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## **The Evolution of China's Growth Path and Its Employment Effects**

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**Abstract:** Since the early-1990s, the Chinese economy has switched from a labor-intensive growth path to a capital-deepening one. The former growth path was capable of achieving both rapid economic growth and rapid employment expansion, but it had the drawback of sluggish labor compensation growth. The latter growth path, in contrast, was capable of sustaining rapid economic growth and increases in labor compensation, but it had the drawback of a weak capability of job creation. Regarding the prospect for China in the foreseeable future, it appears that the capital-deepening path is more feasible than the labor-intensive one. This, in the first place, is because of the slowdown in the growth of consumption, which results in the reliance of economic growth on investment demand. It is also because of the observation that, compared with the labor-intensive growth path, the capital-deepening path exhibits stronger dynamic increasing returns and faster productivity improvement.

**Key words:** Economic growth; Employment; Capital-Deepening; Dynamic Increasing Returns

China has experienced a process of rapid expansion in labor force and employment over the reform era. Between 1978 and 2007, the total of the labor force increased from 407 million persons to 786 million, while the number of employed workers increased from 402 million to 770 million. Put another way, during this 29-years period, the Chinese labor force almost doubled. Sustained rapid growth of the Chinese economy could also be seen in connection to the concurrent expansion in labor force and employment. During the period, China's real GDP increased by more than 14 times. The facts of the sustained rapid economic growth and expanding employment imply that the main part of the Chinese population has benefited from the reform. It has been especially true since the turn of the century that economic growth and employment expansion have been the prime targets of China's government.

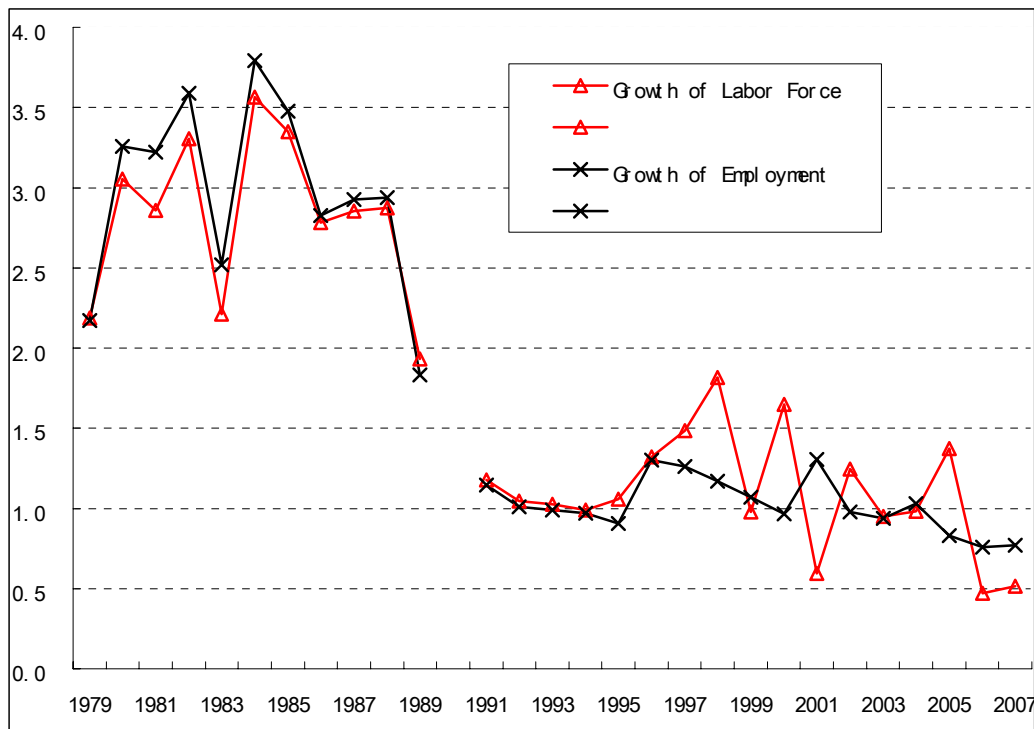
However, the actual path of growth of the Chinese economy in recent years did not seem to fare well with the government objectives. It is true that, over a main part (especially the first half) of the reform era, China's economic growth was largely a labor-intensive one. Growth was largely propelled by the absorption of new entrants to employment. More precisely, it was a process of the massive transfer of labor from the rural-agricultural sector to industry and services. Starting from the early 1990s, however, the economic growth path has tended to switch to a capital-deepening one. The substitution of capital for labor, particularly in industry, has become increasingly evident. As a result, the ability of economic growth to create jobs and absorb new labor to employment has tended to diminish. It can be found that the acceleration of output and productivity growth in recent years has not been accompanied by a comparable expansion in employment. Expansion in employment has tended to lag behind that of the labor force, quite in contrast

