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Approaching a Triumphant Span

How Far Is China Towards its Lewisian Turning Point?

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February 2008

Abstract

With the aid of an analytical framework of the Lewis model revised to reflect the experience of China, this paper examines the country's dualistic economic development and its unique characteristics. The paper outlines the major effects of China's growth as achieved during the course of economic reform and the opening-up of the country: the exploitation of the demographic dividend, the realization of comparative advantage, the improvement of total factor productivity, and participation in economic globalization. By predicting the long-term relationship between the labour force demand and supply, the paper reviews the approaching turning point in China's economic development and examines a host of challenges facing the country in sustaining growth.

Keywords: demographic dividend, Lewisian turning point, economic development, China

JEL classification: J11, J21, O53

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1 Introduction

The discussion and understanding of the stages of development have long been the tradition of development economics and are considered to be the key in exploring the diversity among countries in terms of economic achievements. It is generally believed by economists that some countries were able to accomplish rapid economic growth and move out of poverty, because they successfully advanced through the inevitable stages of economic development, while other countries performed badly and remained trapped as underdeveloped, because they stagnated at an earlier stage of development. Therefore, despite of existence of competing theories and policy advocacies on the stages of development (for example, see Rostow 1963), economists are continually trying to contribute to the classification of development stages and to apply it to their own theoretical models and for advising policymakers (see Sachs 2004). The pioneer in the attempt to categorize the stages of development for all economies in the entire development history is Rostow (1960). According to his classification, the development stages of all countries can be divided into five categories: (i) the traditional society; (ii) the preconditions for takeoff, (iii) the takeoff, (iv) the drive to maturity, and (v) the age of mass consumption. A more recent classification of development stages and application to today's phenomena of distinct economic performances among developing countries is given by Sachs (2004). According to Sachs, the development process from poverty to wealth is divided into the commercial stage, the industrial stage, and the knowledge-based stage, and each phase poses different challenges for economic policy and strategy.

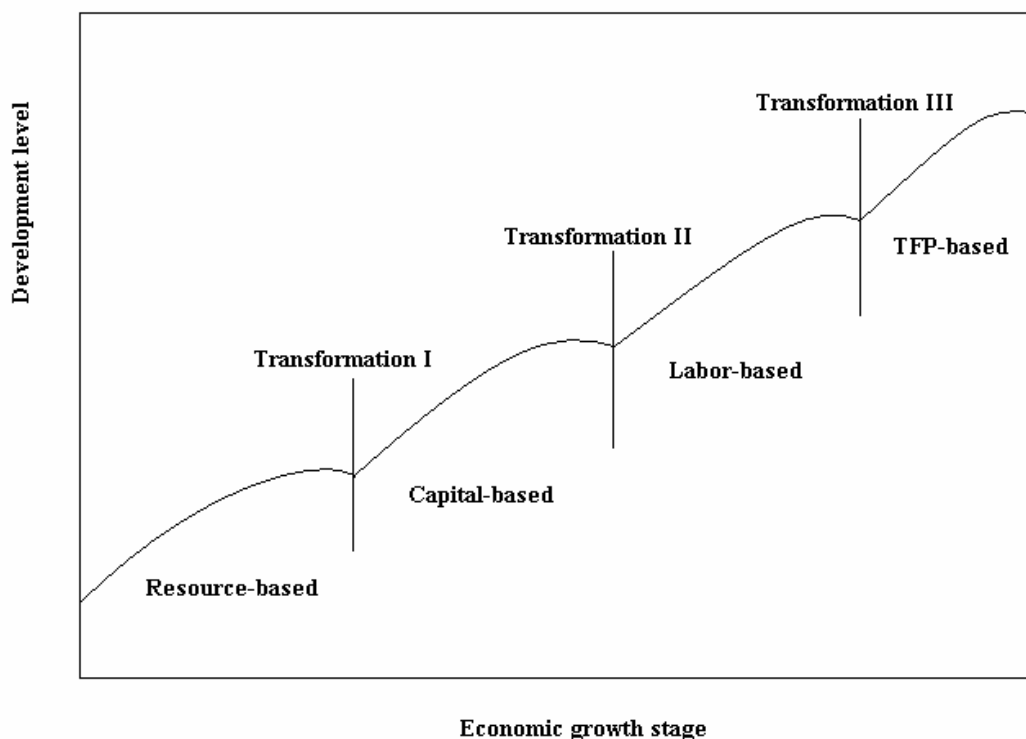
However, Rostow's classification criterion does not clearly explore the factors believed by mainstream economics to be vital to economic growth, nor does Sachs consistently follow the criterion throughout all the stages he classifies. Lewis's categorization of two sectors offers a better theory of what triggers economic growth at the dual economy stage or at modern growth stage (Lewis 1954). Lewis, in examining developing economies, rejected the neoclassical assumption of limited labour supply and divided a typical developing economy into two sectors: the *capitalist sector* and the *traditional sector*.¹ In the traditional sector, population size is large compared to capital and natural resources, and thus the supply of labour is unlimited. In other words, the sector's marginal productivity of labour is very low. Existence of the traditional sector enables the modern economic sector, as it expands, to obtain the necessary labour force at constant wage rates. Thus, in the dualistic economic development model, the only constraint to economic growth is the capability of capital accumulation. As expressed by Lewis (1954) and Rostow (1960), in the modern economic sector the key for economic growth is to persistently maintain a critical minimum level of savings rate. According to the Lewis model, therefore, a dual economy exemplifies the typical economic development of developing countries. On the one hand, there is an endless supply of labour from the traditional sector to the modern economic sector at a constant wage rate, and on the other, continuous expansion of the modern economic sector

