

The Theories of “Differential Optimums” and “Vertical Integration” and Their Implications for China

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Abstract

Chayanov, outside of his theoretical analysis of how peasant households are distinctive for being at once a production and a consumption unit and the multiple implications of that fact, has made two other major theoretical contributions, one making clear that peasant economies observe the logic of “differential optimums” rather than the simple logic of economies of scale and the other having to do with the need for co-operatives for “vertical integration” of small peasant economies in order to preserve for the peasants more of the value of their products in the BIG MARKET. The former can be readily observed in the “new agriculture revolution” of the Chinese economy in the past few decades; the latter can be readily seen in the striking modernization of the “East Asian” (i.e., Japan, South Korea, and the Taiwan area) economies since 1945. China’s annual “Number One Documents” about agriculture of the past two decades have shown how the country first mistakenly tried to imitate the simple scale-economy logic of the United States and then shifted since 2018 toward a new emphasis on the peasants as the principal agents of agricultural development and peasant villages as the basic unit for agricultural co-ops. Those have been the basis for new advances as well as for reinterpretations and modifications of Chayanov’s two major theoretical visions.

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Among Chayanov's many works, *The Theory of Peasant Economy* (1986 and 1966 [1925]) and *The Theory of Peasant Co-operatives* (1991 [1919, 2nd ed. 1927]) are the two most important. In China, scholars are better acquainted with the former, mainly because its Chinese translation (Qiayanufu, 1996 [1925]) has circulated for some years, but few are acquainted with the latter because to date there is still no Chinese translation available.¹

At the same time, one distinctive characteristic of Chayanov as a theorist is that he always emphasized empirical research, basing almost all of his theoretical suggestions on concrete evidence and habitually presenting and illustrating his theoretical ideas with empirical examples. In this respect, he was very different from many other theorists, especially formalist ones in mainstream economics and jurisprudence.

To be sure, because his evidence came mostly from Russia in the period after the Emancipation of the Serfs in 1861 and from the early Soviet period (along with a fair amount of evidence from West European countries), for Chinese readers (and China scholars), there has been something of an unavoidable gap in understanding. For instance, he uses the example of flax as opposed to oat cultivation to discuss population pressure, which is at some remove from the far more intensive example of small peasant cotton-yarn-cloth production as opposed to wet rice that Chinese readers are far more familiar with. He writes about cow raising, along with butter and milk production, not the pig raising that Chinese readers are far more familiar with. The unit of farmland that he uses is the Russian desyatina, or what in Chinese is termed the "Russian mu" 俄亩, equal to just over one hectare (2.7 acres or 16.39 Chinese mu), not the much smaller Chinese mu. In Russia, a mid-sized farm ran to 10 to 30 "Russian mu," compared to the 10 to 30 Chinese mu of Chinese farms, or just about 16+ times larger. (See, e.g., Chayanov, 1986 [1925]: tables 1–6, p. 62.) For Chinese readers (and China researchers), all these differences inevitably make his writings seem rather remote. For example, when Chayanov discusses "population pressure" with Russian examples of farms of 163.9 Chinese mu, Chinese readers have a hard time grasping how that scale of farming can demonstrate "population pressure" as it is understood in China. As a result, the combining of theorizing with empirical evidence that should have been a strong point of Chayanov's can actually

become something of a hindrance to understanding for Chinese readers and China scholars.

This article will seek to break through this kind of obstacle by using Chinese empirical examples to illustrate and discuss Chayanov's theoretical observations so that Chinese readers and China scholars can more readily grasp the import of those observations. It aims to show more clearly those insights in conjunction with empirical realities, but at times also to show the gaps and differences between those and Chinese realities, thereby to revise, reinterpret, or extend those observations as needed.

An Overview of Chayanov's Theories

Overall, Chayanov's main theoretical contributions can be separated into two major parts: one concerns how small peasant economies actually operate, especially as distinguished from capitalist entities; and the other has to do with prospective theoretical visions for peasant economies, different both from modern Western capitalist agriculture and from the tendencies toward a planned economy in the Soviet Union of the 1920s—which Chayanov rather critically termed the path of “state capitalism” (see Chayanov's brief explanation in Chayanov, 1991 [1919]: xxxviii).

