

Impact of Local Determinants on the Evolution of Township-Village Enterprises in China's Transitional Economy

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The emergence of township-village enterprises (TVEs) is an unique phenomenon in the process of China's economic transition. This paper empirically examines the influence of local determinants on the evolution of TVEs in Jiangsu, Henan, and Shaanxi provinces, considering such factors as agricultural surplus labor, prefectural government expenditure, and potential for market extension. Pooled cross-section and time-series data at the prefecture level for the period 1989-1993 are employed. An error components technique is used for empirical estimation. The empirical results show agricultural surplus labor has had an adverse effect in Shaanxi province. Prefectural government expenditure and potential for market extension also exert positive effects on TVEs evolution in three provinces. The evolution of TVEs reveals such institutional changes toward allocating resources more efficiently. As the process of TVEs evolution continues, privatization will evolve spontaneously.

I. Introduction

China began its market-oriented economic reforms in 1979, and they have been gradually carried out in the rural areas. The decade of 1980s experienced remarkable institutional innovation in China. A profound and far-reaching institutional change has undergone in the Chinese countryside. The people's communes were dissolved and transformed into townships (xiang), and the brigades into villages (cun) in 1984. Commune and brigade enterprises (CBEs) were therefore renamed township-village enterprises (xiangzhen qiye, or TVEs)(Zhu and Jiang (1993)). Since then the TVEs growth rate has increased dramatically. During the economic retrenchment period (1989-1991), however, the Chinese government adopted austere monetary and fiscal policies, which forced many TVEs to shut down.

By 1994, there were 24.95 million TVEs covering the agriculture, industry, construction, transportation, commerce and food service sectors. TVEs employed 120.18 million workers and absorbed agricultural surplus labor in rural areas. Their gross output value was 4258.85 billion RMB (renminbi) and they provided substantial tax revenue and enterprises profit remittance for local governments (Statistical Yearbook of China (1995), 363-365).¹ The rapid growth of TVEs has also caused critical problems, namely, shortages of capital, raw materials, and energy; lack of agglomeration economies; ill-defined property rights; and devastation of China's natural

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1. To compare the growth and efficiency for state-owned enterprises (SOEs) and TVEs for the 1979-1991 period, the total factor productivity (TFP) index shows that growth of TFP for TVEs is three times faster than for SOEs (Weitzman and Xu (1994)).

resources and environment (He (1990), Xue (1993), p. 467).

The rapid growth of TVEs consists mainly of a large number of small- and medium-sized enterprises. Such enterprises are an institutional innovation in response to underlying environment in China's transitional economy. TVEs have diversified farmers' economic activities, reshaped rural communities, and changed rural culture. They have played a decisive role in China's rural development, and therefore, the evolution of TVEs requires further investigation.

The origin of TVEs can be traced back to the Great Leap Forward period (1958-1960) (Sigurdson (1977), pp. 10-12). Normative appeals were used to stimulate workers' efforts, workers were asked to sacrifice themselves. They were told they should work more and consume less to promote economic development (Eckstein (1975), p. 10). A large number of commune and brigade enterprises, the predecessors of TVEs, were used to develop labor-intensive local industry, which could absorb disguised unemployment and accelerate rural development. The growth of CBEs gained momentum in the beginning of the Great Leap Forward campaign. The gross output of CBEs was 2.2 billion RMB and 3.2 billion RMB for 1958 and 1960, respectively (Kuo (1993), p. 228).

Factors such as insufficient capital, inadequate facilities and technology, poor management, and lack of marketing skill prevented CBEs from making further progress (Chen and Galenson (1972), pp. 43-49). In 1961, when China changed its development course away from the Great Leap Forward, many CBEs were forced to close down. By 1965, the gross output of CBEs had fallen to 0.562 billion RMB (Kuo (1993), p. 228). During the beginning of the Cultural Revolution (1966-1976), CBEs were denounced as "tails of capitalism" (ziben zhuyi weiba). This strong ideological attack adversely affected the growth of CBEs, and they therefore suffered a substantial setback (Byrd and Lin (1990), p. 10).