¹ In his paper, Lewis points out that the *traditional sector* is not confined only to indicate the agricultural sector, but is also applied to all sectors with the characteristics of income sharing, whereas the *capitalism sector* is mainly referred to the sector whose wage is determined in accordance with marginal productivity of labour. Kuznets (1973) distinguishes between the agricultural sector and modern economic growth according to six characteristics of the latter. Since we are trying to include all merits of this distinction, this paper will thereafter use the terminology: *traditional sector* and *modern economic sector*.

fuelled by capital accumulation. The dual economy does not begin to integrate into homogeneous one until the modern economic sector has absorbed all surplus labour in the traditional sector. In the sense, the point in time when the long-existing surplus labour is exhausted is called the Lewisian turning point, and its arrival is essentially the result of successful economic growth. The Lewis model, therefore, provides not only a useful classification of the stages of economic growth, but also suggests a way to transform a traditional economy into modern growth. However, to apply the Lewis model to the analysis of a specific economy, we should combine the advantages of each of the earlier methods to avoid irrelevance, inconsistency or oversimplification.

In this paper, we refer economic stages to regimes under which the resilient features with respect to the sources of growth exemplify the expansion. As is shown in Figure 1, whether comparing countries at different stages of development—from a cross-country perspective, or between stages of development within a country—economic growth from a timeseries perspective usually goes through natural resources-based, physical capital-based, (for some countries) labour force-based and total factor productivity-based stages, respectively and ordinally. Accordingly, the transformation from one source-based growth phase to another involves a fundamental transformation of the growth patterns. In general, two or three such transformations are required for a country to shift from poverty to wealth, and each of the transformations provides the country with a new source of growth, which in turn sustains its economic growth during the entire span of the subsequent stage. This classification of growth stages not only consists within the Lewis model but also enriches it by indicating more specifically the sources on which each of the growth stage is based.

Figure 1
Source of growth, transformations, and development stages



Source: Drawn by the author.

The formulation of a directive and relevant policy orientation for the economic development of a country entails adequate understanding of the generalized rule of development process. That is, it is essential for policymakers and scholarly policy advocates to accurately judge the development stages, fully explore the elements of development at various stages, and to be able in particular to identify the characteristics relevant at the turning point between two stages. A range of characteristics apparent in the Chinese economy indicate that the economy, as it continues to move through a cycle of macroeconomic fluctuation, has been gradually phasing toward a new stage since the new century. This phased change will have its logical consequences. First of all, after the significantly positive impact of the unique success of the Chinese demographic transition on the economy, the period of inputs-based fast growth is coming to an end. Second, the emerging labour shortage, while extinguishing the long-term source of economic growth, may change the political economy climate under which the persistent policy orientation of favouring urban areas over rural areas, and accelerate labour market integration. Since this change is a double-edged weapon—that is, it will serve either to lift the economy in China to new heights, or plunge it into an equilibrium trap, it is vitally important to have full understanding of this forthcoming developmental stage in order to take advantage of its positive elements. This paper tries to justify and supplement the Lewisian dual economy model with China's experience in economic growth and to develop an analytical framework under which the development of a dual economy and its unique characteristics can be explained, and the implications of the changes to institutional innovation and sustainability of growth can be highlighted.

The rest of the paper is organized as follows. Section 2 reviews the development of China's dual economy by adding country-specific factors to the classical dual-economy development model. This section mainly outlines (i) how China's economic growth has exploited the demographic dividend; (ii) to what extent the improvement in productivity has played a role in driving the country's rapid growth, and (iii) how globalization has provided a window of opportunity for China to leverage on its comparative advantage in labour-intensive industries. Section 3 reviews first the implications of the Lewisian turning point on economic development, focusing mainly on the role of demographic transition and labour market integration during the turning period in development. It then highlights changes in the development stage and various aspects of the approaching turning point in the Chinese economy. Section 4 points out the major features of the institutional innovation faced by China in its attempts to sustain economic growth. Section 5 concludes.

2 The Chinese style development of a dual economy

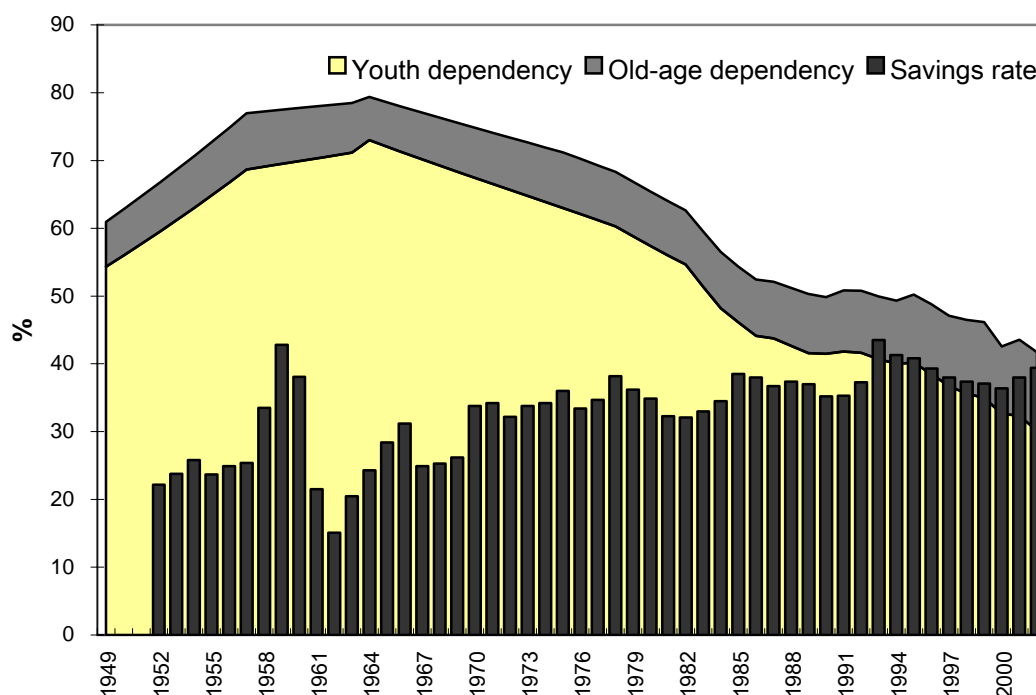
Economic development in China—characterized by a huge reservoir of surplus agricultural labour, institutional segmentation of the labour market between rural and urban sectors, and thus low and long-deflated wages of rural-to-urban migrant workers—can be considered to represent a Lewisian-type of dual economy development. Compared to the Lewis model, however, the development of China's dual economy has distinct features that reflect the central planning system that accompanied it during both the pre-reform period and the economic transition in the reform period. During the planning period, despite surpluses in the agricultural labour force, the institutional trinity of state monopoly on agricultural products, the commune system, and household registration (*hukou*) system prevented rural workers from migrating to

