❖ Shift in intermediate demand (**outsourcing**)
- ❖ **Human capital** and **information society**
- ❖ **Innovation** and **new technology**
- ❖ **Institution issues** (Regulation, public sector size, culture)

Source: Navarro and Roura (2010), also look at Figure 1 in the paper

3. Service sector productivity, service sector growth and economic growth

Engel's Law

❖ Note: **Engel's law**

- ✓ An observation in economics stating that **as income rises, the proportion of income spent on food falls, even if absolute expenditure on food rises**. In other words, the income elasticity of demand of food is between 0 and 1.
- ✓ The law was named after the statistician **Ernst Engels** (1821–1896).

3. Service sector productivity, service sector growth and economic growth

3.4 Labor productivity issues (and measurements)

- ❖ Method to measure productivity
 - ✓ **Partial productivity measures**
(such as labor productivity, capital productivity)
 - ✓ **Multifactor productivity measures**
 - ✓ **Total factor productivity measures (TFP)**

Source: Navarro and Roura (2010), also look at Figure 2 in the paper

3. Service sector productivity, service sector growth and economic growth

Labor productivity issues (and measurements)

❖ Measurement issues of productivity in service sector

✓ Choice of inputs:

- such as labor should be measured by **number of total employed** or **hours worked**
- The relationship between **labor input** and **intermediate input**

✓ Choice of output:

- **Definition of output** of some services (e.g. financial services) might not be the same across countries
- For several **services it is difficult to isolate price effects that are due to changes in quality** or mix of services from pure prices changes, and to adjust such quality changes in the price index

✓ Aggregate productivity growth: could have bias from

- The **relative weight that is attributed to the mismeasured services** in total value-added or employment of the economy
- **The role of specific services as intermediate inputs for other industries**

3. Service sector productivity, service sector growth and economic growth

Discussion

Based on the paper's 3 key objectives. Analyze finding of each objective on service industry your group choose

- ✓ Factors affect that service industry growth
- ✓ Impact of that service industry on economic growth
- ✓ Labor productivity issues (and measurements) in that industry

4. Service sector development in Asia

Park, D. and Shin, K. (2012). The Service Sector in Asia: Is it an Engine of Growth. *ADB Economics Working Paper Series, No. 332*.

What are key research questions or objectives of this paper?

The most important question or research objective is

“To empirically analyze the prospects for the service sector in Asia as a future engine of growth”

Other sub-questions or sub-objectives are

To explain

- (1) Evolution of the service sector in Asian Economies over time
- (2) The effect of Asian countries' income on service sector development
- (3) Effect of service sector on the Asian countries economic growth
- (4) Comparing labor productivity in service sector versus industry sector
- (5) Factors determining service sector productivity

4. Service sector development in Asia

Park, D. and Shin, K. (2012). The Service Sector in Asia: Is it an Engine of Growth. *ADB Economics Working Paper Series, No. 332*.

Findings

1. Evolution of the service sector in Asian Economies over time

- ❑ In general as a country industrializes, the shares of industry and service sectors in both GDP and employment rise whereas the share of agriculture falls.
- ❑ A number of Asian countries have been able to achieve substantial labor productivity gains in the service sector, which contradicts the conventional wisdom of labor productivity growth being difficult to achieve in services.
- ❑ Significant real output growth in the service sector comparable to that of the industry sector
- ❑ Service sector output that is exported tends to rise over time in most Asian countries.
- ❑ These suggest that services has already been a major source of growth in Asia.

4. Service sector development in Asia

Park, D. and Shin, K. (2012). The Service Sector in Asia: Is it an Engine of Growth. *ADB Economics Working Paper Series, No. 332*.

Findings

2. The effect of Asian countries' income on service sector development

The Relationship between per capita GDP and the share of services in GDP/employment indicates that

- ❑ some countries' service sector share is higher than that predicted by their per capita GDP while it is lower in other countries.
- ❑ However, the broader more fundamental trend is an increase in the share of services as income rises.

