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Agglomeration and the Local State: The Tobacco Economy of Yunnan, China

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(Abstract)

This paper explores the interplay of local government action with historical contingency, innovation, and external economies in the world's largest tobacco agglomerate in Yunnan, China. Formed in a least industrialized province and promoted by local governments as their primary revenue bases, the agglomerate gains a head start from strategically timed institutional innovation; its further growth draws greatly on relational stability and knowledge spillovers among local producers. The intervening effects of local government action are exerted through financial aid, regulatory flexibility, and fiats. Implications for the study of regional economies are discussed.

Key words: regional economy, agglomeration, local government, tobacco, Yunnan, China

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1 Introduction

Agglomeration--the concentration of economic activities in related sectors in a geographical area--is a focal issue in economic geography. In recent research there has been a shift from macro-level analysis of the phenomenon to meso- and micro-level account of the concrete local processes in which agglomeration is initiated and sustained (Malmberg 1996). It is argued that fortuitous events may set in motion a cumulative process of sectoral clustering that feeds on the gains from interactions among interdependent local enterprises (Krugman 1991, 1995). The growth and sustainability of agglomeration economies, furthermore, are found to be closely related to locally based innovation (Porter 1990; Storper and Walker 1989) and various forms of external economies, such as transactional flexibility based on extensive local divisions of labor (Scott 1992; Storper 1990), knowledge and technological spillovers among local enterprises (Feldman and Florida 1994; Storper and Walker 1989), pooling of skilled labor and development of specialized inputs and services in local markets (David and Rosenbloom 1990; Krugman 1991).

An important issue that has not been adequately explored by these accounts is how the mechanisms identified above are affected by the actions of the local government, which may significantly facilitate or hinder spatial

concentration of economic activities (Dunford 1988; Johnston 1982, 1989). Moreover, the contexts in which these mechanisms are examined consist mainly of Western market economies. Much has yet to be said about agglomeration processes in developing economies, especially economies experiencing transitions toward market-oriented systems. This paper attempts to narrow these gaps by examining a local-government-driven agglomerate (cluster of closely related economic activities) in China, a former central planning economy where extensive market reforms have been under way since the late 1970s. Contrary to the conventional view of the communist state as a monolithic, anti-market entity, in China's reform era local governments have played a highly instrumental role in promoting marketized economic activities under their jurisdiction (Montinola et al. 1995; Shirk 1993). According to some recent works, the driving force of this change comes from fiscal decentralization (Oi 1992) and localization of control over public enterprises (Qian and Xu 1993; Walder 1995). The present account draws on these explanations and adds to them a spatial dimension by investigating why and how certain local governments advance their policy agendas through strategies that effectively promote agglomeration.

The backdrop against which I cast my analysis is the formation process of the world's largest tobacco agglomerate in Yunnan, one of China's poorest provinces. The provincial government has played a key role in promoting

tobacco cropping and manufacturing since the early 1980s when the national economy began to be decentralized and marketized. The initial choice by the provincial leadership to concentrate resources and policy support on a single line of products was prompted by a lack of comparative advantage in alternative local industries, a growth of inter-provincial competition for resources, and the market potential of a pre-existing, relatively robust tobacco production base. That move has led to concerted efforts by the provincial and sub-provincial governments to search for ways to create and expand locational competitive advantage for tobacco production, resulting in a significant upgrading of technology and product quality. Organizationally, an initially centralized structure of management and regulation has been adapted by local authorities to address their own policy agendas. It is also used to foster cooperation between local tobacco leave growers and cigarette manufacturers, contain competition in input markets, spread technological and institutional innovation among local tobacco producers, and promote sales of local products in national markets. These factors combine to provide a strong boost to Yunnan's once moderate-sized tobacco economy and contribute to an agglomeration of tobacco-related economic activities at the intra-provincial scale. Consequently, despite a lack of superior natural conditions and an initial technological disadvantage in cigarette manufacturing, the province has been able to gain from increasing returns on economies of scale in tobacco production and excel among several

major tobacco-producing regions of the nation within the span of a decade.

Although the drastic expansion of the tobacco sector has not offered an effective solution to many fundamental problems (e.g., inter- and intra-provincial economic disparities) faced by the province in economic development, it is illustrative of some important mechanisms at work in the spatial concentration of economic activities, which are the main concern of this paper. In examining the growth process of Yunnan's tobacco economy, I relate local government action to the three catalytic factors that have drawn considerable attention in the recent literature on agglomeration, namely, historical contingency, innovation, and external economies (Malmberg 1996). In so doing, I also seek to cast additional light on the ways in which the effects of these factors on agglomeration are played out. First, one reason that history matters for agglomeration is that the initial state of a local economy shapes the interest structures and frames of reference of the key players (in this case local government officials) and thereby influences their choice-making. The assessment of comparative advantage by local policy-makers, for example, has a direct bearing on their subsequent effort to create locational competitive advantage in selected sector(s). Second, the formation of an economic agglomerate may be boosted by what Schumpeter (1942) once called "entrepreneurial profit" for the technological and institutional innovation that takes place in the local economic space ahead of rival regions. The search and

set-up costs necessary for such innovation may be contained by resolute, strategically timed actions of the local government to pool resources and create regulatory flexibility for selected sector(s). Third, containment of negative externalities and spread of positive spillovers among local producers are critical to furthering and sustaining the process of agglomeration. Of particular importance in this regard are relational stability between local suppliers and producers, demonstration effect of locally based institutional innovation, and demand-enhancing effect from the technological core of the local agglomerate. On each of these aspects, decisions and actions of the local government may have an important intervening effect.

I start the account with an overview of the tobacco economy of Yunnan. This is followed by a discussion of the changes in the regulatory environment of the tobacco sector in the reform era. Then, I examine the active role played by Yunnan's local governments in promoting tobacco production, the conditions under which such a choice was made and advanced, and the way the tobacco economy has been spatially organized. In the final section, I summarize my findings and discuss their implications for the study of regional economies.