urban sectors. The resulting inefficiency of resource allocation, compounded by a defective incentive mechanism and technical inefficiency in management, led to economic growth without increased productivity. In the entire pre-reform period, the contribution of TFP to economic growth was zero (Perkins 2005). Economic reform and the open-door policy have driven an unprecedented growth of GDP of nearly 10 per cent per annum between 1978 and 2005. During the overall course of reform and openness, economic growth has been characterized by the development of the dual economy. In what follows, we examine the development of dualistic economy, Chinese style, by investigating the effects of reform and the policy of opening-up on economic growth.

2.1 Demographic dividend

During transition, Chinese economic growth has taken full advantage of the demographic dividend. During the entire reform period since the late 1970s, both the number and proportion of the working-aged population have continually increased, with the population dependence ratio declining correspondingly. This has guaranteed an adequate supply of labour and helped to achieve high savings (Figure 2). Thanks to a reform of the resource-allocation mechanism, this potential demographic dividend has translated into a comparative advantage once China became integrated into the global economy, and thus deferred diminishing returns-to-capital by fuelling economic growth from an extra source. Taking total dependence ratio as a proxy for the advantageous population structure, during the period 1982-2000, each 1 per cent decrease in this ratio led to a per capita GDP growth of 0.115 per cent; that is, the declining total dependence rate accounted for more than one-quarter of the per capita GDP growth in the reform

Figure 2
Changes in China's population dependence and savings rate



Source: Cai and Wang (2005).

Table 1
Income earned in the rural-to-urban labour migration

	No. of migrants (million)	(1) Migrants' income (billion yuan)	(2) Migrants' income (billion yuan)	Wage share of rural households' income (%)
1997	38.90	501.6	383.3	24.6
1998	49.36	636.4	520.2	26.5
1999	52.04	671.0	586.6	28.5
2000	61.34	790.9	739.5	31.2
2001	78.49	1012.1	1012.1	32.6
2002	83.99	1083.0	1153.4	33.9
2003	98.31	1267.6	1437.8	35.0
2004	102.60	1322.9	1598.0	34.0

Sources: NBS (2005) for the data on wage share in rural households' income;

Institute of Population and Labour Economics for the data on the average wages of migrant workers (cities surveyed: Shanghai, Shenyang, Wuhan, Fuzhou and Xi'an).

Details about the number of migrants are explained in Cai (2006a).

period (Cai and Wang 2005). Full exploitation of the demographic dividend can be clearly noted in the mass labour migration from rural to urban areas. This exemplified China's dual-economy development: the demographic dividend provided the labour force needed for industrialization, while keeping the costs of labour low. Meanwhile, income in the both rural and urban areas increases mainly through employment expansion, not rising wage rates.

As can be seen from Table 1, the number of rural-to-urban migrants has increased dramatically over the past years, exceeding the 100 million mark in 2004.² According to two surveys on urban migrant workers conducted in 2001 and 2005,³ the average annual wages of rural migrants working in the cities were 12.89 thousand yuan in 2001 and 16.58 thousand yuan in 2005. With these two figures, we can estimate how the wages of migrant workers have changed. First, as suggested by scholars and officials,⁴ we assume that there were no increases in migrant wage rates between 1997 and 2004, and take the wage rate of our survey in 2001 as a proxy of average wages for each year under review. Second, in accordance with actual survey observations in 2001 and 2005, we assume that the wage rates have increased over time; thus we take the annual rate of wage increase between the two survey years as reference to estimate the average annual wages for each year between 1997-2004. Thus, we have two sets of wage rates for the period 1997-2004—one indicating constant wage rates and the other moderately increased wage rates. When these are multiplied by the numbers of migrants per year, we obtain two sets of figures on the total wage income earned by Chinese migrant workers (Table 1). As indicated by columns 1 and 2, total income earned by the rural-

² Some surveys show even larger numbers of migrant workers; for example, the figure provided by Rural Economic and Social Survey Team (2005) was 118 million in 2004.

³ Both surveys were conducted by the Institute of Population and Labour Economics, Chinese Academy of Social Sciences, covering five cities in 2001 and 12 cities in 2005.

⁴ For example, Li Deshui, the former commissioner of the National Bureau of Statistics believes that compared to his father's generation 20 years ago, the wage level of migrant workers in the Pearl River Delta area has not changed even today (People's Daily Online 2005).

to-urban migrant workers in 2004 was 13.23 thousand yuan and 15.98 thousand yuan, respectively.⁵

2.2 Improvement of productivity

China's rapid growth economy has benefited from improvements in total factor productivity (TFP) and its increased contribution to overall growth (for example, Perkins 2005; Wu 2003). TFP, as the residual of output growth that cannot be explained by increases in inputs, is usually generated by improvements in technical efficiency and resource-allocative efficiency. The successful reform of the past decades not only enhanced technical efficiency by improving incentive mechanisms at the micro management level, but also achieved resource-allocative efficiency by developing markets of production factors, especially by promoting labour mobility. In their decomposition of GDP growth components during 1978-98, Cai and Wang (1999) find that labour mobility from agriculture to non-agricultural sectors contributed 21 per cent to overall growth, while the unexplained contribution was only 3 per cent. Other research also confirms that the development of the labour market constitutes a key part of the efficiency improvements gained from the reform. The World Bank (1997) shows that labour mobility from agricultural to non-agricultural sectors, which also involved labour transfers across regions, has been a significant source of economic growth, and accounted for 16 per cent of annual GDP growth during the period. Obviously, the improvement of productivity in the Chinese economy has been achieved during the course of the development of the dualistic economy, characterized by an unlimited labour supply.

