Summaries

Fiscal Policy, General Purpose Technologies, and Economic Growth

Shinji Kobayashi

Technological progress has been considered as one of the most important factors in economic growth. When new technologies are available, old technologies will generally become obsolete. In this paper, we address the question of how the introduction of a new technology affects the growth rate of output and what effects government expenditures have on the rate of economic growth.

We first analyze the effects of fiscal policy on the growth rate in a model with exogenous technological change. We then examine the effects of fiscal policy on the growth rate in an endogenous R&D model with government spending based on the Schumpeterian creative-destruction model à la Aghion and Howitt (1992, 1998).

We show that if technological advances are large enough, then it would be possible that a change in the growth rate due to a change in government expenditures might be negative. We also demonstrate that in the growth model with endogenous R&D, fiscal policy can be effective in that it would increase the long-run growth rate, but could reduce the short-run growth rate through capital obsolescence due to the creative destruction effect of R&D enhanced by government spending.

Regulation and Productivity

Tomohiko Inui

The size of the service industry within the Japanese economy is increasing and its productivity growth accounts for an enormous part of the productivity growth of the overall economy. The Annual Paper on Economy and Public Finance, released by the Cabinet Office, identifies the decline in service industry productivity as a major factor behind the downturn in productivity of the overall economy in the 1990s. The focus of this paper is the relationship between productivity and regulation in the service industry. Empirical analysis of the impact of regulation on productivity growth was conducted using a regulation index formulated independently by the authors, in addition to the production factor and productivity (total factor productivity) data estimated by Fukao et al (2003). Estimates were carried out according to industry sector (total/manufacturing industry versus service industry) and time period (1980-1990 versus 1990-1995) for each case.

Concerning the total industry, we can see that R&D and regulation exerted a significant influence on productivity growth rate. The influence of R&D was particularly strong for the first period (1980-1990). IT capital had some influence on the productivity growth in the second period 1990-1995, but this was not especially strong. The influence of R&D on the manufacturing industry's productivity was greater than that on the service industry. In the service industry, regulation had a strong negative impact on its productivity. It was thus inferred that the easing of regulations brought about an increase in productivity in the service industry. The impact of IT capital on both the manufacturing and service industries strengthened in the second period.

It must be acknowledged that our analysis is still limited. The external effect of R&D and IT Capital, the substitution between IT and non-IT capital and the vintage effect of capital need to be examined. In addition, the impact of globalization and the further refining of data of the regulation index is necessary. These are issues we hope to address in future research.

The Economics of Information Technology

Yasuo Nakanishi

This paper presents an economic analysis of information technology involving a validation analysis using the Translog cost function. The analysis is divided into three sections: IT capital and employment; IT and the macro economy; and IT externalities.

Firstly, with regards to IT capital and employment, IT is a rapidly growing industry and IT capital exerts a significant impact on the economic environment, particularly with respect to business. The relationship between new capital and employment is worthy of consideration. Does IT capital generate a net increase in employment opportunities or a net decrease? Looking at the elasticity of substitution, the elasticity of substitution between labor and IT capital is at a maximum among all other capital. The elasticity of substitution between IT capital and labor was roughly equal to the elasticity of substitution between overall capital and labor up until 1985; thereafter, it began to increase significantly.

The corresponding values for IT capital and capital stock, and for IT capital and labor, increase through the latter half of all periods. This trend is particularly pronounced for IT capital and labor in the latter half of the estimation period. The value for capital stock and labor, meanwhile, has remained resolutely constant. As a result, the impact of IT capital has been rising in recent years, particularly given the high wage levels in Japan, which means that labor has greater value than other input factors. This is reflected in rising elasticity of substitution values.

IT capital's own price elasticity of demand was the lowest of the input factors, while general capital's own price elasticity of demand was the highest. All the values were found to be increasing gradually over all the estimation periods.

Capital stock was the single largest contributing factor to the decomposition of labor demand, while IT capital was the less significant contributor to labor demand. The impact of capital and labor has fallen in recent years. The impact of IT capital, on the other hand, is rising, and hence the importance of IT capital.