The former consists mainly of Chayanov's views on how the peasant farm is different from a capitalist entity: first because it relies on family labor rather than hired workers and second because its economic decisions are based heavily on the consumption needs of the family (Chayanov, 1986 [1925]). I have used these insights of Chayanov's in my early work to demonstrate how those characteristics of the peasant farm, seen in conjunction with the basic realities of farming in North China and the Yangzi delta from the Qing period down to the Republic, help us to understand the high level of “agricultural involution” in China, not evident to any such degree in Russia and the Soviet Union. Precisely because the small peasant farm was a unit of consumption as well as production, it would and could rely on the low-cost auxiliary labor of the family (women, children, and the elderly) to carry out a level of labor intensification per unit land that could not have been done by a labor-hiring entity. The labor intensification served to maximize output per unit land, the scarcer of the two resources. The most striking and most pervasive example was the widespread switch in the Yangzi delta from wet rice farms, already highly intensified, to farms that cultivated, spun, and wove cotton. The former required 10 days of labor input per mu; the latter 180 days, but for returns per mu that were just three to four times higher than from rice. What those farms relied on was the labor input of low- or no-cost auxiliary family labor, for very low returns per unit labor but the highest possible

returns per unit land. That kind of production also caused parallel increases in the market price of the land. As a result, cotton came to replace completely the planting of wet rice on virtually all land that could possibly grow cotton. By the same logic, such farming also completely eliminated (proto-) capitalist farms based on hired labor that was much more expensive than auxiliary family labor. The entire delta area thereby evinced a pattern of change diametrically opposed to that of the West, where the rise of labor-employing capitalist farming in its modern agricultural revolutions, especially in the classic case of England, demonstrated an entirely different pattern of change (Huang, 1985, 1990; Huang Zongzhi, 2023 [1992, 2000, 2006, 2014]). That kind of “involution” (and “involutionary commercialization”) was far more intense and dramatic than anything Chayanov had seen or imagined. That was my demonstration and extension of principles that he had surmised in theory—*writ large*. Those findings of my early research are just briefly summarized here, and no more will be said of the subject in this article.

Here we need to consider briefly another significant theoretical suggestion of Chayanov’s, namely that the size of peasant family farms will fluctuate along with the natural “demographic cycle” of the family. When the family comprises, for example, two adult parents plus two working-age children, or four full labor units, its farm will generally reach its largest size. When the family changes into just two full labor units (e.g., two nonworking elderly members and two working adults or two working adults and two nonworking younger children), then it will change to its smallest size (Chayanov, 1986 [1925]: chap. 1). This was a pattern that could be seen fairly widely in post-Emancipation Russia when communes providing land as needed were fairly widespread, but certainly not in China, where land was privately owned and passed from one generation to the next and where land was generally far scarcer than in Russia.

However, in China under the higher-stage collective farms of the 1950s, when there was no longer private property in land, the pattern Chayanov observed did occur, although in a different way: the most well-to-do families in the collectives were those in which all members of the family were workpoint earners (e.g., two working-age parents and two working-age children), and the least well-to-do when fewer members of the family were workpoint earners (e.g., two working adults and two nonworking young children) (Huang, 1990: 236-38).

This article’s main concern is not with the briefly summarized theories above but rather with Chayanov’s insights about the future path of development of the peasant economy in the face of challenges from, on the one side, the capitalist mode of development and, on the other side, the planned economy to come and its collectives.

Chayanov's main theoretical insights in this regard were two: "differential optimums" and "vertical integration." The former had mainly to do with the challenge from the rise of capitalist industrialization and farming and its logic of economies of scale, often ideologized into a belief in "bigger is better," and also from the emergent movement in the Soviet Union toward a planned economy, also with a belief in the economies of scale (Chayanov, 1991 [1919]: xxxviii).

What the theory of "differential optimums" makes clear is that peasant economies do not follow the simple logic of economies of scale, but rather evince different optimal scales for different kinds of productive activities. Horizontally speaking, for example, in China's Yangzi delta, cotton cultivation, compared to vegetable growing and wet rice, all evinced different optimal scales. And vertically (*vis à vis* the big market) speaking, the processing, packaging, storing, transporting, and selling of agricultural products all have differentially optimal scales. As Chayanov explains, neither will follow simply the logic of bigger is better, but rather will have differential optimums for different kinds of products, as well as for different stages of the production to marketing process. This article will deal first with this idea of differential optimums and how it applies to Chinese agricultural production and the processing and marketing of the products.