2.3 Global integration

Increased integration with the global economy provided China with the opportunity to utilize its comparative advantage embodied in labour-intensive products. As estimated by Banister (2005) and Roach (2006), the average hourly compensation for Chinese manufacturing workers in 2002 was US\$0.57, or about 3 per cent of the average hourly compensation of similar workers in the United States and in many developed countries; even countries considered to be competitors in labour-intensive manufacturing had much higher labour costs than China. Over the part quarter century of reform and opening-up in China, as the total volume of international global trade has rapidly expanded, so has China's trade volume, but at a much faster rate, increasing from slightly over 1 per cent in the early 1980s to more than 6 per cent in 2004. The high, and obvious, comparative advantage in labour-intensive commodities in the expansion of trade is clearly linked to China's advantageous population structure (Yue 2001; Batra and Khan 2005).

Worldwide flows of international capital enabled China to utilize the more efficient capabilities of resources allocation introduced by outside investors. Foreign direct investment (FDI) was important for China in bridging the twin gaps of domestic savings

⁵ In the same period, the proportion of wage income in the total income of rural households has also improved. The host of policy measures implemented by the central and local governments to reduce the tax burdens of the farmers and to increase farming income had, by 2004, halted the ratio of wage income in total household income, but this does not imply declining income from migration.

and foreign exchange during the early reform phases. The combined effect of the demographic transition and fast economic growth increased domestic savings rate rapidly, which gradually improved the degree of capital sufficiency for the Chinese economy. The inflow of FDI has not, however, slowed down; rather, it is speeding up further. This trend seems to indicate that as the Chinese economy embraces the new century, FDI no longer flows into the country to fulfil inadequate capital needs, but to capitalize on the resource-allocative capabilities of international investors.⁶

3 Approaching the turning point and its characterization

In mainstream development economics, the development theory of the dual economy cannot be applied to analyse early development stages, namely because the developed countries of Europe and North America have never experienced dual economy in their early years. After a long period of ignoring the successful experience in East Asian economies, western economists began to explain the East Asian ‘miracle’ from a neoclassical economic standpoint (Skousen 1993; World Bank 1993). Furthermore, the Lewisian dualist model has not been widely used for explaining the phenomena of long-term economic development (Ranis 2004). Consequently, there are only a handful of studies that examine the turning point of a country progressing from an unlimited supply of labour to a shortage of labour, and what are its implications. However, from economics literature and direct observations one can still take note of some markers indicating the Lewisian turning point. In what follows, we highlight two of the main markers that are related to the causes and consequences of the turning point.

First, the demographic transition resulting from the decline in birth rates alters the labour demand and supply curves. A country’s stagnant transition from a demographic pattern of low death rates, high birth and population growth rates to one in which all of these rates are low, is the major reason for the traditional sector’s surplus labour and unlimited supply of labour. During demographic transition when substantial improvements in health and nutrition lead to a dramatic drop in death rates, the decline of birth rates usually lags behind, resulting in an increase in population growth rates. Because of this interval between declines in the death and birth rates, fertility and population growth rates surge in the long term in many developing countries, differentiating their development path from the progress followed earlier by the developed countries. As economic and social welfare develop further, people gradually change their reproductive behaviour, and the demographic transition moves to a phase of low death, birth and growth rates. At this stage, the population tends to become aged and can no longer support the unlimited supply of labour and the Lewisian turning point, as signalled by the exhaustion of surplus labour, is reached within a certain period.⁷

⁶ It was first suggested by Kalecki (1976: 27) that the difference between highly developed and developing non-socialist economies is their different abilities to efficiently utilize resources. Cai (2006b) develops this point of view to explain the contradictory coexistence of twin deficits in the United States and twin surpluses in China and other developing and transitional economies.

⁷ For example, Lewis (1958) anticipated the turning point of the Japanese economy by observing its sharp fall in birth rate.

