EXPORTS, FDI, GROWTH OF SMALL RURAL ENTERPRISES AND EMPLOYMENT IN CHINA

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Abstract
This paper analyses the growth of employment in China during the post reform period. It argues that the Chinese experience with export-led growth provides an excellent example of the phenomenon of a vent for surplus productive capacity provided by exports, identified by Adam Smith in the Wealth of Nations and elaborated by Hla Myint. The paper extends the Smith-Myint model of 'vent-for-surplus' productive capacity to 'vent-for-surplus' resources by allowing foreign investment inflows. The 'vent-for-surplus' effect of exports on employment growth is examined in a dynamic labour demand framework for a panel of township and village enterprises (TVEs) in China.

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I. Introduction

In an overpopulated, large agricultural economy such as China, there could be two interpretations of the relationship between labour, exports, foreign direct investment (FDI) and growth. One is the 'vent-for-surplus' thesis which suggests that the opening up of the economy to international trade provides an outlet for surplus productive capacity of the country, and promotes economic growth. The other is the 'development with unlimited supplies of labour' model which suggests that capital accumulation in the industrial sector cumulatively draws surplus labour from the agricultural sector, and leads to output expansion in the economy. There are subtle differences between the two models and each of them has differing implications for policy. This paper analyses the two models in the context of China's exports and draws policy implications.

The rest of the paper is organized as follows. Section II analyses the 'vent-for-surplus' model in the context of China. Section III discusses the surplus in China. Section IV discusses exports of township and village enterprises (TVEs) and foreign-invested enterprises (FIEs) and their relevance to the 'vent-for-surplus' model. Section V conducts empirical tests. Section VI concludes.

II. The 'vent for surplus' model

Discussion on exports and growth dates back to Adam Smith who argued that exports could function as a mechanism for utilising surplus resources in the economy, in addition to other dynamic gains it yields. As Smith put it,

'Between whatever places foreign trade is carried on, they all of them derive two distinct benefits from it. It carries out that surplus part of the produce of their land and labour for which there is no demand among them, and brings back in return for it something else for which there is a demand. It gives a value to their superfluities, by exchanging them for something, which may satisfy a part of their wants, and increase their enjoyments. By means of it, the narrowness of the home market does not hinder the division of labour in any particular branch of art or manufacture from being carried to the highest perfection. By opening a more extensive market for whatever part of the produce of their labour may exceed the home consumption, it encourages them to improve its productive powers and to augment its annual produce to the utmost, and thereby to increase the real revenue and wealth of society' (Smith, 1776).

Smith's theory was further developed by Myint (1958) as the 'vent for surplus' theory and the 'productivity' theory of international trade. According to the 'vent for surplus' theory, trade provides a new effective demand for the output

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of the surplus resources in the economy which would have remained unused in the absence of trade. In other words, international trade may activate dormant or idle resources and draw them into economic activity for export production resulting in an 'awakening of domestic resources through the creation of new wants that make people work harder and produce more products for export' (Nurkse, 1961). International trade overcomes the narrowness of the home market and provides an outlet for the surplus product over and above domestic requirements. Myint (1958) argues that the 'vent-for-surplus' approach is much more plausible in explaining the beginnings of trade, while the comparative advantage theory explains the type of goods traded.

According to Myint's (1958) elaboration of the 'vent for surplus' theory, the condition for exports to serve as a 'vent-for-surplus' is the existence of surplus productive capacity and an inelastic domestic demand for the goods it can produce. In a less developed country, such surplus productive capacity may exist because of a 'disproportion between its production and consumption capacities'. That is, the surplus may not be an absolute surplus relative to needs of an affluent developed society, but surplus relative to the current consumption capacity of a developing country. Therefore, in the 'vent-for-surplus' model, the major thrust for development is not on the supply side, but on the demand side.

Myint's elaboration of the vent for surplus theory bears careful examination. First, he distinguishes the vent for surplus theory from the traditional HOS type model of comparative cost advantage theory. In the comparative cost advantage theory, the price mechanism would equilibrate demand and supply and eliminate any surplus productive capacity. If land is in surplus relative to labour, wages would increase and rents decline and land intensive goods would be cheap relative to labour intensive goods. This would eliminate surplus land. But all this assumes a well functioning price mechanism which may be absent in an underdeveloped economy and there may be no equilibrating process. Second, lack of effective home demand for the produce of the surplus factor may arise because of the underdeveloped state of the economic organisation in the country. Such economic organisation may include poor transportation and communication facilities and lack of suitable investment opportunities. Third, the vent for surplus theory emphasises increased production through drawing upon increased volumes of existing resources and not by making existing resources more productive. Fourth, the vent for surplus theory posits a role for inward flows of foreign capital into the economy with surplus resources. The role of foreign capital here, however, is not so much to augment productivity of existing resources but to develop transport and communications, develop marketing channels and bring into production unused resources. Fifth, surplus capacity may exist in the economy not because of the supply side factors

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discussed above but more importantly because there is insufficient effective demand for the output of the surplus factor.

