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China, South Africa and the Lewis Model

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Abstract. The paper uses the Lewis model as a framework for examining the labour market progress of two labour-abundant countries, China and South Africa, towards labour shortage and generally rising labour real incomes. In the acuteness of their rural-urban divides, forms of migrant labour, rapid rural-urban migration, and high and rising real wages in the formal sector, the two economies are surprisingly similar. They differ, however, in the dynamism of their formal sector growth of output and employment, and in the growth of their labour forces. Whereas China - a labour-surplus economy *par excellence* despite unemployment until recently taking only a disguised form - is moving rapidly in the direction of labour scarcity, South Africa - which historically has been short of labour - is moving towards increased labour surplus in the form of open unemployment. The paper draws on research previously conducted by the author in separate research projects on the two countries.

Key words. China; South Africa; Lewis model; wages; labour supply; rural-urban migration; unemployment

JEL classification. J0, J4, O4, O5.

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1. Introduction

The Lewis model (Lewis, 1954) provides a good framework for explaining the ways in which the fruits of economic development are spread. Within a competitive market system, it is only when the economy emerges from the first, labour-surplus, classical stage of the development process and enters the second, labour-scarce, neo-classical stage that real incomes necessarily begin to rise generally. Up to that point the benefits of economic growth can accrue in the form of the absorption of surplus labour and not necessarily in the form of generally rising real incomes.

In this paper we examine labour market aspects of two of the countries included in the WIDER research project *Southern Engines of Global Growth* - China and South Africa. These are both countries on which I have conducted research in separate research projects. A comparison is potentially fruitful; the two economies have both interesting similarities and interesting differences. China is a labour-surplus economy *par excellence* and South Africa, although historically labour-scarce, has become a labour-surplus economy. Both have a large rural-urban divide; both have had similar policies towards rural-urban migration; in both countries rural-urban migration has increased and is in the process of changing form. Both have formal sector wages well above the level which would be determined by labour market forces, although for somewhat different reasons. They differ, however, in their rates of growth of the economy and of the labour force, and hence in the extent to which surplus labour is being productively absorbed. The progress of each economy is assessed against the stages of development outlined in the Lewis model.

Section 3 explains the salient features of the Lewis model. Section 3 examines recent progress in the Chinese labour market. Section 4 conducts a comparable analysis of recent trends in the South African labour market. Section 5 compares, contrasts, generalises and concludes.

2. The Lewis Model

The Lewis model is too well-known to require formal elaboration here. Recall that the turning point comes through two possible mechanisms. One concerns the marginal physical product of labour in the rural (or agricultural, or informal) sector. As labour leaves this sector, so the ratio of land and natural resources to labour eventually improves sufficiently for the marginal product of labour to rise. The second mechanism is the possible improvement in the terms of trade between agriculture and industry as the supply of marketed food falls or the demand for it rises, or both, causing the value of the marginal product of labour in agriculture to rise.

The supply price of rural labour is related to the marginal product or the average product of labour, depending on migrant objectives; Lewis assumed that the average product would be relevant until the marginal product exceeded it. A rising marginal product thus directly or indirectly increases the supply price of rural labour, and this is reflected in an eventually upward-sloping supply curve to the urban sector. Accordingly, further transfer of labour to the urban sector raises the market-determined real wage in that sector.

The process described above assists broad understanding of the way in which several of the currently developed market economies, and also some recent successful industrialising economies such as South Korea and Taiwan, achieved generally rising living standards. However, as a description of the development process of currently poor economies, the Lewis model requires several qualifications or amendments.

First, there is unlikely to be clear-cut distinction between the classical and the neo-classical stages, for two reasons: spatial heterogeneity and imperfect labour mobility mean that some areas experience labour scarcity before others; and the supply price of rural labour is more likely to rise gently than to jump sharply, so that the supply curve to the urban sector will curve upwards gradually.

The second qualification is that in many cases it is not possible to equate the agricultural sector with the rural sector or the informal sector, nor industry with urban or formal. Rural industry can be an important source of employment, and the urban informal sector can be an important store of surplus labour.

Thirdly, there can be capital accumulation and technical progress in the rural sector, which raises the average product and hence the supply price of rural labour before the labour outflow itself has its effect on the supply curve.