2 Yunnan's tobacco economy

Yunnan is located in southwestern China, bordering Myanmar (Burma), Laos, and Vietnam. It encompasses an area of 394,139 square kilometers (Yunnan

sheng tongji ju 1996, 7). In 1995 its population totalled 39.89 million, of which 33.18 percent (12.24 million) were ethnic minorities in 26 groups (Ibid., 5, 50, 71). Situated on the Yunnan-Guizhou Plateau, 84 percent of the province's land is classified as mountains, 10 percent as plateaus, and 6 percent as basins (Ibid., 6). While a large part of the province is in the tropical and sub-tropical zones, weather conditions vary among areas of different altitudes. The bulk of the province's tobacco production takes place in the low-land of seven prefectures in central and eastern Yunnan, where temperature and soil conditions are most suitable for tobacco growth (Gao 1991, 296). They include Kunming, Yuxi, Chuxiong, Zhaotong, Qujing, Honghe, and Dali. In 1995, these prefectures accounted for 58.4 percent of the acreage for flue-cured (as opposed to air- and sun-dried) tobacco, 93.2 percent of the output of flue-cured tobacco leaves, and 99.9 percent of the output value for manufactured tobacco products in Yunnan (Yunnan sheng tongji ju 1996, 304, 306, 353, 359).

Figure 1 about here

The growth of tobacco leaves in Yunnan began in 1914. That was followed by the establishment of the Asiatic Tobacco Co. in 1922 to produce cigarettes in the province. But tobacco production stopped in the late 1920s due to war and shortage in input supplies. It was not until the late 1930s that limited production was restarted under the sponsorship of the Kuomintang (KMT) provincial government (Wan 1993, 7). After the founding of the

People's Republic in 1949, tobacco production was placed under the regulation of the central planning system and expanded gradually. The province became a major supplier of tobacco leaves for cigarette manufacturers throughout the country while building up a medium-sized cigarette industry of its own. In 1978 Yunnan was the nation's third largest flue-cured tobacco producing province after Henan and Shandong, contributing 11.7 percent of the total output. But its output of cigarettes accounted for only 5.4 percent of the national output, ranking sixth after Henan (13.7 percent), Shandong (11.4 percent), Anhui (7.1 percent), Shanghai (7.0 percent), and Hubei (6.7 percent) (Gongjiao tongji si 1987, 159).

Table I about here

Since the late 1970s, however, tobacco production in Yunnan has grown at a significantly accelerated rate, both in terms of quantity and share in the national aggregate, as shown by the statistics in Table I. In 1988 and 1990 it surpassed Henan province in cigarette manufacturing and flue-cured tobacco production respectively to become the nation's leading tobacco-producing province (Guojia tongji ju 1989, 309; 1992, 363). Of the 13 premium brands of cigarettes certified by the central government tobacco authority, 9 are produced by Yunnan manufacturers, which sell more than three quarters of their output in national markets (Wan 1993, 5, 241). Some of these top brands, such as Hongtashan and Yunyan, are quite popular and have even fetched higher

prices in retail market than leading import brands like Marlboro and 555 (Wen 1994, 220). Their sales have gone so well that bogus products bearing these brands have been widely manufactured (FBIS, March 23 1995). In 1995, Yunnan's seven major tobacco-producing prefectures had 261,714 hectares of planted area for flue-cured tobacco, produced 708,949 tons of flue-cured tobacco leaves, and manufactured 6.8 million cartons (340 billion units) of cigarettes in their eight cigarette factories (Yunnan sheng tongji ju 1996, 304, 306, 353, 359). sheng tongji ju 1996, 332, 353). In addition, in these prefectures there were over 200 tobacco product distribution centers and over 1,000 enterprises catering to the tobacco sector (Wan 1993, 6), ranging from input suppliers for tobacco farming and processing (e.g., seeds, fertilizer, plastic film, and coal) to providers of equipment, intermediate inputs and specialized services for cigarette production (e.g., paper, filter tips, chemicals, plastics, printing, warehousing, and transport). The concentration of tobacco-related economic activities of such a magnitude in a geographical area of about 180,000 square kilometers of surface land (Ibid., 7-9) makes these prefectures the world's largest tobacco-producing region.¹ A distinct feature of this agglomeration economy is the vast rural and urban economic spaces spanned by the clustering of agricultural and industrial activities along a major product line.

The rapid growth of tobacco output in Yunnan has turned the tobacco sector into the most important source of local economic growth and government

revenue. From 1978 to 1995, Yunnan's gross domestic product (GDP) increased from 6.91 to 120 billion yuan, registering an average annual growth rate of 9.8 percent based on constant prices (FBIS, April 16 1996). A large part of such growth came from tobacco production, which contributed 7 percent of the province's GDP in 1979 and 30 percent in 1995 (Ibid.). In 1978, tobacco revenue (i.e., taxes and remitted profits combined) made up 25.15 percent of the province's total government revenue (Wan 1993, 293). In 1995, the figure rose to 80 percent (FBIS, August 5 1995). In addition, the tobacco sector has become the largest foreign currency earner in the province. In 1995, it exported flue-cured tobacco to 12 countries and regions, cigarettes to 7 countries and regions, and cut tobacco and related technology to 4 countries and regions, earning a total of 300 million US dollars (FBIS, January 5 1996).

3 Marketization of the tobacco industry under state monopoly

The extraordinary growth of Yunnan's tobacco economy since the late 1970s has taken place in a changing macro-economic environment. Starting from 1978, the national economy has been under reform (Perkins 1988, 1994; Naughton 1995). Enterprises have gained increasing autonomy in decision-making while their activities are moved out of the shadow of government plan and become more market-driven. On the other hand, the authority to regulate marketized economic activities has been significantly decentralized to local governments.

The tobacco industry has also experienced changes in these directions, but in a rather unique way.