to the situation prior to the mid-1990s.

This paper is composed of five sections, of which Section One charts out the main trends of evolution of labor employment and economic growth. Section Two analyzes the dynamics of China's economic growth and labor employment. Section Three provides some simple regression analyses of some of the key issues of the topic. Section Four assesses the feasibility of the two types of growth path in the light of the depiction and analysis of the preceding two sections. Section five offers some concluding remarks.

## **1. The Trends of Evolution of Labor Force, Employment and Economic Growth in China**

China's economic growth has experienced two different stages over the reform era, i.e., since the early-1990s, the Chinese economy has switched from a labor-intensive growth path to a capital-deepening one. The performance of employment differs in different stage. Two observations are of note from the trends of evolution of the growth of the labor force and employment charted out in Figure 1. First, there was a very substantial decrease in both labor force and employment from the period 1979-1989 to that of 1991-2007. Second, whilst employment growth tended to outstrip labor growth in the first period, the opposite was the case in the second period. The first observation implies that it is true that employment growth depends on labor growth, i.e., a supply-side determination. The second point, however, implies that demand factors are also of importance in determining employment growth. The fact that the lag of the growth of employment behind that of labor force has become more prominent in the latter half of the reform era manifests that the constraint of demand on employment has become more significant.



**Figure 1. Annual Growth Rate of Labor Force and Employment**

Sources: *China Statistic Yearbook 2008*.

To further pin down the role of demand and supply determinants of employment, it will be useful to contrast employment data with data of working-age population, participation rate and therefore the supply of labor. The flow data of these variables are given in Table 1, for various sub-periods of the reform era. As can be seen, in 1978-1984, the average annual increase in the number of employment exceeded that of the labor force, implying that the flow of labor demand exceeded that of supply, which embodies the release of labor productivity brought about by the reform. In the next period of 1985-1989, the two sides were basically in balance. Thereafter, labor supply tended to exceed labor demand. In particular, in the 1997-2002 period (the period of deflation) when insufficient aggregate demand in the Chinese economy was the most serious, the average increase in labor supply exceeded that of demand by 1.45 million persons per year. Although, since 2002 the economic conditions had improved and the situation of employment had eased slightly, the gap between the average increase in labor supply and that of demand still reached the high level of 0.48 million.

**Table 1. Working-age Population, Labor Supply and Employment (10,000 persons)**

	Average annual growth of working-age population	Labor participation rate	Average annual increase in labor supply	Average annual increase in employment
1978-1984	1402	97.6%	1368	1434
1985-1989	1781	81.6%	1454	1426
1991-1996	998	74.1%	740	700
1997-2002	1396	65.9%	933	798
2003-2007	1034	73.8%	698	650
Sources: Calculation based on data from National Bureau of Statistics, <i>China Statistical Yearbook</i> , various issues.				

Ultimately, it is the fundamental change in the character of the economic growth path that has accounted for the performance in employment. The simple numbers are: the average annual rate of real economic growth accelerated from 9.50% during 1978-1989 to 10.15% during 1990-2006, whilst that of employment growth decreased from 2.96% to 1.04% and that of labor force growth decreased from 2.90% to 1.18% (in the period 1990-2005). Put another way, the average annual elasticity of employment with respect to real economic growth decreased, very substantially, from 0.31 in the first period to 0.10 in the second period. There should be no mistake to infer from these numbers that the capability of Chinese economic growth in job creation has significantly diminished.