The second section of the analysis – IT and the macro economy – involves empirical verification of the role of IT capital in the domestic macro economy. The shadow price of IT capital is determined in order to assess the contribution of IT capital to productivity and economic growth. The corresponding impact of IT capital on general capital and labor is also discussed.

We constructed a Translog cost function model incorporating IT capital. No problems were encountered in the estimation results, and the Translog cost function incorporating IT capital was therefore considered to be valid.

To begin with, the shadow price of IT capital fell from the start point through to 1991, where it reached a minimum. It rose slightly during 1993 and 1994. Fluctuation has been minimal since 1989.

The shadow price of IT capital has behaved quite differently over the last few years compared to the first half of the estimation period. Our results show a substantial decline in the price of IT capital, which could be the cause of relatively constant inflation in recent times.

Secondly, IT capital exerts a negative influence on TFP growth. Up until 1988, in fact, it was the most negative of all the input factors. However, although the influence on TFP growth has been almost always negative, this influence is gradually waning, due to the increasing positive impact of IT capital on technological progress. Our results support the productivity versus IT capital paradox. Although we were unable to demonstrate the positive influence of IT capital on TFP growth, we did find an influence on output. IT capital is generally thought to contribute to output growth, and this was borne out in our results: IT capital had a significant positive impact on output growth.

The third section of the analysis – IT externalities – involves empirical verification of the externalities of IT capital. A quantitative analysis of actual data was used to determine whether, for a given industry, IT capital contributes to production not only in that industry but also in other industries, by generating externalities. We analyzed the effect of intra-industry IT capital externalities on the domestic manufacturing industry using a duality based Translog cost function model. The main findings were as follows.

All parameters associated with IT capital externalities were found to be significant and to have an effect. Values for elasticities of cost with respect to IT capital externalities were all negative, in line with the theoretical figures. IT capital externalities were found to decrease costs in all industries over all periods. All the elasticities of cost with respect to IT capital externalities rose to a peak in 1988 and 1989. The analysis results were far in excess of those reported by Morrison and Seigel (1997). All elasticities of labor with respect to IT capital externalities were negative, which means that the increase in IT capital elasticities indicates a decrease in labor. A substitution of IT capital and labor is definitely occurring.

The Anatomy of the International Monetary Conferences of 1878, 1882, 1892

Takehiko Noguchi

This article is aimed at showing the difficulties of the international monetary system from the early 1870s to 1900, contrary to the conventional view. According to the traditional approach, the period from 1880 to 1914 was the age of the classical gold standard which meant a stable international monetary system similar to Ricardo's model of the international gold standard. Ricardo's model has focused on the efficiency and economic function of the gold standard. Therefore, observations on the origins of the monetary institutions and historical processes leading to the unified international monetary regime with various internal and international conflicts have not received much attention in the literature.

In writing this article, I am indebted to the pioneering work of de Cecco's Money and Empire, recent studies such as B. Eichengreen's Globalizing Capital, and in particular, G. M. Gallarotti's The Anatomy of An International Monetary Regime with holistic approaches paying attention to the political, economic and ideological forces which played the major role of the function, origins and stability of the gold standard.

In this article, I am attempting to analyze the international gold standard with an interdisciplinary approach, concentrating on the "gold and silver question" from the beginning of the 1870s to the early 1890s. I used mainly the Reports of the International Monetary Conferences of 1878, 1881 held in Paris, and 1892 held in Brussels, referring to the Final Report of the Royal Commission of 1886-8 appointed to inquire into the depression of trade and industry and Reports from the Royal Commission of 1887-8 on the recent changes in the relative values of the precious metals.

My conclusion is as follows: The 19th century international monetary system was established in 1816 with the introduction of a mono-gold standard by Britain and it was kept stable thanks to the intermediary role of France until 1871 when unified Germany which obtained a huge amount of indemnity from France, followed Britain with a strongly motivated desire to become a world power, embarked on selling a lot of silver in the international market from 1873. Other Continental nations and Nordic countries abandoned the silver standard or bimetallic standard and followed Germany which caused a continuous depreciation of the silver value after the middle of the 1870s.