The vent for surplus thesis, which argues that the opening up of the economy to international trade and foreign direct investment will provide a vent for the output of surplus resources, can be depicted diagrammatically (Figure 1). Assume there are two factors of production and two goods produced in the economy. Labour (L) and capital (K) are the two factors and X and Y are the two goods that are labour- and capital-intensive respectively. Given the usual assumptions of constant returns to scale we have the familiar bowed out transformation curve aa. The economy produces at A and consumes at D by trade. Now allow for inflows of foreign capital into the economy. According to Rybczynski Theorem, assuming constant commodity prices, the production and exports of capital-intensive goods Y will increase by a greater proportion, and that of labour-intensive goods X will decline if labour supply remains unchanged and labour are fully employed. Therefore the transformation curve shifts outwards to bb and production shifts to B where output of labour-intensive X decreased. When there is surplus labour in the economy, foreign capital utilises the labour to produce additional goods for export. The transform curve shifts outwards further to cc and production shifts to C on the new curve. There is no change in productivity of labour, existing surpluses of labour are utilised to produce goods for export. Such exports enable the economy to consume at F.

Export to international markets is crucial for the growth process as the domestic market is already saturated before the production expansion, and there is no demand in the domestic market for increased products. Otherwise, inflows of foreign capital and the production expansion cannot be sustained. The cost of such growth could be very low as the opportunity cost for the surplus labour could be zero if 1) the volume of surplus labour are large enough to meet the increased demand for labour, and 2) the quality of labour is homogeneous and production expansion funded by FDI will not only attract educated and efficient labour from current production. Moreover, export growth also enables a country to overcome the balance of payments constraint, and ally the government to run the economy at a higher level of aggregate demand (Kaldor, 1975; Thirlwall, 1979).

Figure 1: Gains from FDI-based exports with surplus labour
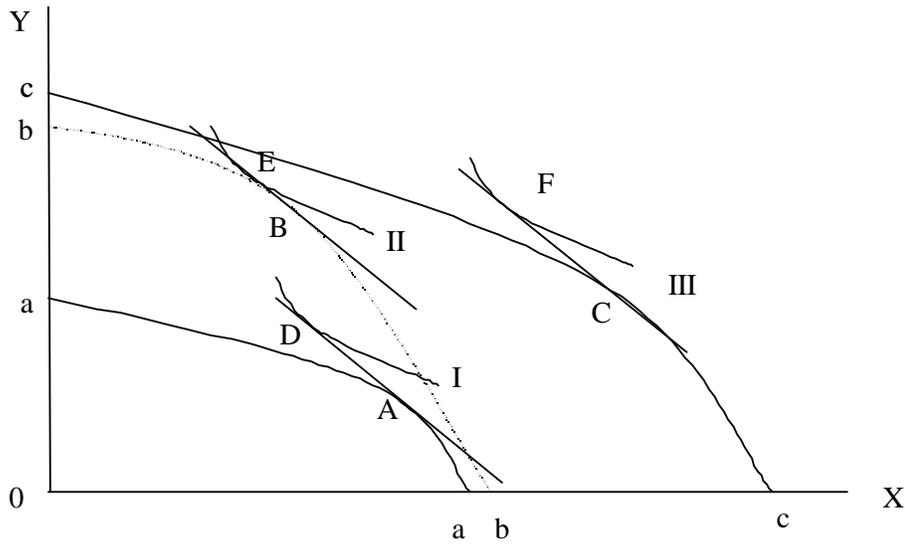
It is also important to distinguish the vent for surplus phenomenon associated with exports from the Arthur Lewis type of models which emphasise disguised unemployment in the agricultural sector and the transfer of surplus labour from the agricultural sector to the industrial sector (Lewis, 1954).

The major assumption of the Lewis model is that there are unlimited supplies of labour in the subsistence sector. Labour is unlimited in the sense that, the supply curve of labour is infinitely elastic at the existing wage. The marginal product of workers in the subsistence sector is equal to or below the subsistence wage so that a reduction in the number of workers would not lower the average product of labour in agriculture and might even raise it.

The essential differences between the Lewis type models and the vent for surplus model should be noted. First, the Lewis model assumes a closed economy and full employment in the industrial sector. Second, there are no specific improvements in transportation and communications when labour is transferred from the subsistence to the industrial sector. Third, labour is in surplus in the subsistence sector because of a relative shortage of land and not because there is insufficient demand for its output. Fourth, the model posits a surplus of investible resources once the transfer process begins. Labour continues to be paid its subsistence wage in the industrial sector, in some models a slight premium over the subsistence sector is included because of increased consumption needs in the industrial sector, and this wage deducted from the profits in the industrial sector generates an investible surplus. None of these

assumptions are present in the Myint-Smith vent for surplus model. It is lack of demand which yields a surplus of resources in the model. More specifically natural resource oriented products such as minerals and plantation products, cited by Myint, are not produced because of lack of demand.