First, the notion of economies of scale of capitalist economies cannot be applied simply to agriculture. Agricultural productivity, after all, is severely constrained by the limited productivity of land. As Chayanov points out, the growing power of land cannot be almost infinitely expanded in the manner of the amount of horsepower of machines and must rely much more on just increasing the amount of farmland used. But that imposes immediate constraints on scale economies. As Chayanov notes, when the size of the farm becomes too large, there will be costs incurred in moving and transporting things from one place to another, very different from much more spatially concentrated industrial production (Chayanov, 1991 [1919]: chap. 1).

Then, there are differences between the "horizontal integration" of agricultural production and the "vertical integration" of the processing, packaging, storage, transport, and marketing of agricultural products. Scale economies do not apply to (horizontal) production, but do apply to a considerable extent to the vertical processing of agricultural products for the market. It is in the latter sphere that capitalist economies as well as "state-capitalism" planned economies pose the greatest challenge to the peasants by their logics of "bigger is better." The former will rely heavily on commercial capital to carry out the "vertical integration" of products with the big market, thereby cutting deeply into the earnings of small peasants. The latter will rely on the state to undertake vertical integration, but that too can or will

cut deeply into what the peasants receive. Small peasants of Russia and the Soviet Union had to face these challenges from capitalism and from the planned economy.

As we have already seen above, at the level of horizontal integration, peasant economies do not necessarily behave like capitalist entities in simply following the principles of economies of scale and can act in accordance with optimal “small but fine” 小而精 scales. But when faced with the big market and its requirement for vertical integration, small peasants must face the challenges posed by the economies of scale enjoyed by capitalist entities and state planning entities. They therefore must find an alternative way to integrate vertically with the market.

This challenge from capitalism and state planning is directly related to the theoretical notion of “differential optimums.” Only when we grasp the differential requirements between industry and agriculture at the level of horizontal integration as well as the requirement for scale economies for vertical integration can we see the differences between horizontal and vertical integration, and the need of small peasants for better vertical integration in order to retain for themselves more of the returns from what they produce.

In response to that problem, what Chayanov suggests is for small peasants to organize their own cooperatives to provide services for vertical integration, rather than to rely on either capitalist entities or “state capitalist” entities to provide such, thereby enabling them to retain more of the value of their output for themselves.

Once we grasp the differential optimums between industry and agriculture, as well as their differential horizontal and vertical needs, we can then understand, on the one hand, why small peasant economies can, because of the differential optimums between different kinds of agriculture and between industry and agriculture, persist despite the challenge of large-scale capitalist production and, on the other hand, why small peasants need to form cooperatives for vertical integration to meet the challenge of capitalist commercial entities as well as of the “state capitalism” entities of the planned economy.

Below we will discuss first how China’s peasant economy in its Reform period developed a small-scale “new agriculture” that illustrates well the “differential optimums” principle of agricultural production, then how the “East Asian” countries and areas (of Japan, South Korea, and the Taiwan area) developed agricultural cooperatives that illustrate well Chayanov’s idea of “vertical integration,” and finally how the past twenty years of China’s “Number One Documents” from the Party Central on agricultural policy first demonstrated tendencies opposed to Chayanov’s principles, and then, from 2018 on, new orientations consistent with Chayanov’s “differential optimums” and “vertical integration.”

China's Small-Scale "New Agriculture"

The development of Chinese agriculture since the 1980s has been powered mainly by the rise of (what I term) "labor and capital dual intensifying" small-scale high value-added "new agriculture." The Chinese people's food diet, which had long been mainly a pattern of 8:1:1 of grain, meat, and vegetables, has now changed to a 4:3:3 structure, causing the new agriculture to occupy fully one-third of the nation's cultivated land and to produce two-thirds of its total agricultural output value. In the thirty years between 1980 and 2010, agricultural output grew by 6 percent per year, doubling every twelve years and altering completely the structure of Chinese agriculture, fully warranting the term "the new agriculture revolution" (Huang, 2016; Huang Zongzhi, 2010; see also Huang Zongzhi, 2020).

It was a revolution that was very different from the eighteenth-century English revolution (a mere 0.7 percent increase per year) and also the "green revolution" (powered mainly by the use of chemical fertilizer) in developing countries of the 1960s (increases of 2-3 percent per year). Among its three principal sources of capital—enterprises, the state, and the peasant households—the last accounted for the largest proportion, especially from peasant earnings through off-farm employment (Huang and Gao, 2013). Its main entities have been small peasant plastic-tented vegetable farms of 1, 3, and 5 mu, fruit orchards of a few mu, and small farms of 10 to 20 mu that combine planting and animal raising. They make up what I call "labor and capital dual intensifying" small peasant farms. It is undoubtedly still very much small peasant farming, in the main by husband-wife teams (Huang, 2016; Huang Zongzhi, 2010, 2020).