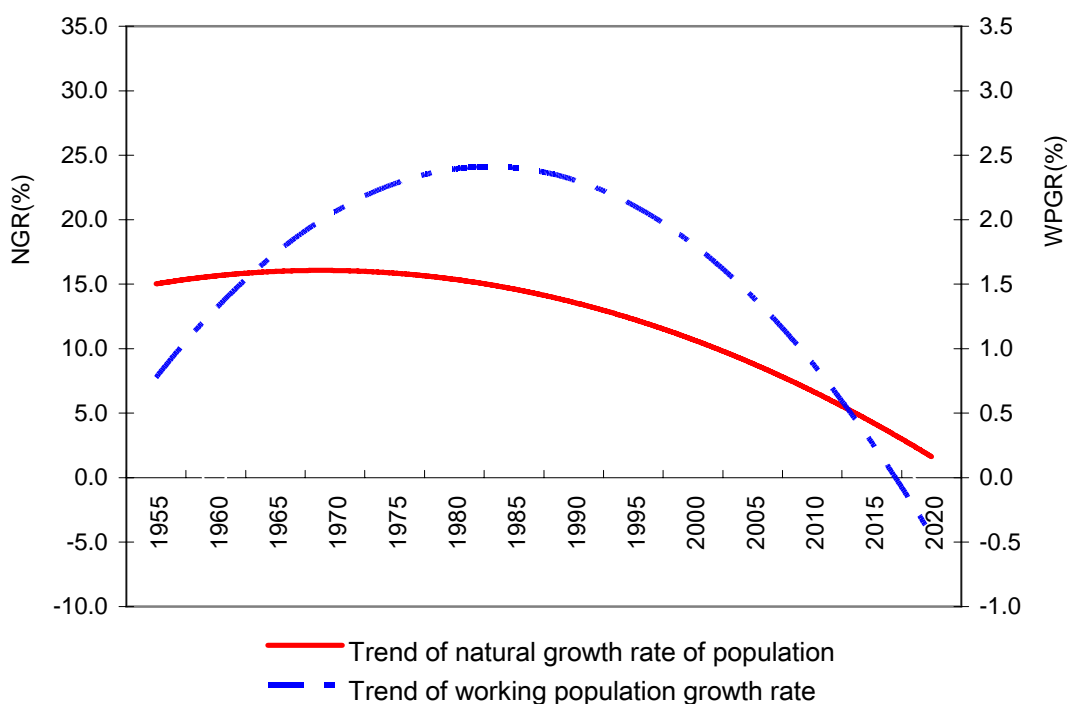
Second, the resulting labour shortage facilitates further integration of the labour market. The Lewisian dual-economy paradigm is virtually a theoretical reflection of the labour market segmentation rather than a mere categorization of two sectors with different labour supply characteristics (Fields 2004). Notwithstanding the fact that labour migration from the traditional to the modern sector is a marked phenomenon of dual-economy development process (Todaro 1969), rural and urban labour markets are distinct, because unlimited supply of labour, on the one hand, leads to extremely low marginal productivity and shared wages in the traditional sector, and on the other, to trade union activities and government regulations influencing wage determination in urban labour markets.

Agriculture, as representative of the traditional sector, provides a seemingly endless source of labour for the modern economic sector that absorbs the surplus at a constant wage rate. Therefore, under a dual economy, wage rates persist at a subsistence level until the expanding modern sector has exhausted the surplus. As a consequence of the emerging shortage, competing for the labour force inevitably leads to increased wages in the modern sector. This, in turn, affects agriculture, and the relationship between wage rates and agricultural productivity becomes close to what economics would expect. A noticeable fact is that the shift from a fragmented to an integrated labour market also begins with a wage increase in agriculture relative to other sectors (see Watanabe 1994).

In addition to the supportive institutional climate created by economic reform, the successful demographic transition—facilitated by social and economic developments and the implementation of family-planning—also provided an important contribution to the rapid expansion of China's economy. As a rule, the process of demographic transition is characterized by a time differential. That is, as declining rates of birth and mortality advance through the three phases, these introduce changes in the population age structure that shifts, first, from a high dependence ratio of children to a high proportion of the working population and finally to a high dependence ratio of the aged (Williamson 1997). During the earlier period between the reduction in death rates and the lag in declining birth rates, the natural population growth rate persistently climbs up and the share of dependent youth in the total population increases accordingly. As fertility rates begin to drop, the share of working aged population increases with a lag of about twenty years. A further drop in fertility rates will lead to slower population growth and people beginning to become aged. Therefore, two sequential inversely U-shaped curves for the natural population growth rates and for working aged-population growth rates, respectively, can be expected when one tries to outline the demographic transition with a timeseries.

Utilizing historical data and predicted outcomes, we can delineate a picture of China's demographic transition. As Figure 3 shows, the continuous fall in natural population growth rates began in the mid-1960s, and was followed by a drop in the growth rate of the working aged population two decades later. The growth rate of working aged population has further declined since the beginning of this century, and is expected to be zero by late 2010. Given that this population groups represents the bottom line of the ultimate labour supply, these changes in population patterns imply that after the long-term development of the dual economy, the benefit of an unlimited labour supply is vanishing; namely, the Lewisian turning point is affecting the Chinese economy.

Figure 3
Demographic transition and resulting dynamics of the working aged population



Note: the figure is drawn in a multinomial term.

Source: NBS various issues; United Nations (2005).

A shortage of migrant workers was evident in the Pearl River Delta region as early as in 2003, and the phenomenon has spread to the Yangtze River Delta region, and even to provinces in central China, the origin of many migrant labourers. The analysis of the population age structure addressed here suggests that the causes of labour shortages are demographic in nature and will, therefore, intensify over time. In addition, a moderate fall in unemployment rates, increasing labour force participation rates in urban markets, and improvements in migrant wages are indicative of the changed labour supply conditions (Cai and Wang 2006 and Cai 2007).

Based on the already diminishing net growth of the working aged population and projections of a constantly increasing demand for workers in the non-agricultural sectors during the 11th Five-year Plan period (2006-10), a possible gap between the labour supply and demand is expected to develop in the very near future. It is assumed that agriculture will have no further demand for workers; therefore, the incremental value of the working aged population is a reasonable labour supply base for non-agricultural sectors. Using three alternatives for the non-agricultural growth rate⁸ and two employment elasticities for output growth of non-agricultural sectors,⁹ we predicted six labour demand scenarios to reflect non-agricultural growth. Comparing these with the labour supply (incremental working age population), we find that from 2004 on, the

⁸ Ten per cent for high growth; 9 per cent for medium growth, and 8 per cent for low growth.

⁹ One percentage point increase in growth induces a 0.297 percentage point rise in employment (the average level during 1991-2003] to represent high elasticity and 1 percentage point increase in growth creates a 0.230 percentage point rise in employment (a half standard deviation lower than the average) as low elasticity.

net increase of new entrants to the labour market tends to lag behind the various labour-demand projections, and that the gap widens over time. The earliest scene will occur in 2004 and the latest in 2009 (see Cai and Wang 2006 for details).