III. Surplus in China

Does the vent for surplus model provide an explanation for the growth of exports and employment in China? Few would dispute the fact that China possesses a reservoir of surplus labour because of her sizeable population. Much of this surplus labour was in the rural sector and the state owned industries. The state owned industries were the largest source of non-agricultural employment until 1992 (Figure 2). But much of this was in the nature of disguised unemployment, in the sense that the marginal product of labour was well below the wage rate. Estimates of surplus labour in the SOE sector vary with the definition and data sources. The Chinese official statistics assess surplus labour in some SOEs at around one third to one half of the work force (Fan, G. et al., 1998). It is reported that 'according to the State Commission of Economic System Restructuring, there are over 30 million surplus labourers in SOEs; in many industries, over 30 percent of workers are surplus; in some industries, the rates reach over 50 percent'[1].

Figure 2: Employment Growth in China by Sector (1978-2000)
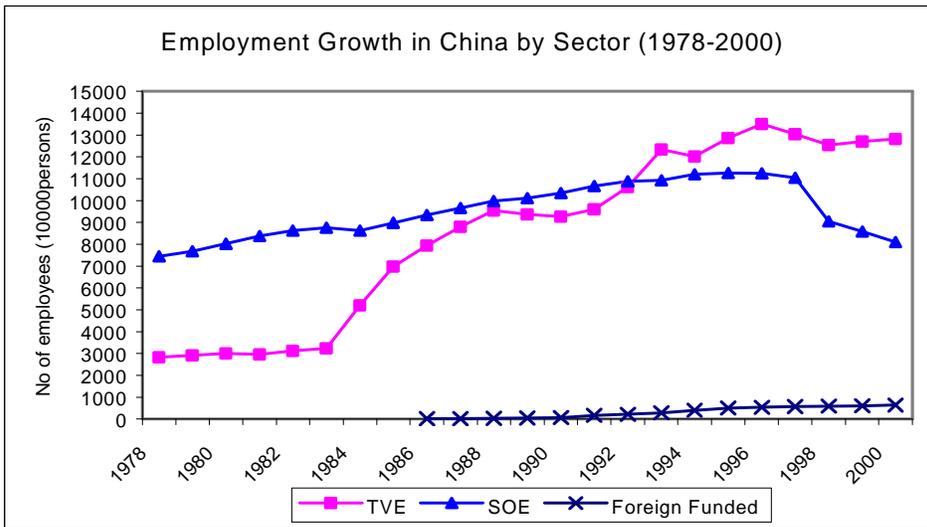
Source: China Statistical Yearbook

The reforms since the year 1978 were guided by the objective of 'modernisation of the Chinese economy', investments were geared towards the adoption of modern, labour-saving technologies. As a result, increased investment in fixed assets in the SOE sector did not draw much labour from the agricultural sector. Growth of employment was not proportional to the rate of capital formation. Employment growth was left far behind capital accumulation. While capital accumulation in the SOE sector increased by 575 percent from RMB75 billion to RMB1650 billion over the period 1980-2000, number of employees in this sector increased only 40 percent from 75 million to 113 million over the 1978-1995 period, and even began to decrease sharply after 1996 (Figure 3).

Figure 3: Employment growth and capital accumulation in the SOE sector
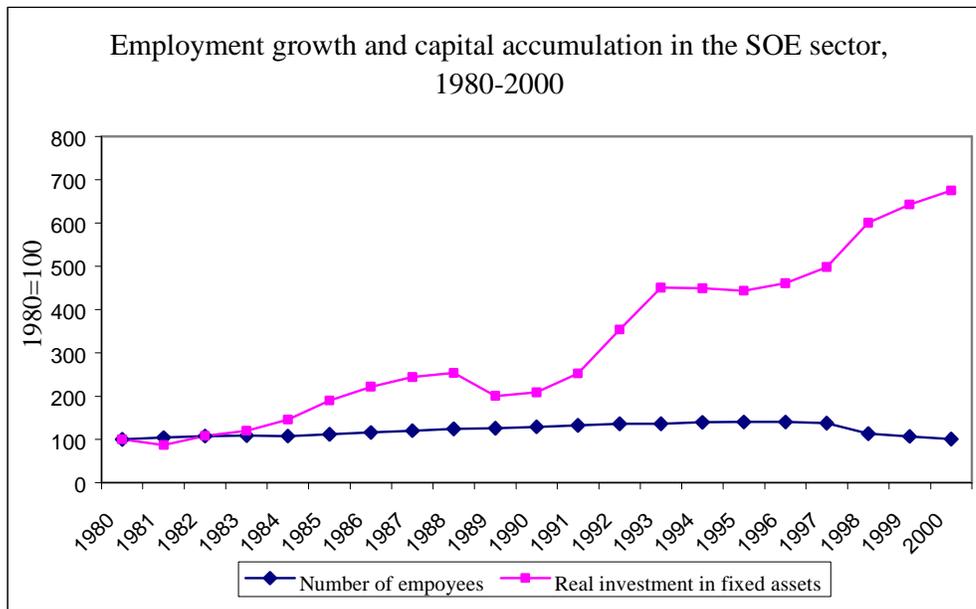
Source: China Statistical Yearbook.