In contrast to the severe situation of employment, the average annual rate of real economic growth between 2002 and 2007 still remained the high level of 10.82%, raising 2.39 percentage points than that of the last sub-period. In fact, since the reform, the growth of employment has remained a downward trend whether the macro economy functions well or not. It also can be observed from Figure 1. Concretely, the average annual rate of real economic growth accelerated from 9.25% during 1978-1989 to 10.18% during 1991-2006, whilst that of employment growth decreased from 3.09% to 1.05%. Put another way, the average annual elasticity of employment with respect to real economic growth decreased, very substantially, from 0.33 in the first period to 0.09 in the second period. There should be no mistake to infer from these numbers that the capability of Chinese economic growth in job creation has significantly diminished.

To see more clearly the evolution of the relationship between economic growth and employment growth, Table 2 gives the relevant data of the economy and of the three main economic sectors in different sub-periods. For the economy as a whole, the average annual growth elasticity of employment decreased from 0.33 in 1978-1984 to 0.29 in 1985-1989, then 0.09 in 1990-1996, and finally to 0.08 in 2003-2007. Even more worth-noting is the

observation that the employment elasticity of agriculture and that of non-agriculture have moved in opposite directions. For agriculture, the value of the elasticity was 0.20, 0.48, -0.43, 0.32 and -0.69, respectively, for the five sub-periods. The general trend, erratic though, is the outward transfer of labor from agriculture. For the secondary sector, the value of the elasticity was 0.62, 0.38, 0.16, -0.05 and 0.45, respectively, for the five sub-periods. This is a case of continuously diminishing capability in labor absorption up until recently, although whether the rebound of the elasticity after 2003 is temporary or long-term remains to be seen. Finally, for the tertiary sector, the value of the elasticity has been strongly positive throughout, although even here there has been somewhat a decrease in the elasticity in recent years. This sector has become the main source of job creation since the mid-1990s.

**Table2. Elasticity of Employment with Respect to Economic Growth**

	Average annual real growth rate of output (%)				Average annual growth elasticity of labor employment			
	Total	A	B	C	Total	A	B	C
1978-1984	9.25	7.29	8.92	11.87	0.33	0.20	0.62	0.67
1985-1989	9.80	3.09	12.04	12.54	0.29	0.48	0.38	0.44
1990-1996	11.88	4.31	16.49	10.64	0.09	-0.43	0.16	0.65
1997-2002	8.43	2.98	9.20	9.81	0.13	0.32	-0.05	0.28
2003-2007	10.82	4.54	12.36	10.94	0.08	-0.69	0.45	0.31
Sources: Calculation based on data from National Bureau of Statistics, <i>China Statistical Yearbook 2008</i> .								
Note: A = primary sector; B = Secondary sector; C = Tertiary sector.								