Fourthly, the formal sector real wage may be determined by non-market forces at a level that is above the market-clearing wage. The efficiency wage, labour turnover, and profit-sharing theories of wages, as well as institutional or bargained wage determination, are all contenders. This wage may either be set independently of the market-determined wage or bear some positive relationship to it.

Fifthly, the development of the urban, or industrial, or formal sector can itself lead to the creation of pressure groups and swing the balance of power towards those in that sector, to the detriment of those remaining outside it. This urban bias in economic policies can harm the rural sector and thus delay its benefiting from the fruits of economic growth (Knight and Lenta, 1980; Knight , Li and Song, 2006).

Sixthly, the growth rate of the urban, or industrial, or formal demand for labour may be inadequate in relation to the growth rate of the labour force. If the difference between the labour force and formal sector employment increases, the economy moves away from the turning point instead of towards it.

3. Trends in the Chinese Labour Market

This section is based on my research on the Chinese labour market over more than a decade and which culminated in the book with Lina Song, *Towards a Labour Market in China*, published in 2005. Much of the book is concerned with the transition from the former centrally planned and controlled labour system towards the creation of a labour market. Here I concentrate on the development aspects rather than the transition aspects of this evolution.

Under central planning China was compartmentalised by an 'invisible Great Wall' between rural and urban areas. Despite it having been a peasant-led revolution, there was a large rural-urban divide in incomes. The disbanding of the communes and the restoration of incentives raised peasant incomes but, as urban reforms advanced, the ratio of urban to rural household income grew, and it now stands at a record level of over 3 to 1. This reflects the unbalanced nature of political influence, however latent it might be (Knight and Song, 1999; Knight, Li and Song, 2006).

The Chinese economy has been a labour-surplus economy *par excellence*. Even at the time of liberation almost all the arable land was in use and since then the rural population and labour force have more than doubled. In the 1980s the increase was absorbed mainly by rural industrialisation, but as the urban reforms progressed the main absorption of the growing rural labour force was rural-urban migration.

The remarkable growth of the Chinese economy – averaging nearly 10% per annum over the last 25 years - and in particular the growth of the urban economy, required a great inflow of labour into the cities and towns. This need was accentuated by the slow growth of the urban-born labour force. The draconian one-child family policy, introduced in the late 1970s, began to slow down the growth of the urban-born labour force from the mid-1990s onwards. There are now possibly 100 million rural-urban migrants in China. The phenomenon has been referred to as 'the greatest migration in human history'.

However, rural-urban migration has taken a peculiar form. In principle, the large gap between urban and rural income per capita provides a great incentive for migration, and there is apparently no shortage of would-be migrants. However, the Chinese government has controlled and curbed the inflow of migrants into the cities, partly to protect the privileged urban people against labour market competition and partly to avoid the ills of excessive rural-urban migration that are evident in parts of the developing world. Rural-urban migrant flows are regulated to meet the urban demand for migrant labour, and migrants have been allowed into the cities only on a temporary basis. Urban settlement of migrants, and conferment of the rights of urban people, is made very difficult, although it is increasingly occurring, especially in the smaller cities.

In the late 1990s the policy of retrenchment of urban workers from the state-owned enterprises – a policy that was forced on government by increased loss-making, and the consequent fiscal costs – produced a slowdown in the inflow of rural-urban migrants. Many millions of urban workers lost their jobs, and open unemployment became a major problem for the first time. The true rate of urban unemployment rose from 4.2 per cent in 1990 to at least 11.5 per cent in 2000 (Knight and Xue, 2006). City governments, in trying to protect their residents, responded by curbing the employment of migrants (Knight and Song, 2005, ch. 6).

Rural-urban migrants are at great, discriminatory, disadvantage in the urban labour market. They have to take the least attractive jobs – the jobs that urban-born people do not want. Their wages are lower, and they have few of the rights that urban rights normally possess, such as rights to pensions, to health and unemployment insurance, etc. (Knight and Song, 2005, ch.5). Despite these disadvantages, millions of rural workers see migration as the way to improve their incomes. However, most of them return home permanently after an urban spell, and those who keep coming back retain close links with their rural households.