Could this reservoir of labour be deemed to be in surplus awaiting an export vent? Myint's conception of surplus resources was in the context of sparsely populated countries with a surplus of land or unexploited mineral resources, Even so, it can be shown that China not only possessed surplus labour in the years following liberalisation but also surplus productive capacity in the manufacturing sector. Prior to the reforms the Chinese economy was centrally planned. The industrialisation strategy was centred on heavy industries at the expense of light industrial products, and prices were heavily tilted in favour of the former. Accounting prices were above equilibrium prices for the heavy industries and below the equilibrium level for the light industries (Lin, Cai and

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Li, 1995). Once the reforms were in place, there was substantial excess capacity in the heavy industries, for example, the iron and steel industry. Low technology development also resulted in surplus of low quality, low technology-content production capacity. This was a structural surplus as it were due to inadequate production structures, a point made by Myint in the context of the 19th century less developed countries.

There was also a surplus of capacity in the light industries in place due to a lack of effective demand for their products. Over the 1978-1999 period, real gross domestic product (GDP) per capita grew at the average annual rate of 8.3 percent; while the average real growth rate of household consumption and per capita annual disposable income were 7.1 and 6.2 percent per year respectively over the same period (Figure 4). As a result, growth in consumption lagged behind the growth in production capacity.

Figure 4: Output and consumption index at 1978 prices, 1978-99
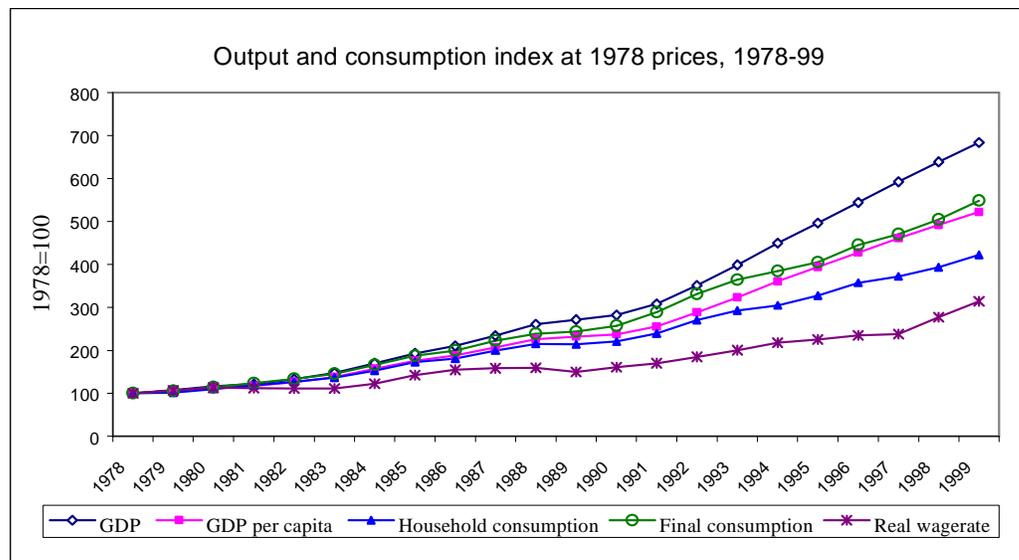
Source: China Statistical Yearbook.

Moreover, consumer demand was not distributed evenly among the population. The Gini coefficient in China increased from around 23 in 1980 to 40.3 in 1998, compared with that for India from 34 to 37.8 over the same period. In 1998, the top 20 percent of population in China possessed about 50 percent of total income[2]. Incomes of the majority of population did not grow as fast as the total national income. Purchasing power of most people, particularly that of the

peasants and the blue-collar workers continues to be low. This too contributed to the growth in surplus productive capacity.

This surplus productive capacity was further enhanced by reforms in employment and health care systems, instituted in the absence of social security systems. As increasing bankruptcies occurred with reforms in the SOE sector, millions of workers were laid-off (xia gang). In addition, reforms in health care system gradually eliminated the free medicare system (gong fei yi liao zhi du), while the health insurance system was not well established. All this caused uncertainty in people's expectations of the future, and consumption was reduced. Household savings continued to increase despite eight consecutive cuts in interest rates. The consumer price index turned negative in 1998 and 1999. This further enhanced surplus in production capacity, particularly in consumer products industries.

As a result, in most of the major industries with the exception of the petrochemical industry, around 50 percent of productive capacity remained un-utilised. In 1995, about 40 percent of steel production capacity was idle, about 75 percent of dyed cloth production capacity was idle, more than 50 percent of machinery production capacity was not utilised. Even in the newly developed electrical household appliances industry, about 50 percent of production capacity was left idle (Table 1). On an average, the share of idle capacity is about 10 percent higher for consumer goods than for producer goods, which suggests that the lack of strong effective demand was a major factor responsible for the surplus.