The expansion of CBEs was resumed in the latter part of the Cultural Revolution (ARSSID (1977)). To speed up agricultural mechanization, the State Council called for an effort to promote the growth of CBEs in 1970. But it was not until 1978 that the Third Plenum of the Eleventh Central Committee of the Chinese Communist Party proclaimed concrete policies to promote the growth of CBEs. Since then a series of preferential policies and regulations have been made to encourage the growth of TVEs.

There are several stylized models of TVEs which have been widely lauded during the course of TVEs evolution, namely, the Sunan and Gengche models in Jiangxi province, the Wenzhou model in Zhejiang province, the Zhujiang and Dianbai models in Guangdong province, the Chenan model in Hubei province, the Minjuan model in Henan province, the Baoche model in Shaanxi, and the Changte model in Hunan province.²

TVEs can have a variety of ownership structures, including collective ownership, cooperative ownership, joint venture ownership, and private ownership.³ Because the initial investment of most TVEs comes from the capital accumulation of the community, with the exception of the private ownership structure illustrated by the Wenzhou model, collectively-owned enterprises are the core of TVEs growth models.

Successful rural development has promoted economic development and kept Chinese peasants

2. For deliberating discussion of the Wenchow model, see Liu (1992) and Parris (1993).

3. Due to the vagueness of ownership, the evolutionary nature of TVEs is not easy to be clear-cut (Woo (1994)).

away from the kind of abject poverty which has been the experience of many other LDCs during the process of economic development. The emergence of TVEs is a unique phenomenon of China's transitional economy. The literature on TVEs, such as the study of Byrd and Lin (1990), examine the genesis, institutional structure, problems, and their future prospects of TVEs. Nee and Young (1991) find that bureaucratic mobilization is a significant negative determinant of peasant entrepreneurship. Weitzman and Xu (1994) argue that TVEs are vaguely defined cooperatives, and that the Chinese cultural heritage, with its spirit of cooperation and altruism, has contributed to the extraordinary success of TVEs development. On the other hand, Naughton (1994) claims that because property rights in TVEs are clearly specified, TVEs have effective incentive structures and reasonably hard budget constraints. Furthermore, Chang and Wang (1994) point out that TVEs are controlled by the township-village government and the residual benefits of the TVEs are therefore shared by the local citizens and the community government.

The aim of this paper is to utilize the data available at the prefectural level, and get a fresh perspective on how TVEs evolution is influenced by local determinants, considering such factors as agricultural surplus labor, prefectural government expenditure, and potential for market extension. Jiangsu province of the eastern region, Henan province of the middle region, and Shaanxi province of the western region are chosen to reflect the regional variation of TVEs growth. In 1991, the growth of TVEs in Jiangsu, Henan, and Shaanxi provinces ranked 4th, 13th, and 16th in China, respectively (Zhang (1992)).

Pooled cross-section (prefecture) and time-series data are employed; the period considered is 1989-1993. An error components technique is also used for empirical estimation. The remainder of this paper proceeds as follows. How local determinants shape the evolution of TVEs is discussed in Section II. Section III presents an empirical assessment. The final section summarizes the findings with a few additional remarks.

II. Local Determinants Affect the Evolution of TVEs

Because China has a great deal of regional variation, the relationship between local determinants and TVEs evolution is obviously very close. To identify such relation, a multiple regression model based on disequilibrium adjustment is used. According to this disequilibrium adjustment or level model (Gerking and Morgan (1991), Greenwood (1975)), the growth rates of TVEs are explained by levels of independent variables at the beginning of the period. These are assumed to capture differentials in the profitability of TVEs between locals; differentials in the profitability of TVEs then generate various rates of TVEs growth between locales.

To estimate the local determinants of TVEs growth, a model is composed by reviewing the literature and selecting those independent variables that seem most appropriate to the TVEs growth. Due to the paucity of data, only three independent variables have been included in the model for empirical testing. These variables are agricultural surplus labor, local government expenditure, and potential for market extension, all of which describe local characteristics with support in the literature. Each variable is discussed in turn as follows.⁴

4. Due to data limitations, it is difficult to create appropriate measures for local entrepreneurship and local infrastructure, and for taxation policy variables, such as tax rebates or holidays. Hence, these variables are not included for empirical

estimation.