Unlike most other economic sectors where entry by private and foreign capital has been allowed and even encouraged, the tobacco sector has been made a state monopoly since 1983 when the *Tobacco Monopoly Regulation* was enacted (which was upgraded as the *State Tobacco Monopoly Law* in 1991). Only public enterprises are allowed to produce cigarettes according to centrally imposed quotas. Tobacco leave farmers are required to be licensed, produce according to state quotas, and sell their output to state procurement stations. Wholesale of tobacco products can only be carried out by state sector distributors. Also, price control has been imposed on tobacco leaves and cigarettes. Such exclusion of private elements from the tobacco sector and wide-ranging government control over production and distribution, however, have not prevented market force from growing within the state sector. The authority of regulating tobacco production and distribution has been gradually delegated to local governments and, under the purview of local governments, tobacco producers have gained increasing freedom in decision-making and expanded their activities beyond the central plan.

The national regulatory authority of the tobacco sector is the State Tobacco Monopoly Bureau (STMB henceforth); its quota-setting and licensing functions are carried out through the China National Tobacco Corporation

(CNTC henceforth). At the provincial level, STMB and CNTC offices have been set up to enforce national tobacco regulations. These local offices and their subsidiaries are jointly controlled by the local (provincial, city, or county) governments concerned and the next higher level of STMB and CNTC. According to the original design of this hierarchy of regulatory authority, local tobacco agencies should be primarily directed by the centrally integrated command chain of STMB and CNTC (Editorial committee 1994). Since the mid 1980s, however, the decisions and actions of local tobacco authorities have been increasingly guided by local governments (Editorial committee 1994), which have predominant influence over the appointment of top officials at local tobacco agencies. The inability of the central authority to curb this trend toward decentralization is due in large part to the growing political dependence of central leaders on local governments for political support (Shirk 1993) and financial resources (Oi 1992). Local governments, on the other hand, have strong incentives to grant greater economic freedom to local public enterprises (including tobacco producers) that constitute the mainstay of the local tax revenue base, as further discussed below

An indication of the weakening of control by the national tobacco authority is the widespread production and distribution of output beyond government quotas, which take place under the sponsorship and protection of local governments in tobacco-producing areas (FBIS, September 10 1990,

September 25 1990, September 11 1991; Editorial committee 1994, 505-593). In 1992, for example, the national quota for the acreage of flue-cured tobacco was set to be 1.3 million hectares, but the reported acreage alone reached 1.6 hectares (Zhou 1993, 543). In Yunnan, the quota for the acreage of flue-cured tobacco in 1993 was 300,000 hectares, but the planted area reached 473,500 hectares (Wu 1994, 181). According to a top official of STMB, in the 1980s and early 1990s the output produced by the vast majority of cigarette manufacturers far exceeded their quotas (Editorial committee 1994, 565).

Concurrent with the weakening of the central regulatory authority over tobacco production quota is a gradual relaxation of government control over the pricing of tobacco products and their distribution. This began in the mid 1980s when many local governments adopted various production contracts with the cigarette manufacturers under their jurisdiction (Editorial committee 1994). Such contracts granted the enterprises certain degrees of freedom in pricing and sales for above-quota production as an incentive for them to increase output and taxable earnings. This practice led to a significant increase in tobacco revenue and was recognized by the central tobacco authority in 1988 when it relaxed the control over the prices and production of 13 premium brands of cigarettes (of which 9 were produced by Yunnan manufacturers). Producers of these brands were allowed to set the ex-factory prices for their products, to decide on the variety and grade of their products, to request (through local tobacco authorities)

additional output quotas, and to choose their distributors (FBIS, July 28 1988, August 8 1988). This was followed by a lifting of control over wholesale and retail prices of tobacco products in 1991 (Zhou 1993, 575). In 1992, the decontrol measures limitedly implemented in 1988 were extended to all tobacco product manufacturers (Mou 1994, 46). In 1993, the quota for cigarettes produced for export or border trade was abolished. In the same year, the first national wholesale market for tobacco was set up in Yunnan. In the meantime, there emerged 264 regional cigarette distribution centers, which were under the purview of various local governments but mostly unauthorized by the central tobacco authority (Editorial Committee 1994, 589-590).

The gradual marketization of cigarette production and distribution has had a ripple effect on the pricing and sales of tobacco leaves. With the expansion of cigarette manufacturers' output beyond government quotas, they need additional tobacco leaves, which are also subject to centrally imposed production quotas. Because of the higher prices offered by cigarette manufacturers, farmers increase their output to capture the gains. As a result, a market for above-quota tobacco leaves has emerged, competing with government procurement stations. To capture the gains in such market, many local procurement stations have adjusted their procurement prices for above-quota tobacco leaves to keep up with market demand (Ibid., 505-593).

The mutually reinforcing growth of above-quota production and relaxation

of control over price and sales have led to an expansion of market forces in the tobacco sector, resulting in an intensification of competition among tobacco producers (Mou 1994). During this process of marketization, whether a tobacco-producing locality prospers depends greatly on the extent to which the local government bends centrally imposed rules concerning tobacco production and distribution and on the resources that it allocates to the sector. What makes the tobacco economy of Yunnan extraordinary is the utmost commitment and support in these regards that it has received from the provincial and subprovincial governments since the early years of the reform.

4 Tobacco as the spearhead of Yunnan's economic growth

The decision to promote tobacco production in Yunnan was made at a meeting attended by 8 top provincial leaders in November 1982. At that meeting, the leaders studied the economic situation of the province and reached the consensus that flue-cured tobacco leaves and cigarettes should be developed as the province's "spearhead" products and given top priority in policy and resource support (Wan 1993, 5-6). Several factors are related to this rather unusual move to promote a single line of products.