Not only was production capacity left idle, inventories also rose considerably. Many firms, mainly the SOEs, were making heavy losses. The gravity of the problem was reflected in Premier Zhu Rongji's speech at the fourth meeting of the Eighth People's Congress in 1996:

'The current problems of SOEs are: excessive investments in fixed assets with very low return rates, resulting in the sinking of large amounts of capital, low sales-to-production ratio giving rise to mounting inventories. The end result is that the state has to inject an increasing amount of working capital through the banking sector into the SOEs'[3].

To sum up, soon after the reforms and on until the nineties, China possessed both surplus labour and surplus productive capacity. Exports provided an effective demand for these surpluses. Inflows of foreign capital utilised these surpluses to promote exports of a variety of manufactures. Most of these were mainly imported materials, which were processed with the surplus labour and

idle capacity. In addition to the joint ventures in the Export Processing Zones, the institutional innovation which allowed foreign capital to exploit the surpluses to produce exportables was the TVEs[4].

Table 1: Idle production capacity in the Chinese manufacturing sector

Unit: 10,000 unless specified

Product	Unit	Output	Production capacity	% of idle capacity
Dyed cloth	100mil metre	137	577	76
Sulphuric acid	ton	1811	2138	15
Nitric Acid	ton	56	81	31
Paint	ton	211	433	51
Dyed cloth	ton	35	40	13
Plastics	ton	517	671	23
Synthetic fibre	ton	166	213	22
Washing liquid	ton	300	497	40
tyre (Outer)	pc	7945	14528	45
Tyre (Inner)	pc	7349	19883	63
Cement	100mil ton	4.8	6	20
Glass	100mil cases	1.6	1.9	16
Steel	100 mil ton	0.9	1.5	40
Industrial boiler	ton	12	147	92
Engine	kw	15819	36041	56
Steam turbine	kw	1243	12429	90
Machine tool	set	20	44	55
Forging press	set	17	34	50
Oil-refining equip.	set	2.6	15	83
Forklift	set	3.3	8.3	60
Bearing	pc	40	117	66
Truck	set	145	329	56
Producer Products Average				**48**
Car	set	24	52	54
Motorcycle	set	825	1490	45
Video camera	set	4.6	35	87
Computer	set	84	625	87
Air conditioner	set	683	2035	66
Video player	set	208	517	60
Washing machine	set	948	2183	57
Colour TV	set	2058	4468	54
Refrigerator	set	919	1820	50
Telephone set	set	9956	19369	49
Bicycle	set	4472	8199	45
Camera	set	3326	5766	42
Vacuum	set	806	1284	37
Consumer Products Average				**56**

Source: The Third National Industrial Census of China, 1995. Cited in Hu, C. (1999).

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IV. Exports of TVEs and FIEs, and vent for surplus labour

Most of TVEs and export-oriented FIEs positioned themselves in the labour-intensive processing or assembly production activities such as apparel, textiles, footwear, toys and processing and assembling of consumer electronic products. They are small in size. They recruited unskilled cheap labour from the rural sector and skilled worker from the SOE sector. Unlike the state-owned sector, the TVEs and FIEs are market-oriented. They are not subject to central planning. They enjoy a high degree of autonomy of operations. Their production responds to market demand. They recruit and lay-off employees according to market conditions. They are not bailed out by the government if they go bankrupt.

With the gradual opening up of the economy, TVEs have attracted substantial volumes of export-oriented FDI (Table 2). Many of the TVEs and FIEs are export-oriented. They became the major export entities in China in the 1990s. In the year 1999 exports of TVEs reached US$94 billion, accounting for 48 percent of the country's total exports[5]; exports of FIEs amounted UD$89 billion, accounting for 46 percent of China's total exports[6]. Most of their exports are labour intensive. The proportion of labour-intensive exports in total exports for TVEs was 85 in 1999 (Figure 5). Statistical tests of factor content also suggest that China's exports are labour-intensive (Fu, 2004).

Table 2: Major Exporting Industries of TVEs, 1995

Industry	Export-output ratio	Export Value (mil. $)	FDI-total capital ratio
Toy manufacturing	0.70	579	0.54
Computer man.	0.65	193	0.54
Apparel man.	0.54	3146	0.36
Sport articles man.	0.54	100	0.39
Leather product man.	0.52	1320	0.41
Watch & Clock man	0.51	91	0.55
Other electric equipment	0.50	63	0.73
Feather product man.	0.47	243	0.28
Hat manufacturing	0.46	29	0.33
Electronic appliance man	0.44	93	0.67
Knitted product man.	0.41	833	0.33
Footwear man.	0.39	170	0.32
Plastic shoes man.	0.39	61	0.44
Office machines man.	0.36	13	0.40
Electronic parts man.	0.34	276	0.44
Textile	0.22	4484	0.17

Source: Calculated from 'The Third National Industrial Census of P.R.China', 1995.