1. Agricultural Surplus Labor

Most arable land is already under cultivation in China. Per capita arable land was 1.3 mu (1 mu = 0.0667 hectare) in 1987, and this will further decline to 1 mu by 2010 (Xue (1993), p. 467). Due to the law of diminishing productivity, further increases in labor supply in rural areas are conducive to little in terms of additional agricultural output.

During the 1949-1978 period, rural to urban migration was under stringent policy control. Since 1949, a strict household registration system (hukou zhidu) system has been imposed, under which residents in China are grouped into agricultural households and nonagricultural households. The housing, work points, and rationing systems (peijizhi) impeded the migration of surplus of labor from rural areas to urban areas.

In 1956, 1957, 1961, and 1966, the Chinese government strictly enforced the household registration and rationing system to force rural migrants back to the rural areas (Eckstein (1977), p. 282). Due to China's huge and increasing population and agricultural mechanization in rural areas, China's agricultural sector has immense potential surplus labor, and will release 0.317 billion surplus workers by 2000 (Development Research Center (1994), p. 1053). Since the beginning of economic reforms, farmers have been encouraged to look for non-agricultural employment while remaining in their home township or village.

In spite of household registration restrictions, farmers' migration from agriculture to nonagricultural industries and from rural areas to towns or medium and large cities has been flourishing since 1979 (Wu and Xu (1990)).⁵ TVEs therefore enjoy greater access to the local labor market than the state-owned enterprises. The curtailment of agricultural surplus labor depends mainly on the absorptive capacity of TVEs. Hence, the availability of cheap local labor gives TVEs monopsony power.⁶

Because labor costs are a principal determinant of TVEs growth, the enormous amount of agricultural surplus labor ensures lower labor cost, thus agricultural surplus labor is positively related to the growth of TVEs (Fei and Ranis (1964), Lewis (1955)).

2. Local Government Expenditure

Since 1979, China's centralized public finance system has undergone a dramatic change, and has been decentralized. A contract system of revenue and expenditure (caizheng shouzhi baogan) was introduced in 1980. Separation of tax from profit (shuili fenliu) and separation of the central and provincial tax systems (fenshui zhi) were also implemented in the 1990s. The current fiscal system includes four levels: central, provincial, county, and township.

The local government (county and township level) face greater budget constraints than do the higher levels of government. Lower levels of government can not run deficit financing and do not have the right to levy new tax. But local government can keep their extra revenue and their savings on expenditure. TVEs generate tax revenues and remit enterprise profit that provide

5. The phenomenon of a floating population (rural migrants) has become prevalent in big cities since the early 1980s (Chan (1994)).

6. Because local administrations do not have enough influence on local labor markets, labor markets are emerging in the Chinese countryside (Parish, Zhe, and Li (1995)).

funds to run the local government and improve social welfare for local citizens (Su and Zhu (1993)). Thus, the fact that TVEs' growth contributes to local government revenues is quite significant.

Local governments have supplied initial investment funds, acquired land and buildings, shared the risk, appointed managers and allocated workers, and served as supervisory bodies to encourage the development of TVEs (Chang and Wang (1994), Song and Du (1990)). Numerous categories of local government expenditure such as local investment in basic construction; working capital and funds for the technical improvement or new-product experiments of locally controlled enterprises; the financing of local departments of industry, transportation and commerce can all benefit the growth of TVEs (Zhuang (1987)).

Higher local government expenditure levels generally are expected to provide services which are productive for TVEs growth, and they can lower TVEs operating costs, which is conducive to TVEs growth. Then, the sign for local government expenditure is therefore expected to be positive (Bartik (1985), Fox and Murray (1991)).

3. Potential for Market Extension

China has tried to increase efficiency in agriculture by instituting the household responsibility system (*chengbao zerenchi*) and reviving the household as the unit of production and accounting.⁷ By the end of 1983, nearly all of the households in China's rural areas had adopted this system (Lin (1992)). Recently, land tenure is contracted to farmers for as long as 30 years, instead of just 15 years (Kung (1995)). Farmers who have fulfilled their government procurement quota obligations can sell the surplus on the market, so farmers benefit directly from productive use of the land and have become residual claimants. Their incentives to work are improved and agricultural output has increased.