The reform era of China has seen a shift in the locus of government policy from ideological indoctrination and political mobilization to economic development (Riskin 1991), which has led to a closer tie between local officials'

financial and career rewards and the economic growth under their jurisdiction (Walder 1995). Also, from the early 1980s to the mid 1990s, the flow of fiscal resources between different levels of government was governed by a fiscal contract (Oi 1992), which allowed local governments to keep certain portions of above-target revenue and granted them greater discretion in spending as an incentive to encourage them to increase revenue. In the meanwhile, inter-regional competition for resources has intensified as a result of marketization of economic activities (Shirk 1993; Montinola et al. 1995), making locational economic competitiveness a crucial factor affecting the revenue base of local governments and the financial and career rewards for local officials. These concurrent developments have combined to create push-and-pull forces that drive local officials to identify and promote currently or potentially competitive local economic sectors.

Tobacco is a sector where the central and local governments levy large sums of taxes, which amount to 8-10 percent of the total government revenue in China (Editorial Committee 1994, 552; FBIS, May 24 1995). In 1987, it surpassed the oil and petro-chemical industry to become the single largest source of total government revenue (Editorial Committee 1994, 508, 522). Among the major taxes on tobacco are agricultural tax on tobacco leave production, special agricultural product tax on air-dried and flue-cured tobacco, excise tax on cigarettes and cigars, value-added tax and enterprise income tax on tobacco

product manufacturing and distribution, and import duties on foreign cigarettes. Except for import duties which accrue exclusively to the central government, the other taxes are divided between different levels of government according to various revenue-sharing formulas (Xiong and Zhou 1992, 101-107). In addition, local governments also lay frequent and significant claims on the profits of the tobacco producers and distributors under their jurisdiction (Editorial committee 1994).

To see clearly why tobacco stood out as the choice for Yunnan's local leaders and why that choice has been effectively advanced, one also needs to look at the contexts in which the initial choice was made. Yunnan's natural conditions for growing and processing tobacco leaves are good but not necessarily superior to those of many other tobacco-growing provinces (Yan 1988). Technologically, until the early 1980s Yunnan's facilities for tobacco processing and cigarette manufacturing were much poorer than those of the then leading cigarette factories in Shanghai and Henan (Wan 1993; Zhou 1993, 517-518). What made the provincial leaders choose tobacco as the key sector to promote was not its national competitive advantage, which was subsequently created, but its comparative advantage relative to other local products.

Yunnan was one of the least industrialized provinces in the nation. One third of the local population were ethnic minorities, whose educational level was generally lower than the Han Chinese, posing a human resource constraint on

economic development. Despite the rich natural resources in the province, transportation links were underdeveloped on the rugged terrain. Under the pre-reform central planning system, the province was given low priority in resource allocation. As a result, the development of its infrastructural and industrial facilities lagged behind that of most other provinces. In 1978, Yunnan's gross industrial output only accounted for 1.3 percent of the national total, ranking 24th among 29 provinces and municipalities (Gongjiao tongji si 1987, 145). To identify areas of growth potential, local leaders needed to assess the relative strengths of different local economic sectors. Tobacco stood out as the apparent choice because of the lack of better alternatives (Wan 1993, 220). Unlike those in the then leading centers of tobacco production (e.g., Shanghai, Henan, and Shandong) where the significance of tobacco in their local economies was overshadowed by the greater magnitude of other industrial sectors, Yunnan's tobacco sector occupied a prominent place in the underdeveloped local economy. By the late 1970s, the province had established 5 cigarette factories. Tobacco earnings made up about one fourth of the province's government revenue (Wan 1993, 296). The opportunity cost of dispersing limited resources over various other sectors appeared to be higher than that of concentrating on tobacco (Ibid).

In order for this relatively more gainful local economic sector to be expanded and to compete nationally, funding for technological upgrading and institutional flexibility were needed. In the 1980s the provincial and

subprovincial governments allocated large amounts of financial resources in the tobacco sector, which were more than those in any other sector (Wan 1993, 27). From 1981 to 1987 the provincial government invested 748 million yuan and US\$ 119 million in foreign currency to upgrade, mainly through importation of Western equipment and facilities, the technology of five major cigarette factories to international standards of the 1970s and 1980s (Gao 1991, 558, 561). In the following decade, more than US\$ 800 million and 2.0 billion yuan were invested to equip the Yuxi and Kunming cigarette factories with advanced Western technology and to upgrade the facilities of Chuxiong, Qujing, and Zhaotong cigarette factories to the leading level among domestic manufacturers (Ning 1993, 190-191, 1995, 187; FBIS, January 5 1996). In addition, the provincial and lower level governments have provided, directly or through local branches of state banks, large sums of short-term loans to key cigarette factories to supplement their cash flow (Zhang 1992, 231; Wan 1993, 281).

Concurrent with the massive investment in cigarette production facilities, extensive efforts have been made by the provincial and subprovincial governments to improve the quality of tobacco leaves produced by Yunnan farmers. Yunnan tobacco gained its fame for good quality in the early 1950s when a small amount of Yunnan tobacco was assessed and highly praised by a panel of international tobacco experts (Wan 1993, 7). But the quality of tobacco actually varied among different regions of the province and over time. In the

early 1980s, grade A (on a three-level industry scale) tobacco leaves only accounted for about 10 percent of the total output (Wan 1993, 24). This seriously affected the quality of cigarettes. In 1982, the output of grade A cigarettes produced by Yunnan factories ranked only 14th in the nation (Wen 1994, 37). To change that situation and increase Yunnan cigarettes' national competitiveness, the Yuxi Cigarette Factory decided to integrate tobacco cropping into its scope of operation by forming mutually beneficial contracts with tobacco leave growers. Starting from 1986, it joined forces with the Yuxi prefectural government to supply a wide range of support for tobacco farmers to improve the quality of their output which, in return, was sold to the cigarette manufacturer. The assistance included the development and supply of high-yield seeds, price subsidies for imported fertilizers, investment in irrigation facilities, cultivation of "demonstration fields," provision of technical training and consultation, construction and improvement of roads, subsidies for transport and coal, and use of bonus prices for high quality leaves (Wan 1993, 14-69; Xu 1993, 7-13). From 1985 to 1991, a total of 610 million yuan was spent for these forms of support, of which 56 percent came from the local government (Wen 1994, 49). This practice was quickly duplicated by other cigarette factories and local governments in Yunnan, involving the use of 7 billion yuan during 1986-1990 (Xu 1993, 13). As a result of such effort, the share of grade A tobacco leaves increased to 36 percent of the total output in 1993 (Wen 1994,

60).