As a result, the ratio between gold and silver began to fluctuate and seriously damaged the economies of silver standard and bimetallic standard countries such as India and the United States. Even Britain itself received a big

blow on its economy and society because of its heavy dependence on the large income from India paid in declining silver value as a cost of British rule over India.

France also had powerful financial forces in Paris engaged in arbitrage transactions of gold and silver. They wanted to keep a silver standard and bimetallism in the world economy. The United States was the most powerful stronghold of a silver standard as there were many farmers, silver-mining owners and workers, and various small business entrepreneurs who were traditionally accustomed to a silver standard. Confronted with the restriction of silver mintage in France and the United States, they clearly became the victims of the spreading gold standard.

The International Monetary Conferences of 1878 and 1881 were convened in Paris in compliance with the governments of France and the United States. It is noteworthy that almost all advanced Western nations sent their delegates to the Conferences to discuss on how to solve the gold-silver problem. No agreement was reached in these Conferences.

The Conference of 1892 was then held in Brussels, not in Paris, because the partnership between France and the United States dissolved. The main problem of this Conference was, of course, how to recover a stable ratio between gold and silver through international cooperation, that is, an international agreement on the ratio. Many plans were proposed and discussed to solve the problem, however, unsuccessfully because almost all the member states in the Conference thought that the possibility of transition from a silver standard or bimetallic standard to a mono-gold standard was inevitable in the near future. How was the problem solved? It was unexpectedly solved by the discovery of huge gold mines in South Africa toward the end of the 1880s because South Africa could guarantee a plentiful supply of gold for the world economy.

Evaluation of the Post Cold War World in Japan

Shigeo Nakao

Economic science in Japan has been largely silent on the issue of how to interpret the overall structure of the post Cold War world. Elsewhere in the world, this issue has been widely debated in the context of economics, politics and international relations. Such a significant difference in outlook among academic societies must be considered in the context of the collapse of socialism after the end of the Cold War. Also, domestic economic debate in Japan has lost much of its momentum following the collapse of the bubble economy in the 1990s, in stark contrast to the heady talk of economic superpower status in the 1980s. However, in light of the pace of political and economic upheaval occurring all over the world, the more pressing issue is what to make of the world map today.

This paper reviews the main theoretical constructs of debate on the global economy in the world followed by the examination of some of the debate prevalent within Japan since the post-war occupation, such as that on General MacArthur and the Korean War. This is pertinent because post-war Japanese history has tended to understate the importance of world politics and economics, despite the complex manner in which global developments intertwine outside Japanese society. The sense of "shock" that pervades many of these debates, from the Korean War to the Nixon shock, the Plaza Accord and the recent threat posed by China, may well be attributable to Japan's failure to understand the international situation.

This paper considers the failure of Japanese society to appreciate the realities of the world order during the Korean War, looking in particular at the discrepancy between public sentiment and the actual information available in the world. The author strongly believes that Japanese society, even today, still harbors the same fundamental errors in perception.

American Accounting Firms and Wall Street Vested Interests

Takashi Hirose

The collapse of energy giant Enron Corp. at the end of 2001 and leading long-distance telecom carrier WorldCom, Inc. in 2002 represented the two largest successive bankruptcies in history in terms of total assets. The US economy was then rocked by a series of major financial scandals in 2002 and 2003 when it was discovered, in the aftermath of the bankruptcies, that global accounting firms had failed to fulfill their duty to monitor Wall Street corporate accounts and provide honest and accurate auditing reports to investors throughout the world. In fact, these accounting firms had been deliberately engaging in large-scale deceit in order to protect the lucrative management consulting income that they earned in addition to auditing services.

During the 1980s, the eight major accounting firms, dubbed the "Big 8," stood at the pinnacle of the financial system and monopolized the system, boasting a clientele consisting of the majority of the listed companies in the country. It was at this time that the Big 8 began moving aggressively into the consulting field. By 2000, the Big 8 had been reduced to the Big 5 through consolidation. One of these, Arthur Andersen, had been responsible for auditing both Enron and WorldCom, and was subsequently banned from providing auditing services. The company eventually folded, reducing the Big 5 to just four today.