Significantly increasing procurement prices for agricultural products have also increased farmers' income.⁸ Accordingly, farmers' demand for goods in local markets has been rising. As economic reforms continue, TVEs face hard budget constraints and a highly competitive market environment. Because manufacturing activity is low in relation to demand in rural communities, TVEs can extend their market share by taking advantage of local gaps in demand and supply.

According to the supply/demand ration hypothesis (Norton (1986)), the potential for market extension is the ratio of two local gravity measures, that is, the ratio of local personal income to the labor force employed by an industry sector according to its geographical location. Local personal income measures local demand, and employment of industry sector measures local supply. The variable representing potential for market extension is expected to be related positively to TVEs growth (Plaut and Pluta (1983)).

7. The household responsibility system was worked out spontaneously in response to the underlying changing economic environment (Lin (1988)).

8. A major price adjustment occurred in 1979 when China made dramatic adjustment of agricultural procurement prices. The average procurement price increased by about 25% for grains, 40% for oilseeds, 17% for cotton, and 37% for pork products. In 1984, China enlarged the scope of private activities in procurement, transport, and marketing of agricultural products (Wiens (1987)). Under such a mixed system, state prices and quotas cannot entirely dominate production and consumption (Sicular (1988)).

The empirical estimating equation is as follows.

$$GR_{ij} = a_0 + a_1 ASL_{ij} + a_2 LGE_{ij} + a_3 PFME_{ij} + \varepsilon_{ij} \quad (1)$$

$$a_1, a_2, a_3 > 0$$

where GR is the growth rate of TVEs gross revenue in each prefecture; ASL stands for agricultural surplus labor and is measured by total rural labor force minus labor force employed in agriculture, forestry, fishing, and animal husbandry in each prefecture. LGE is prefectural government expenditure, PFME is the potential for market extension and is measured by the ratio of prefectural personal income to labor force employed by the industry sector in each prefecture and ε is the error term. For each variable, the subscript $i = 1, 2, 3, \dots$ for cross-section data, and $j = 1, 2, 3, \dots$, for time-series data. The definition and expected impact of all independent variables are summarized in Table 1.

Table 1 Description of Independent Variable

Independent Variable	Definition	Expected Impact on TVEs
ASL	Agricultural surplus labor is measured by total rural labor force minus labor force employed in agriculture, forestry, fishing, and animal husbandry in each prefecture	+
LGE	Prefectural government expenditure	+
PFME	The potential for market extension is measured by the ratio of prefectural personal income to labor force employed by the industry sector in each prefecture	+

III. An Empirical Assessment

A data set containing information about the prefectural economy for Jiangsu, Henan, and Shaanxi provinces is required for estimating the model. The difficulty of empirically analyzing the local determinants affecting the growth of TVEs mainly results from problems of obtaining appropriate data. During recent years, the availability of new quantitative data has made it possible to conduct such empirical testing on a limited scale. Nevertheless, it is impossible to take all provinces into account.

A pooled cross-section and time-series data at the prefectural level for Jiangsu, Henan, and Shaanxi provinces for the years 1989 through 1993 are the basis of this empirical assessment. Data at the prefectural level are adopted from various issues of the Statistical Yearbook of Jiangsu for 1989-1994, the Statistical Yearbook of Henan for 1989-1994, and the Statistical Yearbook of Shaanxi for 1989-1994.

Jiangsu province is in the eastern region. It has a developed TVEs sector, including the 11 prefectures of Nanjing, Wuxi, Xuzhou, Chanzhou, Sunzhou, Nandong, Lianyungan, Huaiyang, Yanceng, Yangzhou, and Chengjiang. Henan province is in the middle region, with a developing

TVEs sector in its 12 prefectures of Chengzhou, Kaifeng, Pindensan, Anyang, Hebi, Xixiang, Jiaochou, Puyang, Xuxhang, Leihe, and Sanmenjia. Shaanxi province in the western region has a developing TVEs sector incorporating the 10 prefectures of Xian, Tongchuan, Baoji, Xuanyang, Weinan, Hanzong, Ankang, Shangluo, Yuanan, and Yulin.