Table 1 provides summary information on the main trends in the Chinese labour market between the census years 1990 and 2000. The labour force grew by 86.5 million over that decade, or by 1.3 per cent per annum. We see that the increase was very largely absorbed into the urban economy. The urban labour force grew by 74.2 million, or by 3.6 per cent per annum, whereas the rural labour force grew by only 14.1 million, or by 0.2 per cent per annum. In fact, the rural labour force peaked in 1995 and then began gently to fall.

The table shows the sharp rise in urban unemployment. The 3.1 per cent per annum growth in urban employment masks a sharp fall (by 3.0 per cent per annum) in state- and collectively-owned enterprise employment, and a huge rise (by 15.7 per cent per annum) in private sector employment, much of it informal. There was also a redistribution of economic activities in the rural areas. Employment in rural industry grew by 3.3 per cent per annum, private and individual enterprise employment by 9.8 per cent per annum, and the number of household workers (essentially farmers) fell by no less than 55.5 million, or by 1.4 per cent per annum. In summary,

Table 1 shows a rapid reallocation of labour away from agriculture and towards the urban sector. In the decade of the 1990s China was rapidly redeploying its surplus rural labour.

Has the remarkable growth of the Chinese economy propelled it into the second, labour-scarce, stage of the Lewis model? Recall that the prediction, for an economy with free labour mobility and market-clearing, when labour becomes scarce, both urban real wages and rural real incomes will begin to rise more rapidly. Of course, household real incomes have risen recently in recent years, in rural as well as in urban China. However, the growth in real income per capita in rural China – at 5.8 per cent per annum over the period 1989-2005 – has been well behind the corresponding annual growth in real GDP per capita (8.7 per cent). By contrast, the growth of urban real wages has been rapid – by 8.0 per cent per annum over those 16 years, but this is probably not the result of growing labour scarcity.

Urban workers continue to be protected against competition from rural-urban migrants, and we have evidence of profit-sharing in the, predominant, state-owned sector. As profitability has been restored, and has grown, in the state-owned enterprises, so wages have risen. Wages are sensitive to the profitability of the employer. This can be explained by a variant of efficiency wage theory. The culture of the Chinese *danwei* is such that workers expect to share in its success and will reduce their effort if they do not share it (Knight and Li, 2005). The benefits of economic growth are thus unevenly spread. For this and other reasons, labour market inequalities are growing (Knight and Song, 2005, chs.3, 4, 7).

There is still much surplus labour in rural China, especially in the interior provinces. However, the surplus is declining: the number of people working in rural China began to fall in the mid-1990s. If China's remarkable economic growth continues, the labour scarcity that is already been felt in a couple of the growth points will gradually spread across China. Moreover, as migrants move up the job skill ladder in urban enterprises, so the economic need for them to be stable, long term workers will grow, and this will be recognised by employers and government. The current predominant pattern of temporary or oscillatory migration will increasingly give way to permanent urban settlement, as it has in other parts of the developing world (Knight and Song, 2005, ch. 5).

4. Trends in the South African Labour Market

It is arguable that the main problem facing South Africa is unemployment and its rise. Its economic, social and political consequences threaten the country's future economic growth. Developments in the labour market hold the key to South Africa's prosperity or penury.

South Africa's transition to democracy took place in 1993, with the transfer of power to the African National Congress (ANC). Before that time, the economy had been characterised by labour market discrimination on racial lines. Most Africans lived in the rural areas but the majority of livelihoods were obtained in the urban areas. In the late nineteenth century, as the mines and farms were developed, South Africa was characterised by unskilled labour shortage. Indeed, this led to the importation of Indian and Chinese labour. However, by the late twentieth century, the lands allocated to Africans were heavily populated and had become labour reserves. The reserves contained much underemployment, and they supplied migrant labour to the capitalist sector (Knight and Lenta,1980). Restrictions on urban settlement meant that much rural-urban migration was temporary and oscillatory – rather like China! With the advent of democracy, however, rural-urban migration accelerated and increasingly involved urban settlement.

Also like China, there is in South Africa a large rural-urban income divide. Relatively unskilled wages in the formal sector are far above market-determined levels, although the reasons for this are different from those in the Chinese case. The emergent African trade union movement was important in the liberation struggle and, when it won power, the ANC formed an alliance with COSATU, the trade union coalition. The government introduced labour market policies which were favourable to organised labour with respect to, e.g., bargaining rights, minimum wages and employment protection.