American accounting firms were set up by Europeans at the end of the 19th century, but soon established ties with American industry cliques. The crash of 1929 and subsequent Depression led to the enactment of the 1933 Securities Act which sought to regulate accounting practices, imposing mandatory external auditing of corporations by qualified accountants. However the US Securities and Exchange Commission (SEC), launched in conjunction with the Securities Exchange Act in 1934, became so closely linked to corporate rating companies, banks, securities firms, the Board of Governors of the Federal Reserve System, government, and Congress that it no longer fulfilled its appointed role. Indeed, during the financial misdeeds uncovered from the 1980s onwards, the SEC was repeatedly found to be in collusion with the accounting firms. The web of personal connections that is firmly entrenched in economic circles and in Wall Street remains largely intact today, still smeared in allegations and suspicion.

The Credit Risk Revolution: From a "Risk-Free Society" to a "Risk Society"

Yoshitaka Kurosawa

Japanese corporate society was largely unburdened by credit risk over the 60-year period since the 1930s, both within industry and among individuals. Any company considered a bad credit risk — that is, unable to repay its debts — was provided with assistance by the banks in order to prevent bankruptcy. Further, in the unlikely event of a genuine bankruptcy, the banks would buy up any defaulted corporate bonds, thereby shielding investors from risk. All credit risk was absorbed by the banking system and ultimately borne by government. This approach was predicated on the belief that prevention of corporate bankruptcies was less costly for society overall.

Following a reappraisal of this approach during the mid-1990s, however, businesses, individuals and banks now find themselves exposed to credit risk, and the underlying basis of competition in corporate society has begun to shift from average cost standard to marginal cost standard. When competition is predicated on marginal cost standard, there is no financial basis to provide for costs associated with lifetime employment and seniority systems. Competition carries with it the threat of bankruptcy, so investors holding corporate bonds and shares want information about credit risk. Companies with high credit risk will find funding more expensive, while companies with a good record will be able to procure funds at lower interest rates. Notwithstanding traditional business practices such as bank loan giveaways and intra-industry cooperation, Japanese corporate society is steadily moving towards the "risk society" model. Meanwhile, as individuals begin to shoulder more credit risk, differences in knowledge and wealth will exacerbate the gap between rich and poor. In order to maintain the dynamism of domestic Japanese industry, there is need for further study of the nature of competition and information dissemination in the "risk society" model.

Globalization and the Effects of Foreign Bank Entry in Emerging Market Economies

Hidetoshi Hashimoto

Recent years have seen a rapid increase in the expansion of foreign banks into emerging market economies, buoyed by the forces of globalization. This has given rise to extensive debate on the advantages and disadvantages for the banking sectors of the host countries. However, existing studies in this area have tended to focus on the behavior of the foreign banks, without taking into consideration factors such as the initial market conditions and the industrial structure of the host regions.

This study assesses the benefits of foreign bank expansion in emerging market economies from the 1990s onwards and the role of the foreign bank, based on a comparative analysis of Central and Eastern Europe, Latin America, and Southeast Asia. Especially, in the case of Southeast Asia, the impact of the ethnic Chinese business group is also considered. Finally, the policy implications of the deregulation of market entry for foreign banks are derived.

Through the discussion, the pattern of expansion in the 1990s is illustrated and the entry of foreign banks is shown to boost efficiency levels in the domestic banking sectors of emerging market economies. Thus, basically the deregulation of market entry can be viewed as an appropriate policy. However, the role of the foreign banks differs between host regions. Moreover, the abolition of market entry regulations does not necessarily guarantee efficiency improvements in the domestic banking sector in every case. In order to improve efficiency in the domestic banking sector while accommodating the forces of globalization, it is necessary to set up a market environment (particularly with respect to legislation and capital market arrangements) that enables each bank to play to its own strengths, thereby encouraging the provision of a variety of different financial products and services. In the real sector, meanwhile, it is important to promote high quality direct investment in conjunction with technological transfer and encourage modernization of domestic corporate sector as the source of demand for financial services.