Other than resource support, policy flexibility has been equally important to Yunnan's becoming the nation's preeminent tobacco-producing region. An example of this is the tolerance and even encouragement to above-quota production of tobacco leaves and cigarettes. Instead of penalizing the producers that exceed the quotas, local governments have actually worked out various formulas for sharing the gains from above-quota output with producers (Zhang 1992, 105; Wan 1993, 46, 234; Wen 1994, 55). Another example is the so-called "yiyan yangyan" ("supporting tobacco with tobacco revenue") policy. Starting from the early 1980s, cigarette factories in Yunnan were allowed to use their pre-tax profits to pay back loans from state banks for technological upgrading and improvement of product quality. During 1981-1991, for example, 50 percent of the 616 million yuan fixed assets added to the Yuxi Cigarette Factory was financed with bank loans under such arrangement (Wen 1994, 200). In the province as a whole, from 1980 to 1990 16 percent of the 25.7 billion yuan's tobacco earnings (profits and taxes) was used for loan repayment by cigarette factories (Wan 1993, 6-8, 220-221).

Still another example of policy flexibility is the creation of a so-called "three-in-one" system in the regulation of tobacco production and distribution, which was a major step to weaken and even defuse the restrictions imposed by the centrally integrated tobacco regulation hierarchy. Under this arrangement,

the director of the leading cigarette factory in a prefecture also assumed the leading positions of the local STMB and CNTC, thus combining the roles of producer and regulator in one person. As a result, the representative offices of the national tobacco authority were reduced to integral parts of the local production and distribution complex. The system was started, with the approval of the provincial government, in the Yuxi Cigarette Factory in 1986 and subsequently adopted by other major cigarette factories in Zhaotong, Kunming, Chuxiong, Dali, Honghe, and Qujing (Ning 1993, 204, 1994, 219).

5 Agglomeration and external economies

The efforts made by Yunnan's local governments to promote the tobacco economy have paid off: the province became the national leader in tobacco production within the short span of one decade, as shown above. Timing is a crucial factor in this connection. As the province was the first in the nation to commit massive amounts of resources to the tobacco sector and to create extraordinary regulatory flexibility to facilitate its expansion beyond the traditional shadow of central planning, it reaped Schumpeter's (1942) "entrepreneurial profits." The extensive upgrading of technology and improvement in productivity and product quality in the early and mid 1980s, for example, not only led to a drastic increase in sales but also paved the way for leading cigarette manufacturers in Yuxi, Kunming, and Qujing to become three of the first five factories chosen by the central authority for the experiment of

price decontrol in 1988. The 9 premium brands produced by these three factories accounted for 75 percent of the sales of the 13 decontrolled brands (Xu 1993, 17-18). The wide gap (1-3 times) between market and government prices brought huge profits to these factories and strengthened their national competitiveness (Gao 1990, 165).

While being one step ahead of other tobacco-producing provinces in resource and policy support (especially that for leading enterprises in Yuxi and Kunming) was an important factor for the momentum gained by the Yunnan tobacco economy in the mid and even late 1980s, however, that advantage may not be a sufficient explanation for its subsequent continuation of growth. As other major tobacco-producing regions also make extensive investment for technological upgrading and adopt flexible tobacco policies (Gao 1990, 45; Zhu and Huang 1992, 56-60), Yunnan's initial edge in these aspects tends to be narrowed. But statistics in Table II appear to indicate a trend of consistently increasing returns to Yunnan's expanding tobacco economy since the early 1980s. To see what sustains its competitiveness, one needs to examine the organization of the local tobacco economy. In particular, the cooperation, competition, and spill-over effects among producers in the local tobacco agglomerate merit close attention.

Table II about here

Like those in other tobacco-producing regions, Yunnan's tobacco economy

has been organized under the dual command chain between the central tobacco authority (STMB and CNTC) and the provincial government; and since the early 1980s, the locus of authority has gradually gravitated toward the latter. Instead of making the implementation of central tobacco policies the primary role of the local regulatory hierarchy, the provincial government has focused on turning the initially centralized framework of regulation into an environment in which to foster synergy among local tobacco producers and suppliers.

A major step taken in this direction is to contain competition in the local market of inputs (tobacco leaves), which is a major challenge to agglomeration economies (Malmberg 1996). The quality (and profitability) of cigarettes depends greatly on that of tobacco leaves, which are grown and supplied by farmers. Since 1979, farm land in China has been divided into small pieces and contracted to individual households which, after fulfilling government quota for grain production, are free to make their cropping decisions and sell their output on the market (Riskin 1991). Since the early 1980s, there have been "tobacco leave wars" in many tobacco-producing regions of China, where cigarette manufacturers try to outbid each other by offering more attractive prices to tobacco leave growers for high quality leaves, which have been in short supply (Mou 1994, 151). The shortage and hence the "wars" have persisted due to slow improvement in farming techniques, fragmentation of farm holdings (which increases the difficulty of irrigation and use of specialized equipment), and

underdevelopment of technical information dissemination systems (Ibid). As a result, the intense competition by manufacturers in tobacco leave markets has not only driven up input prices but reduced stability in supply and increased the transaction cost in sourcing, thereby narrowing the margin of gains accruing to the competing manufactures involved (Wen 1994, 162-163).