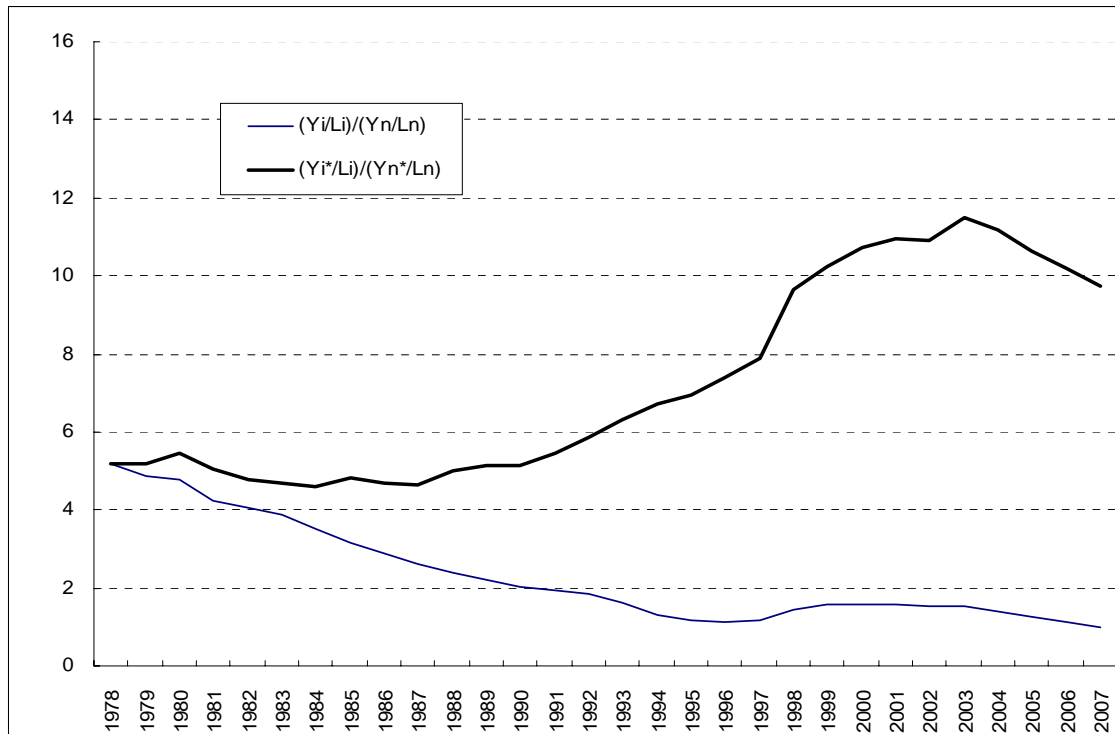
On the whole, first, undoubtedly, a virtuous circle between economic growth and employment has been formed. In the view of employment, it can be inferred that the transfer of massive labor force from agriculture to services benefited from rapid economic growth which can absorb unemployed and semi-unemployed labor to employment. But it is by no means a natural or easy case. In the worldwide, in contrast to China, the transfer of labor is not prominent in the countries whose economic structure and growth record are similar to that of China, although in which there are certain trend of transfer of labor. Second, the fact that the growth of employment lagged behind that of GDP implies that the ability of economic growth to create jobs and absorb new labor to employment has tended to diminish, which can be reflected by the slowdown in the transfer of labor from

agriculture to industry and services. To analyze these two points requires clarifying the structural and institutional character of China's changing economic growth path.

## 2. The Dynamics of Economic Growth and Employment

*Prima facie*, there should be no mistake that the immediate dynamics behind China's sustained rapid economic growth over the reform era is a process of rapid industrialization. In international comparison, China's progress in industrialization during this period has far outstripped the rest of the developing world. Its real growth rate of industrial value-added reached 11.1% per annum in the 1980s, and increased further to the rate of 13.7% per annum in the 1990s. These rates are much higher than the average of all low-income economies (including China itself) meanwhile, 5.5% and 2.7%, respectively for the two periods, as well as that of all middle-income economies, 3.6% and 3.9%, respectively. They are also substantially higher than the average of the East Asian high-growing economies (again, including China), the star performers of the developing world, where the average annual growth rates during these two periods are both 9.3%.

Figure 2 charts out the levels of relative labor productivity of industry vis-à-vis the rest of the Chinese economy during the period between 1978 and 2007. It can be seen that the curve representing relative labor productivity calculated at constant prices has persistently and substantially exceeded that representing relative labor productivity calculated at current prices. This implies a transfer of the gains in productivity improvement from the industrial sector to the rest of the economy, via the effect of changes in relative prices. And the progressively widening gap between the two curves further implies that, over time, the indicated productivity transfer has tended to accelerate along with the progress in industrialization. The contribution of industrialization to China's overall economic growth is thus not simply a reflection of the fact that industry is part of the economy. It also reflects a dynamic process where industry serves as an engine of growth of the non-industrial sector.



**Figure 2. Relative Labor Productivity of Industry**

Sources: National Bureau of Statistics, *China Statistical Yearbook 2008*.

Notes:  $Y$  = GDP and its components at current prices, with \*denoting data at 1978 constant prices.  $L$  = total labor employment. The subscripts  $i$  and  $n$  denotes the secondary sector (i.e., industry plus construction) and the rest of the Chinese economy, respectively.