Regional Safety Net Initiatives in the Age of Globalization

Namiko Numao

In the post-war period, Japan was able to construct a welfare state with the government providing the people with guaranteed livelihood, thanks to continued economic growth that generated stable fiscal revenue. Taxation revenue is provided under a tax system predicated on income tax with a strongly progressive income tax structure, which manages to achieve more equitable income distribution. Meanwhile, redistribution of taxation from the central government to local government, principally through the local allocation tax and treasury disbursements, is used to redress regional disparities and promote uniform growth and development across the nation.

However, the forces of economic globalization have had a major impact on this system. The government now espouses the principles of smaller government predicated on the idea of individual responsibility and decision-making, and is moving towards higher user contributions and market-dependent service delivery. This shift in approach has generated issues throughout the country with respect to welfare service delivery.

The challenge at the local level is to construct socioeconomic systems capable of furnishing the goods and services necessary for every life while also filling in those areas that have fallen through the cracks of the existing market economic system. One of the many different approaches being considered is the establishment of local currency.

Introducing and utilizing a local currency would be a difficult undertaking. The system would be dependent on the integrity of its participants, and in order to function properly it would require a sense of community spirit, of joint purpose. Some form of government involvement would be inevitable for most local currencies in Japan. A contrasting example is the city of Ithaca in the United States, where the government has made no commitment whatsoever to the local currency, and residents and government are involved in different activities from their respective perspectives.

Given that the local government in Japan has an important role to play in regional safety net initiatives, it is necessary to exercise caution in the push towards small government, in order to ensure that these reforms do not exert an adverse effect on regional safety net initiatives.

Transformation of the German Pension System

Harunobu Onagi

Germany was the first country in the world to introduce social insurance, in the form of a public pension scheme known as the Bismarck's social insurance system that appeared in the late 19th century. The pension system was predicated on ability to pay — that is, benefits were directly linked to contributions. Rather than providing a minimum 'safety net' guarantee, the system was designed to minimize the drop in living standards after retirement and provide continuity of livelihood. It was funded nearly equally by employers and employees, and in this sense was a faithful embodiment of the insurance principle. While the basic principles of ability to pay and assurance remain intact today, post-war reforms have brought about significant changes to the pension system.

The main turning point was the pension reforms of 1957, which sowed the seeds for fundamental changes to the very meaning and role of the pension system. The most significant aspects of the reforms were the introduction of the 'dynamic pension' principle — where benefits increase on a sliding scale relative to current income of the generations still working — and the transition from an accumulation system to a pay-as-you-go financing system based on inter-generational agreements, the latter considered a necessary adjunct to the dynamic pension approach. The pay-as-you-go financing system subsequently became the norm for public pension systems in a number of other countries, including Japan.

The limitations of the pay-as-you-go financing system were exposed in the latter half of the 1980s, as the trend towards smaller families and the aging of the population began to gather momentum. In Germany, there was an increasing push to tie the pension system in with strategies designed to arrest the declining birthrate, such as preferential treatment for women staying at home to raise children. More recently, there have been calls for further ongoing measures through the pension system to support parents raising children. This is an issue which lies at the root of the pension system.

This paper examines the mechanisms of change in the German public pension scheme, where we notice a certain degree of continuity, particularly during the period of economic upheaval after the war and in response to declining birthrates and the aging population since the 1980s, viewed through the prism of postwar pension reforms. A proper understanding of the mechanisms of change will inform us about the possibilities and limitations of public pension systems as well as social security systems in the wider sense.

On International Specialization and Agglomeration in East Asia: Towards a New International Division of Labor

Mitsuo Honda

This paper analyzes international production location and trade patterns, and considers the relationship between production location and international specialization in light of production activities in Asia, giving particular attention to China. In recent years, economic activities (especially high-tech industry) in East Asia have shown a different trend to that observed previously; and this new trend is thought to be forming a new international division of labor. This paper discusses the keywords of fragmentation, agglomeration, and trade cost.

The traditional approach to international specialization is based on microeconomic general equilibrium theory and attempts to clarify decision mechanisms for international production location and trade patterns. Sources of gain from trade are required by exogenously given disparities between countries. Under the comparative cost theory (Ricardo Model), this is the disparity between the production technologies of two countries; under H=O (Heckscher-Ohlin Model), it is the disparity between the production factor endowment proportion of two countries. However, international specialization in recent years has evolved into a pattern that has arisen from an increase in trade of parts and intermediate goods (resulting from the globalization of production) and a corresponding increase of trade at production and distribution levels. Transaction among nations and among firms accompanying this expansion of trade in parts and intermediate goods as well as industrial clustering has stimulated the development of a new line of theoretical thinking, particularly the literatures of the fragmentation model and the agglomeration model.