The Da Silva test of error components technique is used to estimate the TVEs growth response to the various independent variables (Drummond and Gallant (1992)).⁹

Careful attention was paid to detecting model specification error and multicollinearity among independent variables. The Breusch and Pagan (1980) test was used to check for model specification error. The computed values of LM (Lagrange Multiplier) for model specification are 0.044, 0.0085, and 0.445 for Jiangsu, Henan, and Shaanxi provinces, respectively. These are less than the 1 percent significance level of 3.84 for a chi-square distribution with one degrees of freedom, and therefore there is no evidence of model specification error.

Multicollinearity could possibly affect the efficiency of the parameter estimates. Based on an analysis of the simple correlation among the independent variables, the correlation coefficients between agricultural surplus labor and prefectural government expenditure are -0.3662, -0.5538, -0.5287. The correlation coefficients between agricultural surplus labor and potential for market extension are 0.1019, 0.3424, 0.3778. Those between prefectural government expenditure and potential for market extension are 0.2369, 0.3537, -0.1360 for Jiangsu, Henan, and Shaanxi provinces, respectively. The correlation coefficients indicate no multicollinearity errors among independent variables.

The results of the Da Silva test of error components estimation are presented in Table 2.

Table 2 Estimates of the Effects of Local Determinants on TVEs 1989-1993

Independent Variable	Jiangsu Province	Henan Province	Shaanxi Province
Intercept	-7.481 (0.594)	-11.260 (1.181)	97.633 (1.666)
ASL	-0.035 (0.591)	-0.022 (0.144)	-1.824 (9.097)**
LGE	2.589 (2.509)*	4.160 (3.061)**	3.044 (4.757)**
PFME	0.406 (3.834)**	0.380 (3.647)**	0.152 (13.697)**
Breusch and Pagan Test Lagrange Multiplier Statistic	0.044	0.0085	0.445

Notes: t-statistics in absolute values are in parentheses.

* indicates significance at the 5% level.

** indicates significance at the 1% level.

A comparison of the empirical results of the test using error components technique reported in Table 2 reveals several interesting findings. The sign for agricultural surplus labor is negative in the three provinces, but is statistically significant at the 1 percent level only in Shaanxi province. The statistical evidence indicate that agriculturally well-developed provinces such as Jiangsu and

9. The Da Silva test is used for estimating the mixed error component moving average error process which estimates the regression parameters using a two-step GLS-type estimator.

Henan cannot increase their agricultural surplus and the price of agricultural products is rising much more slowly than that of agricultural input, such as farm machinery, chemical fertilizers, and insecticides. Farmers' incomes are further deteriorating, and capital accumulation from agricultural surplus is constrained. This impedes the growth of TVEs. Shaanxi province is an agriculturally less-developed province, that results in higher surplus labor and insufficient agricultural surplus, which may further restrain the accumulation of capital for the development of TVEs. Consequently higher agricultural surplus labor would deter the growth of TVEs, so the negative impact on TVEs growth is significant.

Of particular interest are the results for local government expenditure and potential for market extension. In recent years, the decentralization of fiscal control has strengthened the power of local government. The relationship between local government and TVEs is like that of father and son (Song (1990), p. 396). The sign on the local government expenditure is consistent with prior expectation: local government expenditure promotes TVEs growth. The expenditures have a positive, statistically significant effect on TVEs growth in three provinces. The empirical results are consistent with the findings of Chang and Wang (1994) as well.

Although the efficiency of local government expenditures cannot be evaluated in this estimation, the expenditures can effect TVEs growth according to the desires of local authorities. As such processes continue, local governments may in turn become a leviathan because local authorities intervene in all aspects of residents' activities.¹⁰

The sign of potential for market extension is statistically significant at the 1 percent level and exerts a positive effect on all three provinces. As economic reforms keep on and resources become more easily available through the market, TVEs compete not only with each other but also with stated-owned enterprises. The critical function of competitive markets is to encourage entrepreneurs.

It is particularly noteworthy that rural entrepreneurs spontaneously emerge from TVEs growth. They acquire information and expertise in forecasting market demand, and moreover, bring new products to serve that need. Rural entrepreneurs through the process of discovery have established a new mechanism and are likely to play a vital role in achieving spontaneous order in the Chinese transition economy.