Figure 5: Export composition of TVEs, 1999
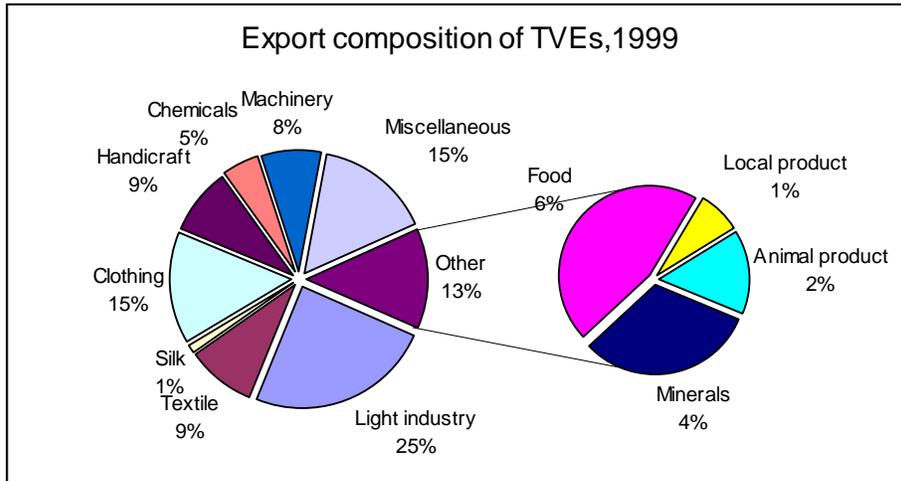
Source: China Statistical Yearbook of Township and Village Enterprises, 2000.

Export-orientation enabled the TVEs and FIEs to overcome the narrowness of the domestic market due to lack of sufficient effective demand, and grew rapidly in the post-reform decades. Expansion of export markets encouraged the TVEs and FIEs to reinvest in production and draw increasing volumes of surplus labour from the agricultural sector. As a result, employment in the TVE and FIE sectors grew rapidly.

It is thus that over the period 1978 to the early 1990s exports of TVEs and FIEs provided a vent for surplus labour in China. In the absence of exports, labour surpluses and idle productive capacity could not have been absorbed due to inadequate production structures and lack of effective demand. It is in this sense that the model of growth in China during these years approximates to the Myint type of vent for surplus model rather than the Lewis type of labour transfer model.

V. Empirical evidence

The foregoing analysis suggests that exports may contribute to employment growth in two ways. First, exports provided an outlet for the surplus productive capacity. Second, exports enabled the TVEs and FIEs to grow rapidly with China's surplus labour, and led to growth of employment in these sectors. This section provides some empirical evidence on the employment effect of exports in China.

Model

We can examine the impact of exports on labour demand by modelling the employment effects of exports. Following Greenaway et al. (1999) and Milner and Wright (1998), we begin with a Cobb-Douglas production function

$$Q_{it} = A^{\gamma} K_{it}^{\alpha} N_{it}^{\beta} \tag{1}$$

where *i* and *t* denote regions and time respectively. Q is real output, N is labour input, K is capital stock. α and β represent the factor share coefficients and γ allows for factors changing the efficiency of the production process. Assuming that firms are profit-maximising, the marginal product of labour equals the wage (w) and the marginal product of capital equals its user cost (c). Eliminating capital from the equation by solving these equations, we get the following equation:

$$Q_{it} = A^{\gamma} \left(\frac{\alpha N_{it}}{\beta} * \frac{w_i}{c} \right)^{\alpha} N_{it}^{\beta} \tag{2}$$

By taking logarithms and rearranging, we obtain the base labour demand equation as follows:

$$\ln N_{it} = \phi_0 + \phi_1 \ln(w_i / c) + \phi_2 \ln Q_{it} + \varepsilon_{it} \tag{3}$$

where $\phi_0 = -(\gamma \ln A + \alpha \ln \alpha - \alpha \ln \beta)/(\alpha + \beta)$; $\phi_1 = -\alpha/(\alpha + \beta)$; $\phi_2 = 1/(\alpha + \beta)$; ε_{it} is a disturbance term which varies across regions and time and possesses the usual properties.