Small peasant farms are clearly fine illustrations of Chayanov's theory of differential optimums, even if their concrete form is likely outside the boundaries of what he could have imagined in the Soviet Union of the 1920s. They are especially well represented by the small tented vegetable farms of 1, 3, and 5 mu, with demands for irregular labor input across long working days, for which the husband-wife owner-operators are particularly well suited, far cheaper and more reliable than hired workers. The logic is similar to what we see in small husband-wife entities that remain pervasive in big cities everywhere. They demonstrate with stark clarity the principle of differential optimums rather than simple economies of scale of large entities via mechanization. They represent in fact a modern agricultural revolution driven by small-scale peasant farms. This is the successful side of the "new agriculture revolution." (To be sure, we also must not underestimate the considerable amount of mechanization that Chinese agriculture has undergone in recent years, but that mechanization has been largely limited to "big field agriculture" 大田农业 of

grain production [Jiao and Dong, 2018], which must be clearly distinguished from the small-scale “new agriculture” being discussed here, especially from what is termed in Chinese “infrastructural agriculture” 设施农业.)

The weakness of small peasant farms consists in the fact that they lack efficient “vertical integration” outside of that organized by commercial capital or state planning. Even today, this new agriculture remains highly dependent on extractive commercial capital for the processing, packaging, storage, transport, and marketing of its products. Small peasant farms also lack the necessary refrigeration for the preservation of fresh produce (Huang Zongzhi, 2012; Huang, 2011).

Their present vertical integration consists first of local networks of small dealers and peddlers who sell to local markets, where the products command a relatively low price, and of course, at the cost of a significant portion of the possible value of the produce. As for the produce that enters into markets in the towns, county seats, municipalities, and big cities, where it can command a higher price, the peasants can rely only on commercial entities to undertake the necessary processing, packaging, storage, transport, and marketing—of course for an even larger proportion of the market value of the produce. The small peasant thus ends up with just a fraction of the actual selling price of his produce (Huang Zongzhi, 2012; Huang, 2011).

As for produce that enters into large wholesale markets, it must bear the expenses of entities that are, in the main, not intended to be service providers but rather profit-making, even when set up by the state. That is the prevailing nature of most such wholesale markets. Moreover, most of them lack refrigeration facilities, which means significant losses from rotting produce. For fresh farm produce, it has been estimated that the total logistical cost from processing to sale can amount to as much as 60 percent of the final market value of the product. (See, e.g., Liu Yunqin, 2014.) As a result, even the producers of the high-value tented vegetables who have driven the new agriculture revolution in China only receive a relatively low fraction of the value of their produce.

They, to be sure, drove the 6 percent increase per year in Chinese agriculture, which is very impressive for agriculture, but that was in the context of a nearly 10 percent per year growth rate in the larger economy as a whole, such that they still remained quite some distance behind the cities. Add to that the fact that they themselves received only a relatively small portion of the total value of their output, this meant that even they, not to speak of those peasants who merely planted low-return foodgrains, remained trapped in the long-standing “urban-rural gap” in China.

This kind of problem facing small peasants in the big market was precisely Chayanov’s principal concern. Even though he did not, could not, foresee concretely the problems facing these new-style peasants of China’s

new agriculture, and the new forms of production that they engage in, he nevertheless grasped clearly the problem of logistical costs for small peasants producing for the market. That was why he advocated organizing peasant cooperatives to cope with the necessity for “vertical integration” of their produce for the market. The Chinese realities discussed above are in fact proof of his perspicacity in lifting out the problem: how are weak small peasants to cope with the problem of a big market and big commercial capital and, of course, also governmental extractions through a bureaucratized system of “state capitalism”?

This is the basis for his second big theoretical insight and suggestion, namely, for small peasants to develop their own cooperatives to cope with the problem of processing, packaging, transporting, storing, and marketing their produce. The purpose is to help small peasants retain a larger proportion of the value of their produce. This is not a problem that commercial capital would be concerned with, nor one that “state capitalism” would deal with (Chayanov, 1991 [1919]: chaps. 1 and 2; see also Chayanov, 1986 [1925]: chap. 7).