This paper classifies intra-industry trade into three patterns – vertical specialization, horizontal specialization, and fragmented specialization – and discusses the characteristics of division of labor with East Asia as a fragmented specialization pattern. The paper furthermore considers a new international division of labor model, applying an industrial organization theory approach.

Trends in the Location of Japanese Businesses in China

Naohiko Ijiri

Since the 1990s, China has continued to strongly draw foreign direct investment from countries around the world. This powerful attraction has resulted in China having now accepted approximately 10% of the world's foreign direct investment. This paper aims to analyze the current situation with regard to the acceptance of regions throughout China of inward investment from Japan and countries around the world, with special consideration given to the corelationship between economic disparity and differences in degree of direct investment accepted among regions. Previous research has focused on comparisons between investing countries in analyzing trends in overseas direct investment; however, comparing "countries" is a problematic method of analysis in cases where national territories are broad and economic exchange between domestic regions incurs various costs. For example, each of China's regions refuse on average 10% of overseas direct investment; though there is disparity among regions in the foreign investment amounts accepted. In other words, even within the same country, regions differ in their ability to attract direct investment. According to arguments presented in previous research, the factors causing these differences stem from varied locational advantage at the regional level. Moreover, in the case of geographically immense countries, analysis is required not only on the national but also the regional level. Thus this paper analyzes trends in direct inward investment in China at the regional level, with particular focus on the situation regarding the penetration of Japanese businesses into regions throughout China.

Foreign direct investment in China comprises 4.6% of Japan's direct outward investment in monetary terms but 17.5% in terms of number of business operations established, an amount approximately equal to Japan's direct investment in the United States. Thus China is one of Japan's largest investment destinations. Looking at investment in each region, Japanese businesses are concentrated in the coastal region – particularly Shanghai and Jiangsu – and the number of companies penetrating to the interior is smaller. This unbalanced preference towards the coastal region is thought to be the result of Chinese government policy regulations and guidelines, but these regions are also on a higher level compared with other regions in terms of population, economic scale, and educational standards. Furthermore, harbor facilities are available in these regions, which are also a relatively close distance from Japan. In other words, favorable locational factors for foreign direct investment can be found in these regions. Besides political factors, economical factors such as these are also

instrumental in attracting direct investment to these regions from Japan and countries around the world.

Analysis of Trade and Foreign Direct Investment from a New Economic Geography Perspective

Wu Yiliang

The idea of the New Economic Geography approach to analysis, a combination of conventional trade theory and economic geography advocated by Paul Krugman among others, began to gain acceptance in the 1990s. This approach has been used by Monfort and Nicolini (2000), Behrens *et al*. (2003) and Wu (2004a) to set up a two country-four region model for simultaneous analysis of the international and intraregional industry of distribution. Monfort and Nicolini (2000) and Behrens *et al*. (2003) are essentially the same models, based on the assumption that the agricultural labor force is constant in each region, so local markets are exogenous. Wu (2004a), on the other hand, assumes that all labor (manufacturing labor and agricultural labor) can move between the two regions in a country, so the local markets are endogenous. In this sense, Wu's analysis is more general.

Borrowing from Wu (2004a), this paper investigates the impact of transport and customs clearance costs based on a spatial equilibrium re-analysis using a modified version of the production function for agriculture, accompanied by a social welfare analysis. The following conclusions were obtained. As a result of falling transport costs and the controlled foreign trade policy in each country, manufacturing sectors tend to stabilize, over the long run, towards a distribution characterised by dispersion at the international level but with agglomeration at the domestic level. At the domestic level, a region with a large size initial population is more likely to develop a manufacturing core region in the future. In terms of social welfare, in that case the manufacturing sector is concentrate in one country and the real wage is higher in the manufacturing core country than in the agricultural periphery country. The change from this distribution to a two country symmetrical distribution tends to reduce the welfare level of the manufacturing country while raising the welfare level of the agricultural country. Also, the two country symmetrical distribution has a positive impact on welfare levels of the world. Thus, it is effective in improving the welfare level of the home country and of the world, by a temporary protection trade policy of the periphery country.