In the relevant theoretical literature, structuralist development economics – which draws heavily on the theory of transformational growth developed by Post-Keynesian economics – tends to consider industry (or the manufacturing sector) as the area where dynamic increasing returns are especially strong. It can be exactly summarized by the renowned Kaldor-Verdoorn Laws which are based on the argument that productivity growth is mainly underpinned by the interaction between the technical peculiarity of manufacturing and favorable demand factors.<sup>1</sup> Neo-Schumpeterian theory of innovation further posits that, along with technical and demand factors, the properties of the economic institutions in question are of equal importance. Demand-pulled productivity growth typically takes the forms of learning-by-doing, induced investment in technological renovation and upgrading, and an increase in the economy-wide specialized division of labor, all under the rubrics “collective learning effects”. And the properties of the economic institutions in question refer to their capability in utilizing the favorable demand conditions for the generation of

<sup>1</sup> L. Taylor (1991) *Income Distribution, Inflation, and Growth: Lectures on Structuralist Macroeconomic Theory*, MIT Press, ch.9-10. M. Syrquin (1994) “Structural transformation and the new growth theory”, in L.L. Pasinetti and R.M. Solow [eds.] *Economic Growth and the Structure of Long-Term Development*, London: Macmillan.

collective learning. Finally, there also exists a proposition in the literature stating that collective learning requires rigid institutions, i.e., long-term-oriented relationships between major stakeholders of the business system. In other words, there is a necessary trade-off between productive efficiency of this kind and allocative efficiency – the latter, according to standard neoclassical economics, hinges on the existence of flexible, market-determined institutions.<sup>1</sup>

These theoretical propositions, with their emphasis on the structural and institutional characteristics of an economy in the growth process, offer good insights for the analysis of the Chinese experience. Reconsider Figure 2. It is of note that the two curves representing the relative productivity of industry vis-à-vis non-industry, measured at current and constant prices, respectively, both tended to move downwards in the 1980s but then moved upwards in the 1990s. The downward movement of the curves in the first half of the reform era seems anomalous, for, according to the Kaldor-Verdoorn Laws, industry is typically characterized by faster productivity growth than non-industry. The likely explanation of the anomaly is that Chinese economic growth during this period was propelled by labor transfer of massive scales from agriculture to industry. This movement, while being in line with China's relative scarcity, did have negative impact on the relative labor productivity of industry – as the new entrants into the industrial workforce were mainly unskilled and the rapid expansion of the workforce exerted downward pressure on the capital-labor ratio of industry. Conversely, the upward movement of the curves since the early 1990s indicates the resurgence of a capital-deepening path of industrialization and economic growth.

According to the literature summarized above, productivity growth is the result from the interaction between the arrangement of economic structure and institution and favorable demand factors, the combination of which forms a special economic growth path.

From the demand perspective, it can be found that the composition of China's aggregated demand appears a turning point in 1993, i.e., consumption accounts for a substantially bigger share in 1978-1992 than in 1993-2007, while the opposite is true for the share of aggregate demand accounted for by investment. Corresponding to this change in the composition of demand is the evolution of the level of industrial labor productivity relative to the rest of the economy, shown in Figure 2. In the first half of the reform era, industrial growth (and hence overall economic growth) was to a large extent propelled by the transfer of unskilled labor from the rural-agricultural sector to the more productive industrial sector. This exerted downward pressures on industrial relative labor productivity. Since the early 1990s, however, industrial relative labor productivity has tended to rise, and at an accelerating pace. And the share of industrial labor employment in the national total has stagnated, in contrast to the persistent increases in the previous period. Clearly, there was a fundamental break in the early 1990s whereby Chinese economic growth shifted

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<sup>1</sup> For a review of these theories, see D. Lo and R. Smyth (2004) "Towards a reinterpretation of the economics of feasible socialism", *Cambridge Journal of Economics*, 28 (6), pp.1-18.

from consumption-led to investment-led, and from “industrial widening” to “capital deepening”.

Accordingly, it can be inferred that, before the break in the early 1990s, China’s rapid economic growth was based on a nexus of causal relationships that could be characterized as the following: consumption induced investment and thus overall demand expansion, thereby making it possible to absorb transfer labor from agriculture and to improve industrial productivity via dynamic increasing returns. There was a virtuous circle between consumption and production, and between industry and the economy. This dynamics of China’s economic growth over the first half of the reform era implies the existence of two necessary conditions. First, there was a process of structural change involving both a rapid expansion of the share of industry in the economy and the leading role of a wide range of new, consumer durables industries. The former aspect corresponds to the trend of labor transfer from agriculture to industry, while the second aspect corresponds to the improvement in industrial productivity via dynamic increasing returns. Second, there existed an egalitarian pattern of income distribution, which underpinned mass-consumption, thereby inducing investment and overall demand expansion.