Even so, we need to see that in his conception of “vertical integration,” Chayanov did not see a role for the village community. This was due in part to the fact of the relatively sparse population of Russia as compared to China. Whether in the Russian or the Soviet Union period, there was nothing comparable to the tightly knit village communities that have long since characterized rural China. This is a point of disconnect between Chayanov and Chinese realities. We will see below how the natural village and its community would make up the core for village-based cooperatives for the “vertical integration” of “East Asian” countries and locales (Japan, South Korea, and the Taiwan area), whereas Chayanov, because of the vast relative spatial differences between Russia-Soviet Union and China cum “East Asia,” gave no consideration to them.

Moreover, Chayanov also gave no consideration at all to “class relations” or “production relations”—that is, landlords extracting (“feudal”) rents of 30 percent to 50 percent of the harvest from tenants and rich peasants extracting “capitalist” “surplus value” from their hired agricultural workers, which had been the major concerns of Marxism and of the Chinese Revolution. Of course, in China after the Land Reform, and well before the “Reform” period since 1978, rural class relations were no longer issues of major concern. For the Reform period, it is the “new agriculture revolution” and Chayanov’s concern for the small peasants versus the big market that have become the central issues.

The East Asian Co-op Experience

Even Chayanov himself could never have imagined that his “vertical integration” co-ops vision and theoretical logic would actually, due to a set of

extraordinary historical coincidences, become historical reality around the middle of the twentieth century in Japan, South Korea, and the Taiwan area, thus propelling the most successful modernization of peasant economies in modern history.

To be sure, looking back to Japan before its defeat in 1945, we see no signs of anything resembling a bottom-up process of vertical integration. What had existed was a top-down reality of fairly successful rural development as a result of the government's provision of chemical fertilizer to small peasants. That powered a 2 percent to 3 percent rate of growth, which was all the more positive because the rural population remained constant due to fairly vigorous urban development. Even in its occupied colonies of Taiwan from 1895 and Korea from 1910, quite impressive rural development was generated by the same measure (Huang Zongzhi, 2015). But those were all results of top-down actions.

Later rural development occurred because of a set of extraordinary coincidences after the defeat of Japan. First was the influence of a group of officials in the US-dominated Supreme Command of Allied Powers (SCAP) who identified with Roosevelt's New Deal progressive policies. They set to reconstructing occupied Japan with a set of rural policies that could not have been implemented under normal circumstances. Their major concern was to end landlordism, which they saw as the principal social basis for Japanese militarism and therefore sought to construct an owner-cultivator economy on which a new Japan could be based. They instituted laws that forbade landownership over 44.1 mu (3 Japanese chō). Above that size, the owner must turn the land over to SCAP, which would then sell it to tenants and cultivators with insufficient land. Their intention was to establish a new social basis for Japan of villages composed of owner-cultivators and to make that the basis for a new democratic government. That kind of change was not something that could have been carried out under normal circumstances (Huang Zongzhi, 2015: 20; 2018; see also Li Hanqing, 2012: 88-99). But under the orders of the SCAP, they were implemented by administrative fiat and newly established laws for the complete revamping of Japanese society and economy.

Moreover, SCAP ordered the local governments to turn over the resources they controlled for agricultural assistance to new cooperatives set up in the villages, as one more measure to build the basis for democracy. The new village cooperatives in turn came to work with the government-established wholesale markets (dating back to 1923; see Harada, 2016), which set wholesale prices and standards for agricultural products, thereby to stabilize and help develop the new village co-ops as the basis for basic-level democracy in Japanese society.

For the officials who identified with the New Deal, all this added up to what could not have been accomplished within the United States itself; these were measures that could only have been implemented under the commands of an occupying authority—in reality a completely revolutionary reconstruction of basic-level Japanese society. Its final intent was to build an entirely new political-economic system, to end once and for all any possibility for a revival of militarism and also to ensure that Japan would become a lasting ally of the United States (“The American Occupation of Japan,” 2023).

Under the decisive influence of the United States, these ideals, plans, and concrete designs were applied also to Taiwan and South Korea. The result was, almost incredibly, the most successful modernization of agriculture, villages, and peasant households anywhere, forming the basis for what can properly be called the “East Asian model.” The changes helped to propel the three places to become the first non-Western entities to enter the ranks of the “developed countries” of the world, all becoming places where there were no great urban-rural disparities.