IV. Concluding Remarks

The present paper explored the issue of local determinants affecting TVEs growth, which is of increasing importance for the Chinese transition economy. TVEs are likely to become much more market-oriented in their behavior, which may weaken the role of central planning; such a process is likely to continue and there may be no "fatal concert" in the future (Hayek (1989)).

The resiliency of the market and the spontaneous emergence of thousands of TVEs and entrepreneurs across rural China are initiated from below. Innovation and adaptability are the crucial ingredients for TVEs successful growth. It is interesting to note the empirical differences that appear in local determinants affecting TVEs growth. First, the agricultural surplus of labor has a negative impact on TVEs growth in agriculturally less-developed Shaanxi province.

10. The expansion of TVEs has caused the rising trend of income inequality in rural areas (Rozelle (1994)).

Second, prefectural government expenditure and potential for market extension both have a positive impact on TVEs growth in all three provinces.

Recently, increases in farmers' income have lagged far behind inflation so that agricultural surplus cannot provide sufficient capital accumulation for TVEs growth. Additionally, some TVEs in well-developed areas have been prematurely introducing capital-intensive technology (Enos (1984), Jiang and Gao (1994))¹¹ which can create more rural unemployment and exacerbate the classic development problem of moving an agricultural surplus of labor to industries.

Indeed, with fiscal reform transferring TVEs profit and taxes to local government revenue, local government has substantial allocative power and has incentive to provide initial capital endowment and investment-incentive packages to promote the growth of TVEs. However, the adverse effect of barriers to internal trade across provincial and interprovincial boundaries such as taxes, road blocks, licensing requirements, and quotas, may be substantial, generating a particular phenomenon known as "economic warlordism" (Wong (1985, 1987), Zhang (1993)).

In order to enter the World Trade Organization (WTO), China has been asked to further open its domestic market, so TVEs will face stringent competition in the near future. The institutional constraint of local monolithic governments intervening in TVEs has prevented market order from emerging. Institutional changes toward a clear-cut property rights system are necessary for emergence of spontaneous market order. Under such system TVEs may become truly responsible for their own production, supply, and marketing, and can operate efficiently.

The evolution of TVEs in the 1990s has revealed such institutional changes toward allocating resources more efficiently. TVEs evolved into joint-stock township-village companies (JSTVCs) in well-developed provinces such as Guangdong, Shandong, and Zhejiang in the middle of the 1980s, and have flourished since then. In 1992, based on a survey of 75 counties, there are 25,480 JSTVCs in rural areas (Study Group (1993)). Unlike TVEs with their vague cooperative property rights, JSTVCs are the hybridization of cooperatives and companies. JSTVCs are owned by the shareholders and have clear property rights.

So far China is not establishing relevant legal rights to protect the private property rights of JSTVCs. Although such institutional arrangements will take many years to establish, there is no reason to speculate that the TVEs evolution is about to come to an end. As the evolution of organization forms continues, privatization will evolve spontaneously in the transforming Chinese economy.

11. Employment security in the TVEs is insufficient, therefore income from nonagricultural activities fluctuates widely (Wang (1995)).