It was precisely the worsening of the pattern of income distribution under market reforms that led to the fundamental shift of China’s growth path in the early 1990s. The Gini index does indicate the trend of worsening income distribution. In 1978, the value of the Gini index in China was 0.16 for urban households and 0.21 for rural households, both being rather low in international comparison. By the year 2000, the value rose to high levels for both set of households: 0.32 urban, 0.35 rural.<sup>1</sup> Thus, from the early 1990s onwards, the leading position of consumption has been taken over by investment in sustaining economic growth on the demand side. And, in contrast to the previously growth path, the contribution of the effect of labor transfer to economic growth has tended to weaken. What has been of increasing importance is dynamic increasing returns within industry.

From the institution perspective, it can be posited that the egalitarian pattern of income distribution in the first half of the reform era was based mainly on the conditions that the economy was dominated by public ownership, and that within the publicly-owned sector egalitarianism in distribution was the norm. From the economic performance of Chinese SOEs, it can be found that, in the first half of the reform era, there was a basically appropriate match between mass consumption at the macro level and the long-term-oriented behavior of enterprises at the micro level. But this nexus of demand expansion and structural-institutional arrangement was not compatible with deepening market reforms. Market reforms disrupt the match between the macro environment and the micro institutions. On the macro side, such reforms tend to reduce workers’ income and threaten their job security, thereby undermining egalitarian income distribution and mass

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<sup>1</sup> Data from Li Shi *et. al.* (*A Positive Analysis of Income Distribution in China*, Beijing: Shehui Kexue Wenxian Chubanshe, 2000) and *Renmin Ribao* (People’s Daily) 9<sup>th</sup> July 2002.

consumption. On the micro side, such reforms threaten the loyalty or long-term commitment of major stake-holders to the firm, thus undermining the scope for collective learning. In the event, the Chinese enterprise system underwent a painful process of restructuring, downsizing and ownership change in 1995-1997. Then came the impact of the East Asian financial and economic crisis in 1997-1998, which, together with the enterprise restructuring, resulted in serious deficiency in macroeconomic demand and plunged the Chinese economy into a three-years period of deflation.

In response, the state leadership shifted from pushing forward the marketization drive to forcefully implement a range of market-supplanting policies in 1998-2002 – Keynesian-type fiscal stimuli, welfare-state measures, policies to revitalize SOEs and state banks, and a cautious approach to reforming the regime of external transactions (in particular, to shelve the target of liberalizing the country’s capital account). The policy reversal in 1998-2002 did not result in the resumption of the previous pattern of economic transformation. What has emerged is a new pattern that exhibits strong resemblance to the canonical East Asian model of economic institutions and growth. The path of industrialization characterized by capital deepening has become firmly established, with the pace of capital deepening tending to accelerate. At one level, this is largely due to the fact that consumption expansion has continued to be sluggish, and its leading position has been taken over by investment. Meanwhile, at another level, consistent with capital deepening and economic growth based on increasing returns is the rapid expansion of large-scale enterprises. The special impact of the shift of economic growth path on employment will be mainly discussed below.

### 3. Empirical Analyses of Economic Growth and Employment

Central to the analysis and exposition of the paper is the proposition that there has been a fundamental change in the character of China’s economic growth path over the reform era, from “industrial widening” and consumption-led during before the early-1990s to capital deepening and investment-led thereafter. To investigate into the impact of this change on labor employment, we carry out the following regression analyses.

First look at industry. We divide Chinese industry into two sectors: the formal sector represented by “township-and-above independently accounting industrial enterprises” before 1998 and “all state-owned industrial enterprises plus above-scale (of more than five million yuan by sales value) non-state-owned industrial enterprises” from 1998, and the rest of Chinese industry. The regression model takes the following form:

$$\ln L = \alpha + \beta \cdot DUM + \gamma \cdot \ln I + \delta \cdot DUM \cdot \ln I + \varepsilon \quad (1)$$

Where,  $L$  is total employment (i.e., the number of employed workers),  $I$  is gross fixed capital formation which is taken to represent capital deepening. According to Chow’s

Breakpoint Test, there is a significant difference between the structural relationship of the two variables for the two periods 1978-1990 and 1991-2007, both for the formal and informal sectors of Chinese industry. Hence, we use the dummy variable  $DUM$  which is assigned a value of 0 for the first period and 1 for the second period. The  $I$  data series is expressed in 1978 constant prices. The price deflator for the first period is estimated as a weighted average of the price indices of industry and construction, the weight being 0.6 and 0.4, respectively. The deflator for the second period is official.