4 Institutional innovation and sustainability of growth

As discussed above, not only is the Lewisian turning point a theoretical expression of a point-in-time when the unlimited supply of labour in the developing countries vanishes, but it also has meaningful implications for economic development. For a long time, China has been affected by the dualistic economic development process with the typical characteristic of an unlimited labour supply. In other words, policymaking and institutional arrangements by the government, the choice of industrial organization and technology by enterprises and the configuration of industrial structure of the economy as a whole have all been influenced by this long-standing diagnostic characteristic. Once the Lewisian turning point is reached and unlimited labour supply no longer a factor of production, the government, enterprises, workers and consumers will be faced unfamiliar options. How China will be able to sustain its economic growth and complete its transition to a market-based economy in these new circumstances will depend on institutional innovation that conforms to the changes. Next, we discuss the challenges facing the country and the institutional adjustment needed once the turning point is actually reached.

First, the impending turning point will need to trigger a transformation of the economic growth patterns in order to sustain the continuing source of growth. The neoclassical growth theory asserts that in the face of a limited supply of labour and subsequent diminishing returns-to-capital, economic growth can be sustained only by elevating TFP and increasing its contribution to growth (Solow 1956). This doctrine is confirmed by the development experience of Soviet Union, which ultimately was unable to maintain its economic growth based on inputs of capital and labour without TFP advancement. Following the same logic, western economists doubted the sustainability of the East Asian economic miracle, as reflected in the fast-growth experiences of the four tigers (for example, Young 1992 and Krugman 1994). However, at that time, economists overlooked the successful demographic transition in these economies. In the absence of other critical constraints, the adequate labour supply created through the successfully concluded demographic transition generated an extra source of growth for these economies and postponed the reduction in returns to capital. This demographic dividend and its contribution to the East Asian miracle have been examined by some economists (Williamson 1997). Once these countries reached the Lewisian turning point, the rate of TFP accelerated and its contribution to growth expanded (Bhagwati 1996), promoting the transformation from inputs-based growth pattern to productivity-based one.

Following a short rise in TFP and its contribution to growth during the early phases of reform, China's performance since the 1990s has been dissatisfactory. According to Zheng and Hu (2004), the annual TFP growth rate has declined from 4.63 per cent between 1979 and 1995 to 0.60 per cent between 1996-2001. The study by Kuijjs and Wang (2005) finds a diminishing TFP contribution to the overall labour productivity increase in China. While over a half of the 7.0 per cent increase in labour productivity was attributed to TFP improvement during the period 1978-93, only one-third of the 7.8 per cent labour productivity increase during 1993-2004 was attributed to the improved TFP. An improvement in the capital-labour ratio accounted for the rest of the

contribution to the increased labour productivity. Similarly to the experiences of the East Asian economies, the existing demographic dividend in China generated a distinct advantage with regard to quantity, quality and cost of labour that helped the economy to maintain a high savings rate for capital investment, and supported the economy with an unprecedented growth rate based on inputs of capital and labour, but not by productivity.¹⁰ However, as the Lewisian turning point is reached, changes in the conditions on which such a growth pattern is based become inevitable, and the transformation from an inputs-based growth pattern to a TFP-based one becomes more urgent.

Second, the approaching turning point necessitates a change in the pattern of income distribution. Kuznets (1955) finds an inverse U-shaped curve in the relationship between economic development and income distribution. Despite numerous examples to the contrary from empirical research, income distribution does change over time according to a certain rule, which, in many cases, is related to the level of economic development. The Kuznets-style turning point dividing the two periods—income inequality rising in the first and falling in the second—has a certain logical link to the Lewisian turning point now that both characterize outstanding stages in economic development. Theoretically, as the unlimited supply of labour is exhausted and the labour market becomes more integrated into the economy, the demand for unskilled labourers intensifies, giving rise to increased wage rates for these workers. Since the majority of low-income earners consist of the unskilled and their dependents, this rise in wage rates subsequently increases their income relative to other groups. As a result, the level of income inequality in the society as a whole is moderated (Freeman 1993; Fields 2004). Empirically, Kuznets (1955) observed that beginning in the 1920s, the income share of low-income group improved, leading to a reduction in income inequality in the major developed countries of the west.

During the early stages of economic development with immature market mechanisms, capital is a scarce factor of production while labour is comparatively abundant factor of production, and the difference between returns to capital and to labour is large, making income distribution favourable for capital owners and unfavourable for holders of labour. The overall state of income distribution in a society is usually shaped by the dominant component of factor returns. Generally, income from capital has a greater effect on overall income inequality than labour income. The larger the share of capital earnings in total income, the larger the overall income inequality of the society. But, in contrast, the greater share of wage income in total income tends to reduce income inequality. Once the unlimited labour supply is exhausted, it is generally followed by a decline in capital scarcity. Thus, fuller employment in a society tends to expand the share of wages and to reduce the share of capital earnings in total income, leading to a more equitable income distribution. This does not happen spontaneously, however, and depends on whether the society can create a climate conducive to full employment, as required by the new development stage.

¹⁰ It is worth recalling is that since the latter part of the 1990s, the growth of China's heavy industry has resumed its runaway pace, which was characteristic of the traditional development strategy during the controlled economy. This trend of industrial structure change is motivated by local governments' push for GDP growth and distortion of production factors prices, causing the increase in capital-labour ratio (Cai 2006c).

Third, the approaching turning point poses challenges that require institutional innovations. Experience and economic development lessons indicate that social and economic policies as well as institutional arrangements, in which the government has an important role, impact directly on the results of income distribution among groups (Krugman 2006). On the other hand, policies and institutional arrangements are the product of a specific stage of economic development. Changes in the long-term relationship between labour supply and demand entail a transfer of the relative bargaining powers among social groups from an employer-dominated regime (the paradox of number) to an employee-dominated one (the rule of supply and demand), so as to effect changes in the equilibrium of interests.¹¹ These would involve a shift of the relative bargaining powers among social groups that influence government policy and institutional arrangements, the redirection of resource flows between rural and urban sectors, redistribution of income among social groups, reversal of employer-employee relationship in the labour market, and so on.