But cigarette manufacturers in Yunnan have largely avoided this problem. In view of the adverse effect of intense input price competition on local cigarette manufacturers, local governments have imposed restrictions on the outflow of high quality tobacco leaves from farming areas under their purview (Wen 1994, 37). More importantly, mutually beneficial ties have been forged through a contractual integration between local tobacco leave farmers and cigarette manufacturers. This was started by the Yuxi Cigarette Factory in the mid 1980s when the factory provided a wide range of support to help tobacco farmers to increase output and improve quality, thereby securing, in return, farmers' commitment to their exclusive sales contracts with the factory. The practice received strong financial and regulatory backing from the prefectural government and the provincial tobacco authority, and was duplicated in other major cigarette factories, as discussed above. It benefited all the parties involved: the farmers, the cigarette factories, and the grassroots level (county and township) governments which receive a fee from the factories for helping them to form, administer and enforce the contracts with farmers and for using administrative

fiats to consolidate plots held by separate households for tobacco cropping (Zhu and Huang 1992, 35). The pay-off for cigarette factories is especially important, for the arrangement helps sustain a stable relationship with input suppliers while improving input quality. Local tobacco officials claim that every yuan's spending on tobacco farming support could bring at least five yuan's worth of gain to cigarette factories (Wen 1994, 458).

Another important area where local governments have been instrumental in fostering synergy in the local tobacco agglomerate is the enhancement of positive externalities. This takes place in two forms: the spread of demonstration effects and the enhancement of demand for local products. The clustering of large numbers of producers making similar or related products provides opportunities for mutual observation and learning, thereby facilitating the spread of technological and institutional innovation (Storper and Walker 1989). Throughout the process of Yunnan's rise to national preeminence in tobacco production, the Yuxi Cigarette Factory played a leading role in innovation, especially innovation for institutional change. In the early 1980s, it was the first cigarette manufacturer in the province to break away from the pre-reform egalitarian income distribution practice by adopting a wage system that tied the performance of employees to their rewards. It was also the first to take advantage of the "pre-tax repayment" allowance and venture upon heavy borrowing for the importation of advanced foreign facilities (Zhang 1991, 11-

15). In the mid 1980s, it initiated the "three-in-one" arrangement to cut administrative cost and weaken the constraints posed by central tobacco policies. At the same time it also pioneered the practice of integrating tobacco farming with cigarette production through mutually beneficial contractual ties. The success of these experiments had an immediate impact on other cigarette producers, which quickly followed Yuxi's footsteps (Zhang 1992, 39-157). The similar organizational setting in which they operate and their geographical proximity with Yuxi are conducive to such learning and adaptation. But a more important impetus comes from the provincial government, which has not only endorsed and financially supported the practices adopted by the Yuxi Cigarette Factory, but actually actively promoted, via a series of administrative fiats, such practices as the model for other major cigarette manufacturers (Wan 1993, 7-15; Wen 1994, 182-183). This quickens the spread of institutional change in the local tobacco economy and thereby contributes to improving the competitiveness of local producers.

On the other hand, an important feature of Yunnan's tobacco economy is a product differentiation among local cigarette producers with varying levels of technological sophistication and product quality. The strategy adopted by the provincial government is to concentrate its support on the core enterprises (i.e., the two cigarette factories in Yuxi and Kunming) while leaving the task of supporting other cigarette manufacturers largely to lower level governments

(Wen 1994, 29). While about 70 percent of China's premium brand cigarettes are produced by Yunnan manufacturers (FBIS, June 28 1994), Yunnan cigarettes also occupy significant shares and sell well in the markets for second and third tier cigarettes (Gao 1990, 169-179; Mou 1994, 146-158). Although the rates of return in these markets are not as high as those in the premium brand market, the sales volume there is very large, especially in a significant part of China's rural areas where the standard of living has improved but remains moderate (Ibid.).

The ability of Yunnan's second and third tier cigarette manufacturers to compete in such markets is not only sustained by the efforts made by lower tier manufacturers to follow the examples set by the leading factories in Yuxi and Kunming in innovation and management. It is also reinforced by the demand-enhancing effects of top brand products: the reputation of Yunnan tobacco created and sustained by best-selling brands like Hongtashan and Yunyan and (to a lesser extent) by the reputation of Yunnan tobacco leaves has had an uplifting effect on the sales of Yunnan cigarettes in lower tier markets. Results from market surveys conducted in the late 1980s and early 1990s show that brand name recognition for Yunnan's premium cigarettes was the highest in the country and, other things being equal, consumers' tendency to purchase Yunnan cigarettes was strong (Zhu and Huang 1992, 186; see also Mou 1994). For lower tier manufacturers, the reputation of Yunnan tobacco sustained by leading

brands provides a free-riding opportunity, which they have capitalized upon with the aid of the local government. While continuing to support the top two factories in their efforts to maintain their lead by further upgrading their technology and product quality, the provincial government has also deliberately helped lower tier manufacturers to sell their products in national markets with a tie-in sales policy (through its wholesale distribution networks) for Yunnan cigarettes (Wan 1993, 236). Although such help alone is not sufficient to sustain the competitiveness of local manufacturers of lower tier products, it gives an edge to them in national competition provided they also seek to improve their product quality. Indeed, some of them, such as the factories in Honghe and Dali, have done so and migrated to higher level market niches (Mou 1994, 160).

The competitiveness of Yunnan's lower tier cigarettes in their market niches has an important implication to the local tobacco economy as a whole. The expanding demand for end products expands their manufacturers' demand in local labor markets and intermediate input markets. This has led to efforts to upgrade local supplies, which benefit top as well as lower tier product manufacturers but would tend to be less forthcoming in the absence of economies of scale sustained by a critical mass of demand. Yunnan's local governments are not only instrumental in enhancing such demand, as discussed above, but have also played an important part in accommodating it. Since the

early 1980s, three vocational schools of tobacco technology and management, nine research and technical service centers, and numerous local support stations for tobacco farming have been established to provide training and technical services for the tobacco sector (Ning 1989, 386; Wan 1993, 294-302). The financial support for these facilities comes from cigarette manufacturers and local governments (Wen 1994). Starting from the mid 1980s, local governments in the tobacco-producing prefectures have also relaxed regulatory restrictions on inter-firm investment so as to facilitate cigarette factories to integrate or forge closer ties with local suppliers of intermediate inputs and related services. The Yuxi Cigarette Factory, for example, has invested in over 40 such enterprises to help them upgrade facilities and calibrate their products to its needs (Zhu and Huang 1992, 92, 158). In 1993, Kunming Acetic Fibre Company, the province's largest joint-venture (with the Celanese Far East Company of the US) was formed with an investment of US\$ 50 million, of which 70% came from the provincial government (Ning 1994, 219). The latest technology has been used to produce cigarette filter tips for local manufacturers, representing an effort to make the province self-reliant in the value chain of cigarette production and to cut import expenses for intermediate inputs. The main driving force for this huge project, it appears, is the broadly based local demand for filter tips and the economy of scale for making them locally (FBIS, November 7 1996).