4. Service sector development in Asia

Park, D. and Shin, K. (2012). The Service Sector in Asia: Is it an Engine of Growth. *ADB Economics Working Paper Series, No. 332*.

Findings

3. Effect of service sector on the Asian countries economic growth

- ❑ When compute the contribution of agriculture, industry, and services to GDP growth, the paper finds that in general the service sector made the biggest contribution.

4. Comparing labor productivity in service sector versus industry sector

- ❑ A number of Asian countries, labor productivity growth rate of the service sector is quite high

4. Service sector development in Asia

Park, D. and Shin, K. (2012). The Service Sector in Asia: Is it an Engine of Growth. *ADB Economics Working Paper Series, No. 332*.

Findings

5. Factors determining service sector productivity

- ❑ The lower the per capita GDP, the greater the scope for labor productivity growth in the service sector.
- ❑ Since the income level of much of Asia remains relatively low notwithstanding the region's rapid growth, this implies that there is still a lot of room for services productivity growth.

4. Service sector development in Asia

Sectoral real GDP growth rate

	Period 1 (1960–1980)				Period 2 (1980–2000)				Period 3 (2000–2010)			
Economy	Agriculture	Industry	Services	Aggregate	Agriculture	Industry	Services	Aggregate	Agriculture	Industry	Services	Aggregate
China, People's Republic of	3.82	6.41	0.57	3.23	4.88	10.89	10.95	9.40	4.11	10.86	10.52	9.95
Hong Kong, China	–	–	–	–	–	–	–	–	–3.71	–2.77	4.28	3.04
India	2.68	5.99	5.43	4.32	3.02	5.67	6.74	5.35	2.94	7.63	8.89	7.43
Indonesia	3.59	8.36	5.89	5.88	2.78	6.18	5.42	5.21	3.39	3.99	6.77	5.08
Korea, Republic of	2.79	12.03	6.01	6.62	2.40	8.31	6.63	6.87	1.35	5.32	3.59	4.20
Malaysia	4.59	8.05	8.90	7.55	2.01	7.60	6.54	6.37	2.89	2.85	6.35	4.51
Pakistan	3.59	8.11	6.26	5.52	4.13	5.77	5.40	5.12	2.63	5.91	5.00	4.67
Philippines	4.06	6.56	4.76	5.28	1.57	1.44	3.10	2.25	2.81	4.10	5.43	4.65
Singapore	2.01	9.16	7.84	8.25	–4.29	6.87	7.52	7.24	–4.31	5.08	5.78	5.54
Taipei, China	3.56	11.81	9.35	9.26	0.48	4.87	8.02	6.63	0.03	5.80	2.85	3.76
Thailand	4.61	9.92	7.40	7.31	2.67	7.89	5.47	5.96	2.07	5.18	3.70	4.22
Viet Nam					3.65	8.67	6.74	6.40	3.52	8.70	7.09	6.99
Average	3.53	8.64	6.24	6.32	2.12	6.74	6.59	6.07	1.47	5.22	5.85	5.34

“–” means data not available.

Note: Agriculture refers to ISIC divisions 1–5 and includes forestry, hunting, and fishing. Industry refers to ISIC divisions 10–45 which comprise mining, manufacturing, construction, electricity, water, and gas. Service refers to ISIC divisions 50–99 that cover wholesale and retail trade, transport, and government, financial, professional, and personal services. The data are collected from World Bank, World Development Indicators online database except for Taipei, China and Viet Nam for which we rely on national sources. We use 2000 market prices for all countries except for Taipei, China and Viet Nam for which 2006 and 1994 market prices are used, respectively. Due to the lack of data for Viet Nam, the second period average is calculated by using 1988–2000 data.