Table 3 gives the result of the regression analysis of equation (1). It can be seen that all the explanatory variables are statistically significantly correlated to the dependent variable, but there are differences between the formal sector and the informal sector regarding the correlation between  $\ln L$  and  $\ln I$ . In the period 1978-1990, the correlation between  $\ln L$  and  $\ln I$  is statistically significant for both sectors. The value of the correlation coefficient is 0.269 for the formal sector and 0.376 for the informal sector, suggesting that the former sector is more prone to adopt capital-intensive technology. Moving on to the period 1991-2007, however, the correlation became much less significant. In the case of the formal sector, the correlation became negative, i.e.,  $0.269 - 0.186 = 0.083$ . As for the informal sector, the correlation remains positive but the value of the coefficient,  $0.376 - 0.323 = 0.053$ , is only one-third of that in the first period. These results imply that Chinese industry, both the formal and informal sectors, has indeed followed a capital-deepening growth path.

The approach adopted above can be extended to the analysis of both industry and the non-industry sector, i.e., the economy as a whole. We divide the Chinese economy into three regions: Eastern (coastal) provinces, Central provinces, and Western provinces. The reason for this division is that the three regions have form a pattern of specialized division of labor, where Eastern has a higher degree of specialization in manufacturing and Central and Western have a higher degree of specialization in primary products. This difference is especially visible in their respective exports. We use the following regression model:

$$\ln L = \alpha + \beta \cdot DUM + \gamma \cdot \ln I + \delta \cdot \ln X + \mu \cdot DUM \cdot \ln X + \varepsilon \quad (2)$$

where  $X$  is export value of the region, and is expressed in 1978 constant prices using GDP deflator, while all other variables are same as equation (1). The reason for using export as an explanatory variable is that export is a source of demand, and China has been largely specialized in exporting labor-intensive products.

Table 1 also gives the result of the regression analysis of equation (A.2). It can be seen that, again, all the explanatory variables are statistically significantly correlated to the dependent variable. The correlation between  $\ln L$  and  $\ln I$  is basically of the same level for the three regions. In contrast, the correlation between  $\ln L$  and  $\ln X$  is substantially different between Eastern and the other two regions before the 1990s: the value of coefficient is 0.074 for Eastern, 0.134 for Central, and 0.253 for Western. Entering the second period of 1991-2007, the correlation between  $\ln L$  and  $\ln X$  substantially decreased for all the three regions: the value of coefficient become -0.031 for Eastern, -0.020 for Central, and -0.022

for Western. It appears that the same tendency of capital deepening also applies to China's export sector, and export sectors of all the three regions.

**Table 3. Regression Analysis: Employment, Investment and Export**

Equation (1) : $\ln L = \alpha + \beta \cdot DUM + \gamma \cdot \ln I + \delta \cdot DUM \cdot \ln I + \varepsilon$ ( 1978-2007 )						
	$\alpha$	$\beta$	$\gamma$	$\delta$		A dj- $R^2$
Formal	7.240 (32.649)** *	1.306 (4.047)** *	0.269 (7.866)** *	-0.186 (-4.036)***		0. 843
Informal	7.927 (23.071)** *	2.642 (7.298)** *	0.376 (7.827)** *	-0.323 (-6.478)***		0. 948
Equation (2) : $\ln L = \alpha + \beta \cdot DUM + \gamma \cdot \ln I + \delta \cdot \ln X + \mu \cdot DUM \cdot \ln X + \varepsilon$ ( 1978-2007 )						
	$\alpha$	$\beta$	$\gamma$	$\delta$	$\mu$	A dj- $R^2$
Eastern	7.795 (23.377)***	1.561 (5.119)***	0.150 (9.478)***	0.074 (2.564)**	-0.105 (-4.958)***	0.988
Central	7.420 (45.117)***	2.058 (7.916)***	0.101 (5.137)***	0.134 (6.898)***	-0.154 (-7.416)***	0.983
Western	6.195 (26.106)***	3.407 (7.810)***	0.069 (2.269)**	0.253 (8.966)***	-0.275 (-7.693)***	0.965

Sources: National Bureau of Statistics, *China Statistical Yearbook*, various issues.