6 Discussion

The above account of Yunnan's tobacco economy addresses two related questions in the study of regional economies: why agglomeration takes place and how it is facilitated and advanced. I have shown that under certain conditions local government action may become a major driving force of agglomeration. This echoes the argument that spatial concentration of economic activities is often more than a process and outcome of spontaneous interactions among economic actors (Johnston 1989). It is also consistent with the view that local governments under a reforming communist regime may actively promote marketized economic activities during a process of systemic transformation (Oi 1992; Walder 1995). But to account for the role of the local government in these regards, it is important to investigate further how its action interacts with other mechanisms in affecting the spatial distribution of economic activities. In particular, attention needs to be drawn to the historical context in which local officials identify and prioritize their pertinent choices, as well as to the organizational processes in which the local government influences the interactions between local economic actors.

The issue of path-dependence is widely noticed in the studies of agglomeration economies (Malmberg 1996; Martin and Sunley 1996). A major focus of analysis is the triggering effect of fortuitous events on cumulative causation that feeds on the gains from interactions between economic actors

engaged in related activities (e.g., Krugman 1991). The findings presented above point to a variation of this theme by illustrating a situation where an agglomeration process is effectively set in motion by path-dependent actions of the local government. When the interests of the leading officials in a locality are closely tied to the economic growth under their purview, they may seek to accommodate such interests by selectively promoting certain local economic sector(s) that have the potential of bringing high returns. This tendency is likely to be strong in a transitional system like China's where for historical reasons the state commands vast resources and regulatory power over economic activities. The choice for this course of action, though, hinges greatly on the initial state of the local economy, which defines the frame of reference in which the key decision-makers assess comparative advantages and evaluate opportunity costs. The sharper the contrast between the opportunity costs of different alternatives, the stronger their tendency to narrow down their choices and reach a consensus, and vice versa. It follows that in certain circumstances the start of concentration may be traced to the calculations by key local decision-makers on the relative strengths of local economic sectors. Such relevance of intra-locality comparative advantage, however, is somewhat clouded by the now predominant emphasis on the role of inter-locality competitive advantage in agglomeration economies (e.g., Porter 1990), which instead seems to hold a more useful clue to understanding what catapults the agglomeration process.

Once started, a formative local industrial agglomerate may rise or falter, depending on whether steady returns are brought to its initial clustering process. A key factor in this connection is innovation (Storper and Walker 1989). But innovation faces resource and regulatory constraints, and timing is critical to the margin and duration of gains accruing to innovative practices. The growth of Yunnan's tobacco economy since the early 1980s indicates that locally based innovation (especially institutional innovation) may be significantly facilitated by the local government's investment of large amounts of resources, creation of regulatory flexibility, and adoption of policy incentives in the sector(s) that it intends to promote. Also, these measures may be timed such that a head start is created for leading enterprises in the local agglomerate through a quickened adoption of innovative practices and the resultant opportunity to build up a strong initial momentum with the gains from inter-regional unevenness in technology and institutional constraints.

With the intensification of inter-regional competition (especially from similar agglomeration economies promoted by governments in other localities), however, the competitiveness of the local agglomerate may draw increasingly more on scale economies, especially external economies, instead of the timing factor. Among the positive externalities that have been associated with agglomeration economies are reduction of transaction cost, knowledge and technological spillovers, pooling of skilled labor force, and upgrading of

specialized inputs and services (Malmberg 1996; Martin and Sunley 1996; Storper and Walker 1989). But these effects need to be created rather than being readily available once agglomeration takes places. What happens in Yunnan's tobacco economy is that, through financial aid, regulation, and administrative fiats, the local governments have expedited and facilitated the process where these effects are brought about. Three important aspects of this process are particularly noteworthy.

First, a major challenge to the development of synergy within a local agglomerate is relational instability among local transaction partners, which may arise in an economic environment with great imbalances and uncertainties in demand and supply. I show that the potentially high transaction cost associated this situation may be contained through a cultivation of mutual commitment between local suppliers and producers, which stabilizes the pairing of transaction partners and lessens price competition in the local input market while contributing to the improvement of input quality. Second, a major form of spillover among local enterprises in the local agglomerate is the demonstration effect of locally based institutional innovation. This is particularly important in the context of a transitional economy like China but has yet to be adequately addressed in the theoretical literature. Third, agglomeration economies often involve a certain degree of product differentiation among local enterprises. The reputation created and sustained by enterprises in the technological core of an

agglomerate for their products may have a ripple effect on the sales of lower-tier local products and thus give them an edge in competition. The expansion of external markets for local products in turn increases the demand for upgrading labor skills, intermediate input supplies, and specialized services in the local economic space. Yunnan's tobacco economy offers some indication of this linkage between product differentiation and Marshallian external economies, though more systematic data and further research are needed to ascertain the clues identified here and flesh out their implications.

As to the active role of local governments in China's recent economic development, this case study suggests that it is important to account for the processes in which their spatial strategies for promoting local economic growth are formulated and implemented. The effectiveness of "developmental" use of resources and policies by local governments hinges greatly on whether it is synergetically integrated with mechanisms that enhance competitiveness of the local economy. Yet why and how a synergetic integration takes place needs to be shown and explained, for it does not necessarily follow from strong motives and decision power of local officials, which remain the focal issue in the existing literature. In this regard, the tobacco economy of Yunnan offers a useful backdrop against which to examine the forces at work.