Here we extend the Greenaway-Milner-Wright model by allowing exports to influence employment in two ways. First, when exports serve as a vent-for-surplus, export expansion may create increased job opportunities. As output includes both exports and domestic sales we decompose output (Q) into real exports (X) and net real output (DQ). Equation (3) is rewritten as:

$$\ln N_{it} = \phi_0 + \phi_1 \ln(w_i / c) + \phi_2 \ln DQ_{it} + \phi_3 \ln X_{it} + \mu_0 T + \varepsilon_{it} \tag{4}$$

Second, increased openness through export expansion may promote technical efficiency of the production process due to pressures of competition in the international markets and knowledge spillovers from foreign contacts. Therefore, parameter A may be hypothesised to vary with time in the following manner:

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$$A_{it} = e^{\delta_0 T_i} XS_{it}^{\delta_i}, \qquad \delta_0, \delta_1 > 0 \qquad (5)$$

where T is time trend, XS is export penetration index measured by export-output ratio. Thus the labour demand equation when exports are modelled to impact on efficiency is of the form:

$$\ln N_{it} = \phi_0 + \phi_1 \ln(w_i / c) + \phi_2 \ln Q_{it} + \mu_1 \ln XS_{it} + \mu_0 T + \varepsilon_{it} \qquad (6)$$

If there is export-induced efficiency improvement in the use of labour, the sign of the estimated coefficient of the XS variable will be negative. And a positive sign on the coefficient of the XS variable suggests that exports have little impact on labour efficiency. Admittedly, the XS variable might be positively correlated with the output variable (Q) according to the export-led growth hypothesis. However, given the mixed empirical evidence on the export-growth relationship in the extant literature, we can assume that the collinearity between XS and Q variables tends to be weak.

To capture the dynamics of employment adjustment in the labour market, a lagged employment variable is introduced into the employment function. A distributed lag structure for other independent variables is also introduced in the employment function to capture the evolution of employment following a change in explanatory variables. Thus, the two employment equations, equations (4) and (6) are set out in the following form[7]:

$$\ln N_{it} = \phi_0 + \sum_j \phi_{1j} \ln w_{i,t-j} + \sum_j \phi_{2j} \ln DQ_{it-j} + \sum_j \phi_{3j} \ln X_{it-j} + \sum_j \phi_{4j} \ln N_{i,t-j} + \mu_0 T + \varepsilon_{it} \qquad (7)$$

$$\ln N_{it} = \phi_0 + \sum_j \phi_{1j} \ln w_{i,t-j} + \sum_j \phi_{2j} \ln Q_{it-j} + \sum_j \phi_{3j} \ln XS_{it-j} + \sum_j \phi_{4j} \ln N_{i,t-j} - \mu_0 T + \varepsilon_{it} \qquad (8)$$

Methodology and Data
Although the dynamic model provides a method for examining dynamic effects, it raises the problem of convergence of the estimators because the lagged dependent variable is correlated with the disturbance term (Greene, 1997). In order to overcome this problem an instrumental-variable (IV) approach has been proposed for estimation. For instance: the instrumental variables estimator proposed by Anderson and Hsiao (1981), GMM estimator proposed by Arellano and Bond (1991), and Corrected LSDV approach discussed by Kiviet (1995). Here, we use the two-step GMM method which incorporates all the feasible lags of the dependent variable and other explanatory variables as instruments for the

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endogenous variables. For purposes of estimation, the employment equations are differenced so as to eliminate the regional specific fixed effects. Because of the short time span of the current data set, one-year lags of the independent variables are included in the model for empirical estimation. Consistency of GMM estimator requires that no second order serial correlation exists. So test statistics for this, which are distributed normally under the null of no serial correlation, are calculated and presented in the tables. The validity of the instrument set is also examined using a Sargan test of over-identification restrictions.

Ideally we should examine the employment effects of exports in both the TVE and FIE sectors. However, because of lack of reliable data for FIEs, we estimate the above labour demand model with a panel data set for TVEs in 29 provinces of China over the time period 1987-1998. These data are collected from the 'China Township and Village Enterprises Yearbook' and the 'China agricultural statistical yearbook'. N is measured by number of employees, Q is measured by value-added deflated by consumer price index (CPI), X is measured by value of exports deflated by CPI, DQ is measured by real output net of real exports, XS is measured by export-output ratio.

Results
Table 3 reports the estimated results for both the base labour demand specification equation and the extended equation which includes exports as explanatory variable. The Sargan test for instrumental validity is satisfied and the test for second order correlation accepts the null hypothesis that there is no second order serial correlation. Column 1 presents the base specification estimation results. As expected, growth in wage rates has a negative effect on employment, and growth of output leads to increased labour demand. Both estimated coefficients are statistically significant at the 1 percent level. The estimated coefficient of the lagged dependent variable is negative indicating that fast growth in one year reduces the growth potential for the succeeding year.

Column 2 reports the estimated results of the extended model in which real exports volume is included as part of output (equation 7). The signs and significance of wage and output coefficients are consistent with those of the base specification equation, indicating the robustness of the specification. The impact of exports on employment is positive. The estimated coefficient of export volume variable is positive and significant at 1 percent level. A one percent increase in export volume increases employment by 0.10 percent. The estimated coefficient of the lagged export volume variable is positive and

Table 3: Employment equations for TVEs (1987-1999)