During the course of China's dualistic economic development, the modern urban economic sectors expanded rapidly and attracted massive migration from the rural areas, providing an inexhaustible labour force for the urban sectors at very low cost. Due to the unlimited supply of labour, migrant workers in the urban sectors had neither collective bargaining power nor influence over wage determination, or the labour market policies of the local governments. The rural-to-urban migrants subsequently confronted numerous institutional obstacles, including the household registration (*hukou*) system separating the rural and urban labour market. Under the sanction of the legitimized *hukou* system and its discriminatory measures, local governments often exerted pressure against the competition from migrant workers. Policy orientation discriminated against migrants in accordance with the fluctuating employment cycle within the urban labour market (Cai, Du and Wang 2003). Every time the rural-to-urban labour mobility faces systematic government obstruction, migrant workers have no choice but to return to their contracted land or family businesses in their home villages, forming a cyclical reservoir of rural surplus labour. This Chinese-style wage sharing system causes a lack of permanence for the labour migration, instability in off-farm income for rural households and persistence of the rural-urban income gap. Only when the relationship between labour supply and demand inversely shifts against its long-last stance, can the conditions needed to solve these problems mature. In most developed countries, systematic labour shortage has become the turning point when employer-employee relationship started to improve, income inequality tended to decrease, and government policies and legislations began to favour ordinary workers. However, experience also suggests that if the government is incapable of making sound policy options and delays the action needed to cope with the subsequent stage of development, the discriminatory measures of the dualistic era will continue, leading to severe working class discontentment or even fierce social conflict.¹²

¹¹ Olson (1985) and Anderson (1995) respectively examine why government policies in poor countries (at lower development stages) tend to favour urban residents over farmers, while the reverse seems to be the case in rich countries (at higher development levels). These assumptions can well be borrowed for analysing employer-employee relationships.

¹² Korea in the late 1980s is an example of a country where the majority of the conditions necessary for worker-related institutional changes developed, but no action was taken, resulting in severe conflict between the government and the working masses (Freeman 1993).

5 Concluding remarks

The fast economic growth in transitional China has been achieved under the Chinese-style development pattern of a dualistic economy. On the one hand, full mobilization of all the factors favourable for economic growth has generated three decades of rapid expansion. On the other hand, the advantage of an unlimited labour supply, which promoted the demographic dividend in the economy, has also become a major obstacle that has prevented the economy from transiting from an inputs-based to productivity-based regime. Meanwhile, economic growth *per se* has been unable to resolve the social problems emerging during the course of dual economy development. As the result of demographic transition, China's economic development is now reaching its Lewisian turning point and will witness the disappearance of its unlimited supply of labour. Since the dualist economic structure constitutes not only a divide between traditional and modern economic sectors, but is also an element of labour market segregation, the approach of the turning point also necessitates urgent institutional changes; that is, opportunities will open for resolving a host of problems such as the imperfect rural labour force migration, income inequality and poverty, and inadequate guarantee of the rights of workers. It is critical that the Chinese government fully understands the changing nature of development stage. The government will need to conform to the conditions introduced by the turning point in order to adjust its policy orientation and to resolve its long-standing problems in economic development so that economic growth and harmony within the society can be maintained.

Reference

- Anderson, K. (1995). 'Lobbying Incentives and the Pattern of Protection in Rich and Poor Countries'. *Economic Development and Cultural Change*, 43 (2): 401-23.
- Banister, J. (2005). 'Manufacturing Earnings and Compensation in China'. *Monthly Labour Review*, August.
- Batra, A., and Z. Khan (2005). 'Revealed Comparative Advantage: An Analysis for India and China'. Working Paper 168 (August). New Delhi: Indian Council for Research on International Economic Relations.
- Bhagwati, J. N. (1996). 'The Miracle that Did Happen: Understanding East Asia in Comparative Perspective'. Paper presented at the conference on Government and Market: The Relevance of the Taiwanese Performance to Development Theory and Policy, 3 May. Ithaca: Cornell University.
- Cai, F. (2006a). *Scientific Development Philosophy and Sustainability of Economic Growth*. Beijing: Social Sciences Academic Press (China).
- Cai, F. (2006b). 'Rowing Downstream: China's Adjustment of Growth Pattern against the Imbalanced Global Economy'. *Economic Perspective*, 11: 11-15.
- Cai, F. (2006c). 'Choosing a Growth Pattern that Suits the Present Development Stage'. *China Economist*, 3 (July): 80-8.
- Cai, F. (2007). 'How Can China Maintain Its Competitiveness under Circumstance of Rising Labour Cost?'. In (ed.) F. Cai, *Reports on China's Population and Labor*, No. 8. Beijing: Academic Press (China).