Trends in the labour market are reviewed by Kingdon and Knight (2005) and are summarised in Table 2. There are two concepts, and measures, of the labour force: the broad and the narrow. The broad measure includes all persons who are working for income or report that they want to work; the narrow measure (the normal ILO measure) excludes from the labour force those persons who, although they report that they want to work, were not actively seeking work in the previous reference period, say a week or a month. There are equivalently broad and narrow unemployment. Whichever definition of the labour force is used, the labour force grew rapidly over the period 1995-2003, by 4.2 per cent per annum on the narrow measure and by 4.8 per cent per annum on the broad. There are three possible reasons for this remarkable growth: immigration, natural increase, and increased labour force participation. Net in-migration is difficult to measure, much of it being informal and even illegal. The adult population grew by 2.7 per cent per annum. The labour force participation rate rose sharply, e.g. from 56 to 67 per cent over the 8 years. The rise was greatest among African women, and is associated with rural-urban migration, rising education, and changing family structures. The figures look less daunting for the period 2000-3, when the broad labour force grew by 2.6 per cent per annum. The post-2000 slowdown is associated with the effects of HIV/AIDS. The net effect of this epidemic on the labour market is unclear, however, as it may well also have retarded the growth of output and employment.

Wage employment grew relatively slowly over the period, by 1.8 per cent per annum. Those not obtaining wage jobs entered self-employment or unemployment. Self-employment did indeed grow rapidly, by 5.1 per cent per annum, but it did so from a small base. Reflecting historical discrimination, the efficiency of the formal sector, and the inhospitable policies of central and local governments, the self-employment and the non-agricultural informal sectors have been, and remain, tiny by international comparison, and only part of the informal sector is characterised by freedom of entry.

Most of the increment to the labour force went into unemployment. The narrow unemployment rate rose from17 to 28 per cent over the period, and the broad from 29 to 42 per cent. Which measure is the more appropriate in the South African context? Kingdon and Knight (2006) devised three tests and concluded from their analysis that the broad unemployment is the better measure: many of the unemployed found it not worthwhile to search and became ‘discouraged workers’. Is the unemployment of a voluntary or involuntary nature? Kingdon and Knight (2004), in their investigation of this issue, concluded that the great majority of unemployment is indeed involuntary. It appears that the limited scope for entering the informal sector pushed many people into unemployment.

If unemployment is high and rising, the prediction is that there will be downward pressure on market-determined wages. However, in much of the formal sector relatively unskilled wages are determined by collective bargaining and institutional arrangements, and such wages are maintained well above market-determined levels. Kingdon and Knight (2006a) have shown the existence of a ‘wage curve’ across different areas of South Africa, i.e. a negative effect of unemployment on wages for a wide range of unemployment rates. This implies that there is some partial flexibility of wages to unemployment, but it does not extend to the most organised sectors of the economy.

An annual survey of medium- and large-scale enterprises shows that between 1995 and 2003 real wages rose by 1.8 per cent per annum. For wage employment as a whole, however, Table 2 shows a gentle decline of 1.6 per cent per annum. By contrast, the fall in real earnings of the self-employed was dramatic (-11.4 per cent per annum). As workers crowded into the free-entry part of this sector, it bore the brunt of labour market pressures.

Would greater labour market flexibility have solved the problem of rising unemployment? The rapid divergence between the supply of and demand for labour – by about three per cent per annum over the period under study – placed a heavy burden of adjustment on the labour market, which would have put great strain even on the most flexible of labour markets. In fact, it appears that major segments of the South African labour market are not flexible. This imposes an exceptional burden on the more flexible segments, the consequence of which has been rising unemployment and associated poverty.

5. Conclusions

The Lewis model is a helpful framework for analysing labour market trends in both China and South Africa. However, it requires modification: in neither country does the evidence correspond well to the theoretical model. In neither does the relative price mechanism that is hypothesised in the model operate: changes in agricultural prices have been determined more by reduced government price interventions and by trade liberalisation. In both countries we find powerful urban bias in economic policies and formal sector wages well above the market-clearing level. Their labour markets are characterised by segmentation and inflexibility.