References

- American Rural Small-Scale Industry Delegation (ARSSID), *Rural Small-Scale Industry in the People's Republic of China*, University of California Press, Berkeley, 1977.
- Bartik, T.J., "Business Location Decisions in the United States: Estimates of the Effects of Unionization, Taxes, and Other Characteristics of States," *Journal of Business Statistics* 3, January 1985, 14-22.
- Breusch, T.S., and A.R. Pagan, "The Lagrange Multiplier Test and Its Applications to Model Specification in Econometrics," *Review of Economic Studies* 47, January 1980, 239-253.
- Byrd, W., and Q. Lin, *China's Rural Industry: Structure, Development and Reform*, Oxford University Press, New York, 1990.
- Chan, K.W., "Urbanization and Rural-Urban Migration in China Since 1982," *Modern China* 20, July 1994, 243-281.
- Chang, C., and Y. Wang, "The Nature of the Township-Village Enterprise," *Journal of Comparative Economics* 19, December 1994, 434-452.
- Chen, N.R., and W. Galenson, *The Chinese Economy under Communism*, Aldine Publishing Company, Chicago, 1972.
- Development Research Center, *Economic Development, Reform and Policy*, Shehui Koxue Wenxian Press, Beijing, 1994.
- Drummond, D.J., and R.A. Gallant, *The TSCSREG Procedure*, SAS Institute Inc., NC, 1992.
- Eckstein, A., *China's Economic Development: The Interplay of Scarcity and Ideology*, University of Michigan Press, Ann Arbor, 1975.
- _____, *China's Economic Revolution*, Cambridge University Press, Cambridge, 1977.
- Enos, J.L., "Commune and Brigade-Run Industries in Rural China: Some Recent Observation," in *Institutional Reform and Economic Development in the Chinese Countryside*, edited by Griffin, K., M.E. Sharpe, Inc., New York, 1984, 223-252.
- Fei, C.H., and G. Ranis, *Development of the Labor Surplus Economy: Theory and Policy*, III, Richard Irwin, 1964.
- Fox, W.F., and M.N. Murray, "The Effects of Local Government Public Policies on the Location of Business Activity," in *Industry Location and Public Policy*, edited by Herzong, H.W., and A.M. Schlottmann, University of Tennessee Press, Knoxville, 1991, 97-119.
- Gerking, S., and S. Morgan, "Measuring Effects of Industrial Location and State Economic Development Policy: A Survey," in *Industry Location and Public Policy*, edited by Herzong, H.W., and A.M. Schlottmann, University of Tennessee Press, Knoxville, 1991, 31-56.
- Greenwood, M.J., "Research on Internal Migration in the United States: A Survey," *Journal of Economic Literature* 13, June 1975, 397-433.
- Hayek, F.A., *The Fatal Conceit: The Errors of Socialism*, Vol. 1 of the Collected Works, edited by Hayek, F.A., and W.W. Bartley III, University of Chicago Press, Chicago, 1989.
- He, J., "Development Issues and Policy Choices," in *China's Rural Industry*, edited by Byrd, W.A., and Q. Lin, Oxford University Press, New York, 1990, 112-127.
- Jiang, L., and X. Gao, "The Shift of Development Strategy of Rural Industries," *Jingji Yanjiu, Economic Research* 4, April 1994, 23-28.

- Kung, J.K., "Equal Entitlement versus Tenure Security under a Regime of Collective Property Rights: Peasants' Preference for Institutions in Post-Reform Chinese Agriculture," *Journal of Comparative Economics* 21, August 1995, 82-111.
- Kuo, S., *Structural Change of Villages and Agriculture in China*, Caizheng Jingji Press, Beijing, 1993.
- Lewis, W.A., *The Theory of Economic Growth*, Homewood, Ill., Richard D. Irwin, 1955.
- Lin, J.Y., "The Household Responsibility System in China's Agricultural Reform: A Theoretical and Empirical Study," *Economic Development and Cultural Change* 36, April 1988, S199-S224.
- _____, "Rural Reforms and Agricultural Growth in China," *American Economic Review* 82, March 1992, 34-51.
- Liu, Y.L., "Reform from Below: The Private Economy and Local Political in the Rural Industrializations of Wenzhou," *China Quarterly* 130, June 1992, 293-316.
- Naughton, B., "Chinese Institutional Innovation and Privatization from Below," *American Economic Review* 84, May 1994, 266-270.
- Nee, V., and F. Young, "Peasant Entrepreneurs in China's "Second Economy": An Institutional Analysis," *Economic Development and Cultural Change* 39, January 1991, 291-309.
- Norton, R.D., "Industrial Policy and American Renewal," *Journal of Economic Literature* 24, March 1986, 1-40.
- Parish, W.L., X. Zhe, and F. Li, "Nonfarm Work and Marketization of the Chinese Countryside," *China Quarterly* 143, September 1995, 697-730.
- Parris, K., "Local Initiative and National Reform: The Wenzhou Model of Development," *China Quarterly* 134, June 1993, 242-263.
- Plaut, T.R., and J.E. Pluta, "Business Climate, Taxes and Expenditures, and State Industrial Growth in the United States," *Southern Economic Journal* 50, July 1983, 99-119.
- Rozelle, S., "Rural Industrialization and Increasing Inequality: Emerging Patterns in China's Reforming Economy," *Journal of Comparative Economics* 19, December 1994, 362-391.
- Sicular, T., "Plan and Market in China's Agricultural Commerce," *Journal of Political Economy* 96, April 1988, 281-307.
- Sigurdson, J., *Rural Industrialization in China*, Harvard University Press, Cambridge, 1977.
- Song, L., "Convergence: A Comparison of Township-Run Firms and Local Stage Enterprises," in *China's Rural Industry: Structure, Development and Reform*, edited by Byrd, W., and Q. Lin, Oxford University Press, New York, 1990, 392-412.
- Song, L., and H. Du, "The Role of Township Government in Rural Industrialization," in *China's Rural Industry: Structure, Development and Reform*, edited by Byrd, W., and Q. Lin, Oxford University Press, New York, 1990, 342-357.
- State Statistical Bureau, *Statistical Yearbook of China*, Zhongguo Tongji Press, Beijing, 1994, 1995.
- Statistical Bureau of Henan, *Statistical Yearbook of Henan*, Zhongguo Tongji Press, Beijing, 1989-1994.
- Statistical Bureau of Jiangsu, *Statistical Yearbook of Jiangsu*, Zhongguo Tongji Press, Bijing, 1989-1991.