While assessing the impact of Yunnan's tobacco strategy (and the resultant agglomeration economy) on local socio-economic development is not

the main purpose of this study, it is important to note that its outcomes are mixed. Although considerable economic gains have been brought about by the growth of the tobacco sector, it compounds some existing problems while proving to be of little use in addressing others. A most obvious problem is the public health hazard caused by the expansion of tobacco consumption in China's reform era. One third of the Chinese population are smokers (FBIS, April 27 1994), and about 500,000 people reportedly die each year of smoking-related diseases (FBIS, May 24 1995). Despite a steady improvement in manufacturing techniques, most of the cigarettes produced by Chinese manufacturers (including those in Yunnan) contain nicotine and tar contents higher than the average international levels ((Wan 1993, 8). The drastic expansion of tobacco production led by Yunnan and the growth of vested economic interests in this sector add to the difficulty of curtaining the harmful effects of smoking on health and the resultant economic costs (FBIS, May 24 1995). Yunnan's local leaders and tobacco manufacturers, for example, have feared that a decline in consumption would affect the province's established tobacco economy and thus firmly opposed the idea of discouraging smoking with high prices and high taxes (Mou 1994, 70).

Moreover, despite the impressive gains made by the tobacco sector, Yunnan's economy continues to lag behind most other provinces'. When the tobacco sector began to grow in the early 1980s, Yunnan was one of the poorest

provinces in China. That fact remained unchanged a decade later. In 1994, per capita GDP and per capita income of rural residents in the province were 2,490 yuan and 803 yuan respectively, ranking 25th and 28th among the nation's 29 provinces and municipalities (FBIS, April 16 1996). Also, the growth of the tobacco sector has been accompanied by an increase in intra-provincial economic disparity. In 1982 the average per capita national income of the 7 tobacco-producing prefectures was 31.5 percent higher than that of other prefectures (mostly minority areas) of the province; in 1992 the figure rose to 47.3 percent (Zou and Miao 1989, 251; Yunnan sheng tongji ju 1989, 39; Yunnan sheng tongji ju 1993, 39, 615-619). How to tackle these problems no doubt poses a major challenge to Yunnan's local governments in the years to come.

Notes

1. In contrast, for example, the combined figures for flue-cured tobacco acreage, flue-cured tobacco output, and cigarettes in all the states of the US (the world's second largest tobacco-producing country after China) in 1995 are 155,888 hectares, 337,930 tons, and 760 billion units respectively (USDA 1995, various tables).

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Table I Selected statistics on Yunnan's tobacco production

year	acreage of flue-cured tobacco (1,000 hectares)	output of flue-cured tobacco (1,000 tons)	output of cigarettes (million cartons)	Yunnan's % in the national total of value-added in cigarette production	Yunnan's % in the national total of cigarette sales	% of tobacco taxes and profits in Yunnan's total government revenue	Yunnan's % in the national total of cigarette taxes and profits
1978	6.9 (10.3)*	123 (11.7)	0.6 (5.4)	—	—	25.2	—
1980	35.1 (13.3)	103 (14.4)	0.9 (5.9)	6.2	6.2	39.9	6.6
1985	132.8 (18.5)	410 (19.8)	2.1 (8.7)	10.2	9.9	49.3	19.6
1987	116.7 (19.2)	336 (20.5)	3.0 (10.4)	—	—	50.0	—
1988	153.8 (17.7)	507 (21.7)	3.6 (11.5)	15.7	14.1	—	15.5
1989	155.6 (15.5)	458 (19.0)	4.1 (12.8)	19.2	16.4	60.0	19.0
1990	157.0 (17.5)	436 (19.3)	4.5 (13.6)	20.7	18.4	—	21.3
1991	186.8 (17.9)	582 (21.8)	4.4 (13.6)	21.4	18.7	—	22.4
1992	247.4 (20.1)	778 (24.9)	4.7 (14.2)	22.1	20.2	—	24.1
1993	315.7 (25.8)	874 (28.8)	5.3 (15.8)	29.5	24.8	—	28.9
1994	254.5 (29.3)	592 (30.5)	6.1 (17.8)	33.9	43.7	80.0	38.4
1995	325.4 (34.2)	761 (36.7)	6.8 (19.5)	38.3	32.2	—	41.8

* Note: Figures in the parentheses of columns 2, 3 and 4 are the percentage points of Yunnan's share in the corresponding national total.

Sources: FBIS, August 5 1995; Gao 1991, 157; Gongjiao tongji si 1989, 197, 1990, 213, 1991, 211, 1992, 226, 1993, 226, 1994, 160, 1995, 146; Guojia tongji ju 1996, 370-373, 435; Wan 1993, 3, 292-293; Pucha bangong shi 1987, 455; Yunnan sheng tongji ju 1996, 303-305, 359,

Table II Returns on scale in Yunnan's cigarette production

year	output of cigarettes (1,000 cartons)	value-added per carton* (1,000 yuan)	sales value per carton (1,000 yuan)
1980	890	0.37	0.55
1984	1,751	0.58	0.82
1985	2,063	0.55	0.86
1988	3,549	0.84	1.48
1989	4,074	1.58	1.61
1990	4,883	1.36	2.20
1991	4,375	1.50	2.34
1992	4,662	1.62	2.70
1993	5,320	2.06	3.33
1994	6,111	2.82	3.86
1995	6,805	2.80	3.82

* *Note:* All values in columns 3 and 4 are adjusted to the price in 1980. The deflators used for the adjustment are from Guojia tongji ju 1996, 271.

Sources: Gongjiao tongji si 1988-1995; Guojia tongji ju 1996, 417; Pucha bangong shi 1987, 455; Yunnan sheng tongji ju 1996, 359, 411.