Underlying the differences in their recent labour market performance is the disparity in the growth rates of the Chinese and South African economies. China's rapid economic growth is the result of a combination of many factors, including the continued elimination of inefficiency associated with central planning, the employment of previously underemployed resources including labour, the opening up of the economy to trade so as to exploit China's comparative advantage in unskilled-labour-intensive activities, and the investor confidence which is self-reinforcing while the virtuous circle of growth continues.

South Africa's relatively slow growth rate over the last decade is associated with its having a relatively mature economy, with resources other than unskilled labour being fully employed, and low investor confidence – on account, perhaps, of the social instability and crime that stem from high unemployment and concern about the extent of labour protection. Its comparative advantage in natural-resource-intensive activities such as gold, diamonds and minerals, has not provided scope for the rapid expansion of exports. There is a danger that low business confidence and inadequate investment make things worse in the labour market, which by various processes of cumulative causation feeds through into self-fulfilling pessimism about the economy.

In both countries formal sector workers are well protected against competition from rural people and the unemployed. In China, however, the slow growth of the labour force, in particular the urban-born labour force, has provided great scope for rural people to be absorbed productively into the urban economy. Except in particular growth points, however, there is as yet little sign that migrant wages are rising rapidly: that would be a good indication of emerging rural labour scarcity. However, the trend is in the right direction.

In South Africa the rapid growth of the labour force in relation to the slow growth of formal sector employment means that growing residual labour force has gone into low-income self-employment activities or into unemployment. Much of the rural-urban migration has not led to productive absorption into the urban economy. There are good reasons for optimism about the South African economy. These include competent macroeconomic policy-making, a strong entrepreneurial class, sound infrastructure, and buoyant prospects for world mineral markets. However, South Africa's dismal labour market trends, with their implication of rising numbers in poverty, pose a threat to the success of the economy as a whole.

It would be interesting to examine labour market trends in the other two countries included in the WIDER project on Southern *Engines of Global Growth* – India and Brazil. A comparative assessment of all four countries within the framework of the Lewis model would help to indicate in what ways and how widely the fruits of economic growth are being shared within each economy.

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Table 1

The labour force in China: its level, distribution, and change, 1990-2000

	1990		2000		Change 1999-2000		
	million	% of total	million	% of total	million	% of total	% change p.a.
labour force	651.3	100.0	737.8	100.0	865	100.0	1.3
urban	174.2	26.7	248.4	33.7	74.2	85.8	3.6
unemployed	3.8	0.6	16.9	2.3	13.1	15.1	16.1
employed	170.4	26.2	231.5	31.4	61.1	70.6	3.1
formal	139.0	21.4	96.0	13.0	-43.0	-49.7	-3.0
informal	31.4	4.8	135.5	18.4	104.1	120.3	15.7
rural	471.4	73.3	489.3	66.3	12.2	14.1	0.2
TVE employment	92.7	14.2	128.2	17.4	35.5	41.0	3.3
private and individual enterprises	16.0	2.5	40.7	5.5	24.7	28.6	9.8
household workers	368.4	56.6	320.4	43.3	-48.0	-55.5	-1.4

Source: Knight and Song, 2005, tables 2.2 and 2.3, from official statistics

Table 2
The labour force in South Africa: its level, distribution and change, 1995-2003

	1995 OHS	2003 LFS	Change 000	Change % p.a.
labour force, narrow (000)	11628	16192	4564	4.2
labour force, broad (000)	13667	19954	6287	4.8
wage employment (000)	8231	9509	1278	1.8
self employment (000)	1421	2111	690	5.1
unemployment, narrow (000)	1976	4570	2584	11.0
unemployment, broad (000)	4015	8332	4317	9.6
unemployment rate, narrow (%)	17	28	11	-
unemployment rate, broad (%)	29	42	13	-
real earnings in wage employment, 2000 prices	3191	2805	-386	-1.6
real earnings in self employment, 2000 prices	6866	2610	-4256	-11.4

Source: Kingdon and Knight, 2005, table 1, from official household surveys (the October Household Survey of 1995 and the Labour Force Survey of 2003).