Independent variables	Dependent variable: ΔLN_{it}		
	1	2	3
$\Delta LN_{i,t-1}$	-0.071***	-0.053***	-0.100***
	(0.000)	(0.000)	(0.001)
ΔLW_{it}	-0.464***	-0.471***	-0.450***
	(0.000)	(0.000)	(0.000)
$\Delta LW_{i,t-1}$	0.036***	0.043***	0.001*
	(0.000)	(0.000)	(0.987)
ΔLQ_{it}	0.244***		0.316***
	(0.000)		(0.000)
$\Delta LQ_{i,t-1}$	-0.099***		-0.093***
	(0.000)		(0.000)
ΔLDQ_{it}		0.221***	
		(0.000)	
$\Delta LDQ_{i,t-1}$		-0.099***	
		(0.000)	
ΔLX_{it}		0.102***	
		(0.065)	
$\Delta LX_{i,t-1}$		0.014*	
		(0.077)	
ΔLXS_{it}			0.060***
			(0.005)
$\Delta LXS_{i,t-1}$			0.017***
			(0.001)
Estimation method	Gmm2	Gmm2	Gmm2
Time dummies	yes	yes	yes
Two-step Sargan Test	27.47 (54)	27.54 (54)	23.67 (54)
2nd order serial correlation	0.222	0.203	0.122
Number of observations	290	290	290

Note: *** Significant at the 1 percent level.
  ** Significant at the 5 percent level.
  * Significant at the 10 percent level.
  P-values are in parentheses.

statistically significant as well. This fact indicates that increases in exports provide a not inconsiderable demand for China's surplus labour. Given the total number of employees of 128.2 million for the year 2000 in the township and village enterprises, a 1 percent increase in total exports will create about 128,000 job opportunities in this sector. During the 1999 to 2003 period, China's exports grew at 22.9 percent per year on average. For a country like China who is facing heavy employment pressure, this means about 3 million job opportunities has been generated every year in the TVE sector by its fast export growth.

Column 3 presents the estimation results of equation (8) that includes export penetration ratio as an independent variable affecting employment through efficiency changes. Here again the signs and significance of wage and output variables are consistent with those of the base specification equation indicating the robustness of the specification. The estimated coefficient of export-penetration variable is positive and significant at the 1 percent level. This fact suggests that export orientation does not induce increased efficiency in the use of labour when surplus labour is drawn from the informal sector to the export sector. Increased export-orientation in the case of China creates increased employment opportunities because most of China's export products are labour-intensive. In sum, results from these equations suggest that exports in China, which are mainly labour-intensive, are basically a vent for its surplus labour.

VI. Conclusions

This paper has investigated the 'vent-for-surplus' effect of exports on growth and employment in China. For several reasons such as overinvestment in the SOE sector, stagnant consumption growth, uneven income distribution and structural distortions, there was a substantial surplus productive capacity in China in the years following the reforms. Exports appear to have provided an effective demand for this surplus capacity. The export-orientation of FDI and township and village enterprises (TVEs) appears to have successfully utilised the surplus labour, created job opportunities and contributed to employment growth and industrialisation in China. In other words, exports assisted by FDI and TVEs provide an outlet for China's surplus labour.

Apart from providing an outlet for surplus productive capacity and labour, export expansion in labour-intensive manufacturing industries also promoted growth of industrial output and transfer of large volumes of surplus labour from the agricultural sector to the non-agricultural sector[8]. All this accelerated the process of industrialisation and urbanisation in the Chinese economy[9]. It is though likely that while exports growth promoted employment, it may not have enhanced the productivity of China's industrial sector. These conclusions are broadly in line with Myint's interpretation of the vent for surplus thesis propounded by Adam Smith.

Notes

[1] Economic Evening Paper, Nov. 29, 1994, cited in Fan, G. et al. (1998).

[2] Source: 1998 data: World Development Indicator, World Bank. 1980 data: World Income Inequality Database, United Nations. Available on http//www.worldbank.org and http//www.undg.org. In 2001, the Gini index for China even rose to as high as 45.8.

[3] People's Daily, Overseas Edition, 11/03/1996.

[4] Fu and Balasubramanyam (2003) discuss TVEs and its orientation to exports and FDI in detail.

[5] Estimated from China Statistical Yearbook, China Township and Village Enterprises Statistical Yearbook and China Foreign Economic Statistical Yearbook, 1999.

[6] Many TVEs are foreign-funded. So there is an overlap of the TVE and FIE data. Exports of TVEs and FIEs totally accounted for 70 percent of China's exports. Data source: the Third National Industrial Census of P.R.China, 1995.

[7] Following Greenaway et al. (1999) and Milner and Wright (1998), variation of the user cost of capital (c) is captured by time dummies in estimation as by assuming perfect capital markets, it will only vary over time.

[8] The proportion of urban population in total population increased from 18 percent in 1978 to 36 percent in 2000.

[9] This transfer is reflected in the correlation between export growth and the degree of urbanisation. Regressing the share of urban population in total population on export growth, the estimation results shows that export expansion is positively correlated with urbanisation in China for the time period 1978-1999, and the estimated coefficient export variable is statistically significant. A one percent increase in export-GDP ratio raises the share of urban population in total population by 0.345 percent.

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