Note: Figures in parentheses are t-ratios; \*\*\*, \*\* and \* are significant at 1%, 5% and 10% confidence levels, respectively.

#### 4. Assessment

From the arguments and regression analyses above, it can be found that the shift of China's economic growth path from labor-intensive one to capital-deepening one results in a substantial decrease of employment, which is not consistent with the twin targets of government pursuing, i.e., the parallel growth of GDP and employment. A question naturally arises as to whether Chinese economy can return to the labor-intensive path that prevailing in the first half of the reform era, which clearly fits better into principles of the market, particularly the principle of comparative advantage. It has widespread supports from influential Chinese economists. It has been argued that this alternative growth path is

not only (allocatively) efficient but also equitable, in the sense that it would create more jobs and thus its immediate benefits would be spread to a bigger proportion of the population. Insofar as it would result in a negative impact on labor compensation, the argument goes, this could be offset by redistributive government policies and the system of social welfare provision.

It is in no sense a straightforward matter of judging which of the two types of economic growth path is better. Yet, for the sake of arguments, the assessment could be carried out in the following way. Consider growth. The productive efficiency associated with labor-intensive growth. The net outcome of this trade-off is necessarily an empirical issue, and, as has been indicated earlier, the productivity and output growth of the Chinese economy in the second half of the reform era appears to have out-performed that of the first half. In the context of demand-constrained economy, where the scarcity of resources is not necessarily a binding constraint, it can be further argued that allocative efficiency is likely to be less important than productive efficiency in underpinning economic growth. Again, as indicated, it is evident that China has been in a state of serious and worsening deficiency in macroeconomic demand since the mid-1990s.

Turn to the consideration of employment. It seems straightforward that a labor-intensive growth path must create more jobs than a capital-deepening one. Yet, this is not necessarily the case for a demand-constrained economy, i.e., a situation of aggregate expenditure being less than the full-employment output level. If the situation is caused by factors unrelated to the wage rate being too high, just like what we have characterized in the preceding sections of the Chinese economy, a fall in the wage rate (for inducing the substitution of labor for capital) would not necessarily result in an increase in employment. Everything depends on, first, the net impact on labor's share in national income and thereby on macroeconomic demand, and, second, the balance between the distribution-induced impact on macroeconomic demand and the wage-induced impact on capital-labor substitution.

## 5. Conclusions

The achievement of the twin targets of rapid economic growth and compensation-enhancing employment expansion has been the prime target of China's state leadership, particularly since the turn of the century. Achieving these twin targets is essential to the leadership's objective of "constructing a harmonious society".

In the first half of the reform era, China was able to achieve both rapid economic growth and rapid employment expansion, based on a labor-intensive growth path. The drawback is that the growth of labor compensation tended to lag seriously behind that of economic growth. This contributed to worsening income distribution and macroeconomic

demand deficiency, which, in turn, led to the breakdown of the prevailing growth path. Since the early-1990s, the Chinese economy has switched to a capital-deepening growth path. This has appeared to be capable of sustaining rapid growth and increases in labor compensation. The draw back is that its capability of job creation has been weak. Now, the sustainability of the growth path depends on whether productivity gains from capital-deepening industrialization can be channeled to the development of the labor-absorbing capacity of the services sector.

The desirability and feasibility of these two types of economic growth path are assessed in terms of their potentials for achieving the indicated twin targets, and in relation to the broader economic conditions of institutional evolution, structural change and macroeconomic demand. The conclusion that follows the assessment: there are both relative advantages and disadvantages for them, but, in view of the reality, the capital-deepening growth path appears to be more feasible than the labor-intensive one. To achieve the twin targets of rapid economic growth and employment expansion, a nuanced and internally-coherent approach is always needed in the design of government policies concerning labor employment as well as those concerning broader social and economic development.

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