- Statistical Bureau of Shaanxi, *Statistical Yearbook of Shaanxi*, Zhongguo Tongji Press, Beijing, 1989-1994.
- Study Group, "An Analysis of Joint-Stock Organization in Rural Areas," *Nongye Jingji, Agricultural Economy* 7, 1993, 96-98.
- Su, T., and Zhu, G., "Analysis on Beyond-System Finance in Chinese Villages and Towns," *Jingji Yanjiu, Economic Research* 9, September 1993, 38-44.
- Wang, Y., "Permanent Income and Wealth Accumulation: A Cross-Sectional Study of Chinese Urban and Rural Households," *Economic Development and Cultural Change* 43, April 1995, 532-550.
- Weitzman, M.L., and G. Xu, "Chinese Township-Village Enterprises as Vaguely Defined Cooperatives," *Journal of Comparative Economics* 18, April 1994, 121-145.
- Wiens, T.R., "Issues in the Structural Reform of Chinese Agriculture," *Journal of Comparative Economics* 11, September 1987, 372-384.
- Wong, C., "Material Allocation and Decentralization: Impact of the Local Sector on Industrial Reform," in *The Political Economy of Reform in Post-Mao China*, edited by Perry, E.J., and C. Wong, Harvard University Press, Cambridge, 1985, 253-278.
- _____, "Between Plan and Market: The Role of the Local Sector in Post-Mao China," *Journal of Comparative Economics* 11, December 1987, 385-398.
- Woo, W.T., "The Art of Reforming Centrally Planned Economies: Comparing China, Poland, and Russia," *Journal of Comparative Economics* 18, June 1994, 276-308.
- Wu, C.T., and X. Xu, "Economic Reforms and Rural to Urban Migration," in *China's Spatial Economy*, edited by Lingstrand, G., and D.K. Forbes Oxford University Press, New York, 1990, 129-143.
- Xue, Y., *China's Public Finance, and Economic Theory*, Vol. 3, Jingji Kexue Press, Beijing, 1993.
- Zhang, J., "Some Issues on Propriety Right of Regional State-Owned Enterprises," *Jingji Yanjiu, Economic Research* 7, July 1993, 26-29.
- Zhang, Y., "An Evaluation of Township-Village Enterprises Growth," *Zhongguo Xiangzhen Qiye, China's Township-Village Enterprises* 6, 1992, 50-55.
- Zhu, L., and Jiang, Z., "From Brigade to Village Community: The Land Tenure System and Rural Development in China," *Cambridge Journal of Economics* 17, December 1993, 441-461.
- Zhuang, M., *Township-Village Government Expenditure, Taxation, and Finance*, Hunan Kexue Jixu Press, Hunan, 1987.