- Cai, F., and D. Wang (1999). 'The Sustainability of Economic Growth and the Labour Contribution'. *Economic Research Journal (Jingji yanjiu)*, 10: 62-8 (in Chinese).
- Cai, F., and D. Wang (2005). 'China's Demographic Transition: Implications for Growth'. In R. Garnaut and S. Ligang (eds), *The China Boom and Its Discontents*. Canberra: Asia Pacific Press.
- Cai, F., and M. Wang (2006). 'Challenge Facing China's Economic Growth in its Aging but not Affluent Era'. *China & World Economy*, 14 (5): 23-31.
- Cai, F., Y. Du, and M. Wang (2003). *The Political Economy of Labour Mobility*. Shanghai: Shanghai Sanlian Shudian and Shanghai People's Publishing House.
- Fields, G. (2004). 'Dualism in the Labour Market: A Perspective on the Lewis Model after Half a Century'. *The Manchester School*, 72 (6): 724-35.
- Freeman, R. (1993). 'Labour Markets and Institutions in Economic Development'. *AEA Papers and Proceedings*, 83 (2): 403-8.
- Guo, Y. (2006). 'Wu Jinglian's Talk: the Imbalance of the Chinese Economy is Rooted in its Growth Pattern'. *China Youth Newspaper*, 24 July.
- Kalecki, M. (1976). *Essays on Developing Economies*. Atlantic Highlands, NJ: Humanities Press.
- Krugman, P. (1994). 'The Myth of Asia's Miracle'. *Foreign Affairs*, November/December.
- Krugman, P. (2006). 'Wages, Wealth and Politics'. *New York Times*, 18 August.
- Kuijjs, L., and T. Wang (2005). 'China's Pattern of Growth: Moving to Sustainability and Reducing Inequality'. WB Research Working Paper 3767. Washington, DC: World Bank.
- Kuznets, S. (1955). 'Economic Growth and Income Inequality'. *American Economic Review*, 45 (1): 1-28.
- Kuznets, S. (1973). 'Modern Economic Growth: Findings and Reflections'. *The American Economic Review*, 63 (3): 247-58.
- Lewis, W. A. (1954). 'Economic Development with Unlimited Supplies of Labour'. *The Manchester School of Economic and Social Studies* 22: 139-91. Reprinted (1958) in A. N. Agarwala and S. P. Singh (eds), *The Economics of Underdevelopment*. Bombay: Oxford University Press.
- Lewis, W. A. (1958). 'Unlimited Labour: Further Notes'. *The Manchester School of Economics and Social Studies*, 26 (1): 1-32.
- NBS (National Bureau of Statistics) (2005). *China Statistical Yearbook 2005*. Beijing: China Statistics Press.
- Institute of Population and Labour Economics (2001 and 2005). *China Urban Labour Surveys, 2001 and 2005*. Beijing: Chinese Academy of Social Sciences.
- Olson, M. (1985). 'The Exploitation and Subsidization of Agriculture in the Developing and Developed Countries'. Paper presented to the 19th conference of International Association of Agricultural Economists. Malaga.

- People's Daily Online (2005). 'Twenty Years of Stagnation of Migrant Wage: How Li Deshui Unscramble the Economic Causes of Migrant Labour?' Available at: www/politics.people.com.cn/GB/1027/3149315.html.
- Perkins, D. (2005). 'China's Economic Growth in Historical and International Perspective'. *Jingjixue (Jikan)*, 4 (4): 891-912 (*China Economic Quarterly*) (in Chinese).
- Ranis, G. (2004). 'Arthur Lewis' Contribution to Development Thinking and Policy' Working Paper 891. New Haven: Economic Growth Center, Yale University.
- Roach, S. (2006). 'China's Rebalancing Imperatives: A Giant Step for Globalization'. Morgan Stanley Research, 1 December. Beijing: Morgan Stanley and Co. Incorporated.
- Rostow, W. W. (1960). *The Stages of Economic Growth: A Non-Communist Manifesto*. Cambridge: Cambridge University Press.
- Rostow, W. W. (ed.) (1963). *Economics of Take-off into Sustained Growth*. New York: Macmillan and St. Marin Ltd.
- Rural Economic and Social Survey Team (2005). 'The Continuing Increase of Rural Labour Migration in 2004'. Available at: www.sannong.gov.cn/qwfb/ncjj/200503300220.htm.
- Sachs, J. D. (2004). 'Stages of Economic Development'. Paper presented at the Chinese Academy of Arts and Sciences, 19 June. Beijing. Available at: www.earth.columbia.edu/about/director/documents/china_speech061904.pdf.
- Skousen, M. (1993). *Economics on Trial: Lies, Myths, and Realities*. Chicago: Irwin Professional Publishing.
- Solow, R. M. (1956). 'A Contribution to the Theory of Economic Growth'. *Quarterly Journal of Economics*, 70 (1): 65-94.
- Todaro, M. (1969). 'A Model of Labour Migration and Urban Unemployment in Less Developed Countries'. *American Economic Review*, March: 138-48.
- United Nations (2005). *World Population Prospects: the 2004 Revision*. New York: United Nations Population Division, Department of Economic and Social Affairs.
- Watanabe, S. (1994). 'The Lewisian Turning Point and International Migration: The Case of Japan'. *Asian and Pacific Migration Journal*, 3 (1): 119-47.
- Williamson, J. (1997). 'Growth, Distribution and Demography: Some Lessons from History' NBER Working Paper Series 6244. Cambridge, MA: National Bureau of Economic Research.
- World Bank (1993). *The East Asian Miracle: Economic Growth and Public Policy*. New York: Oxford University Press for the World Bank.
- World Bank (1997). *China 2020: Development Challenges in the New Century*. Washington, DC: World Bank.
- Wu, Y. (2003). 'Has Productivity Contributed to China's Growth?'. *Pacific Economic Review*, 8 (1): 15-30.

- Young, A. (1992). 'A Tale of Two Cities: Factor Accumulation and Technical Change in Hong Kong and Singapore'. In O. Blanchard and S. Fischer (eds), *NBER Macroeconomics Annual*. Cambridge, MA: MIT Press.
- Yue, C. (2001). 'Comparative Advantage, Exchange Rate and Exports in China'. Paper prepared for the international conference on Chinese economy captioned Has China Become a Market Economy?, 17-18 May. Clermont-Ferrand.
- Zheng, J., and A. Hu (2004). 'An Empirical Analysis on Inter-provincial Productivity Growth during the Reform Period'. Working Paper 1. Beijing: Center for China Situation Studies.