Economic Development and Industrial Agglomeration in Developing Countries: A Study of Regional Economic Development in China

Yugun Riku

This paper examines the correlation between economic development and industrial agglomeration in developing countries. Conventional international trade theory as advocated by Ricard and Heckscher-Ohlin trade theory holds that the type and location of industry, the type of goods being traded, and the manner in which they are traded are all determined by initial conditions such as externally imposed technology differentials and the production factor endowment ratio. Thus, the location chosen by industry is related to the level of trade specialization, as defined by the comparative advantage of the host country.

However, when the phenomenon of spatial industrial agglomeration is factored in, these theories are unable to describe the location and composition of industrial agglomeration. Developing countries, where labor resources tend to be more plentiful than capital, have comparative advantage in labor-intensive production. In order to use this comparative advantage as an initial condition to obtain the benefits of agglomeration, developing countries must use aggressive incentives to attract industry. Governments clearly have a key role to play in this regard.

In this paper, I have constructed an analysis mechanism for the relationship between economic development and industrial agglomeration in developing countries from the perspective of development economics, based on the three sectors economic development framework in developing countries. The analysis takes into account spatial economic considerations such as the impact of the initial local market size and border regions (where transport costs tend to be lower) on agglomeration of industry, and combines the following three factors: spatial agglomeration of industry, site considerations broken down by production process, and factor intensity.

The following conclusions were obtained based on the analyses performed. The government's role in the developing countries becomes increasingly clear when factors such as spatial industrial agglomeration and industry siting considerations are factored into the relationship between economic development and industrial agglomeration in the context of the three sectors economic development framework described in this paper. Given that developing countries generally have access to more labor resources than capital resources, they enjoy comparative advantage in labor-intensive industries. In order to use this comparative advantage as an initial condition for extracting the benefits of industrial agglomeration, developing countries should target labor-intensive

industries rather than capital-intensive industries, using aggressive incentives to attract industry to border regions in particular.

Citing development in North Jiangsu region in and around Xuzhou, this paper investigates issues with regional economic development in light of the implications of the three sectors theoretical model, and demonstrates the necessity of development strategies for promoting industrial agglomeration designed to augment initial conditions in those regions that have not benefited from the same rate of economic growth.

Industrialization in China's Coastal Areas and Industrial Agglomeration, with Reference to the Influences of Initial Conditions on the Performance of Industrial Development Zones

Tadahiro Tsuji

This paper examines the proposition, brought to us by Spatial Economics, which holds that new industry siting decisions are governed by initial conditions. To this end, I will provide an analysis for divergence of industrial agglomeration and performance in three industrial development zones in Jiangsu Province with consideration of the influence of initial conditions in the cities located in each zone.

I begin by considering the overall development of the Chinese economy in terms of its degree of openness, and in doing so, will identify an important factor for the concentration of economic development in the coastal regions, namely that spectacularly rapid industrialisation is directly linked to past successes. For instance, many of the cities that are today home to fast-growing export-oriented industries are those that opened up their local or regional ports at key points in history such as the Opium War.

Next, I will examine the impact of fast-growing Jiangsu Province on the domestic economy overall. Although Jiangsu Province accounts for less than 10% of China's total land area, it contributes an enormous proportion of the total economic drive.

Interestingly, the three cities in Jiangsu Province analysed in this paper had largely closed ports prior to the Open Door Policy. The correlation between economic growth and industrial agglomeration in these three cities and their associated industrial zones is analysed with reference to industrial siting considerations as well as history. The analysis demonstrates that development in each city was influenced to varying extents by economic policy in China following the introduction of the Open Door Policy, initial conditions in each region, and new conditions that subsequently evolved.

In this way, it can be seen that both the initial conditions in each city and the conditions subsequently created by human activity have proved to be key determining factors on the industrial agglomeration of coastal regions in China.