Sources: State Bank of Viet Nam; World Bank, World Development Indicators online database; <http://www.cbc.gov.tw/imp2.html> (all data accessed 14 March 2012)

Source: Park and Shin (2012)

4. Service sector development in Asia

Sectoral labor productivity growth rate

Economy	Period 2 (1980–2000)				Period 3 (2000–2010)			
	Agriculture	Industry	Services	Aggregate	Agriculture	Industry	Services	Aggregate
China, People's Republic of	4.52	7.88	5.30	7.46	6.10	7.93	8.07	9.54
Hong Kong, China	–	–	–	–	–0.24	1.67	1.88	2.34
India	–	–	–	4.46	2.05	2.02	5.41	4.90
Indonesia	–1.66	0.98	–4.98	–1.43	3.25	1.40	3.83	3.34
Korea, Republic of	6.14	6.38	2.03	4.78	5.59	5.74	1.57	3.32
Malaysia	0.50	1.79	0.91	1.68	4.26	2.05	2.10	2.08
Pakistan	1.52	5.43	1.64	2.82	–1.81	3.54	4.39	2.24
Philippines	0.71	–1.35	–1.21	–0.29	1.13	1.89	1.84	1.75
Singapore	–7.36	4.17	4.54	4.40	–8.58	5.29	0.78	1.88
Taipei, China	3.27	3.70	4.33	4.78	3.00	5.16	1.17	2.75
Thailand	2.01	3.29	1.05	3.88	2.94	2.71	0.08	2.44
Viet Nam				4.46	3.00	0.73	3.10	4.38
Average	1.07	3.59	1.51	3.36	1.72	3.34	2.85	3.41

“–” means data not available.

Note: See note for Table 1. Since the employment data start from 1980, we do not report statistics for period 1. Due to the lack of data, the second period average is obtained by using 2005–2010 for Viet Nam and 2000–2005 data for India.

Sources: State Bank of Viet Nam; World Bank, World Development Indicators online database; <http://www.cbc.gov.tw/mp2.html> (all data accessed 14 March 2012)

Source: Park and Shin (2012)

4. Service sector development in Asia

Sectoral contribution to GDP growth rate

Economy	1980s				1990s				2000s			
	Agriculture	Industry	Services	Aggregate	Agriculture	Industry	Services	Aggregate	Agriculture	Industry	Services	Aggregate
China, People's Republic of	21.3%	35.4%	43.4%	8.9	7.6%	52.4%	40.1%	9.9	4.5%	52.8%	42.7%	10.0
Hong Kong, China									-0.1	-7.2	107.3	3.0
India	21.3	29.0	49.7	5.3	13.2	25.8	61.1	5.4	7.2	27.1	65.7	7.4
Indonesia	12.7	45.2	42.1	6.2	8.1	55.0	36.9	4.2	9.5	34.1	56.4	5.1
Korea, Rep. of	3.2	41.5	55.3	8.1	1.7	41.1	57.2	5.6	1.3	51.2	47.6	4.2
Malaysia	9.6	47.2	43.2	5.8	1.4	54.7	43.9	6.9	5.1	28.0	67.0	4.5
Pakistan	18.8	28.0	53.2	5.9	26.1	22.4	51.6	4.3	13.1	31.6	55.3	4.7
Philippines	10.7	7.7	81.7	1.7	10.3	31.4	58.3	2.8	7.7	29.5	62.8	4.7
Singapore	-0.4	29.2	71.2	7.5	-0.1	36.1	64.0	7.0	-0.1	30.9	69.1	5.5
Taipei, China	-0.1	32.4	67.7	7.2	-0.1	22.3	77.8	6.1	0.0	50.2	49.8	3.8
Thailand	6.9	42.0	51.0	7.6	3.8	53.5	42.6	4.3	4.0	54.3	41.7	4.2
Viet Nam					16.1	46.6	37.3	7.3	10.2	50.3	39.5	7.0
	10.4	33.8	55.8	6.4	8.0	40.1	51.9	5.8	5.2	36.1	58.7	5.3

Note: The sectoral contribution in each decade is calculated by dividing the log difference in the sectoral value-added by the log difference in the aggregate GDP (multiplied by the weights). The first three columns in the three panels (1980s, 1990s, and 2000s) sum up to 100%. The last column in each panel is the aggregate GDP growth rate in each decade. Data are from the World Bank, World Development Indicators online database (accessed 14 March 2012).

Source: Authors' estimates.