All this of course could not possibly have been foreseen by Chayanov, including the establishment, without the domination by monopolistic capital, of ideal basic-level community-based co-operative organizations and the successful collaboration between government-established wholesale markets (to set prices and standards for agricultural products) and those village cooperatives. All those rather unexpectedly accorded with Chayanov’s original ideal for “differential optimums” among basic-level agricultural units and with his wish to transcend the theories and practices of both capitalism and planned state capitalism. They in fact even accorded with Chayanov’s original wish for “vertical integration” through peasant co-operatives, with the difference that the co-ops would be anchored not just on peasants per se but on their natural communities. All this was concretely recognized by a joint research project in 2016 between the Chinese State Council’s Development Research Center and the Rand Corporation. It concluded that on the question of a logistical system for agricultural produce, what China should imitate is not the American model but rather the East Asian experience with co-ops outlined above (Development Research Center of the State Council of the People’s Republic of China, 2016).

It was an extraordinary conjuncture of multiple coincidences. First was the land revolution, not unlike the Land Reform in China, which brought an end to landlordism and established rural communities of owner-cultivators. Then there was also the development of an exceptional set of institutions and services to benefit the new owner-cultivator peasants, including a support system of government-operated wholesale markets to set prices and standards for agricultural produce and co-ops based on solidary peasant village

communities to work together with the wholesale market system to develop the logistical system for agricultural products. The entire system, despite a multiplicity of other motives and intentions, came unquestionably to be one that greatly favored the small peasants. The end results were more a matter of historical coincidence than just human intent or planning, but there can be no doubt about their positive effects for the small peasants and their village communities. They also accord well with Chayanov's theory of vertical integration.

The Central's Number One Documents of the Past Twenty Years

We can apply the above perspective to understand the successive "Central's Number One Documents" of the past twenty years since 2004. Until the last few years, especially the crucial turning point of the Number One Document of 2018, they all very noticeably applied the Western principle of economies of scale, not the realities of China's peasant economy, to think about and construct prospective views of Chinese agriculture. They emphasized the crucial role to be played by large-scale farming entities, always emphasizing the development of big agricultural units, beginning with the development of "dragon head enterprises" (Zhongyang yihao wenjian, 2004: section 2, paragraph 5) and in 2013, even borrowed the term "family farms" 家庭农场 from the United States, to call for farms of scale (Zhongyang yihao wenjian, 2013: section 2, paragraph 1), defining them as farms larger than 100 mu (this when the current average American farm size is 2700 mu). This kind of emphasis on an artificial construct tells us about the extent of the belief in the reified doctrine of economies of scale. To be sure, that did not quite reach the even greater extremes of the ideology of "bigger is better" during the Great Leap Forward (Huang, 2017: see esp. pp. 501-03; Huang Zongzhi, 2015: 26; 2010).

As for what I call "the new (small-scale) agriculture," the Number One Documents did not mention it until 2008, after its vigorous development in the preceding thirty years, using now the term "vegetable baskets" 菜篮子 to refer to the agricultural revolution that had occurred during which the Chinese people's diets underwent the new structural transformations discussed above (Zhongyang yihao wenjian, 2008: section 2, paragraph 2). The new Number One Document finally gave them official administrative acknowledgment and instructed that henceforth administrative responsibility for the "vegetable baskets" would be assigned to urban mayors, just below the level of provincial chiefs who are responsible for grain production (even though, if seen from the point of view of the value of output, the former far exceeded the

latter, at two-thirds of the total value of agricultural output, compared to just one-sixth for foodgrain) (Huang, 2017: see esp. pp. 501-3).

But the basic notion that bigger is better still held on, for a total of fourteen years. Not until 2018 was there a breakthrough out of the original ideological obstacles to result in unprecedented attention to small peasants and their role in the national economy, not to speak of agricultural production, no longer applying the core belief in mechanization and scale economies drawn from the experience of the West. The peasant economy was no longer seen as just something of the backward past, of poverty and underdevelopment to be left behind. That year's Number One Document contained the following passage:

Push forward organic linkages between small peasants and modern agricultural development. Attend to both new-style agricultural entities and assistance to small peasant households. Adopt targeted measures, and help bring small peasant agriculture on track for modern agricultural development. Develop different kinds of specialized marketing services, push forward socialized services for the entire process of agricultural production, help small peasants move onto the track of modern development. Nurture different kinds of specialized marketing services, push forward socialized services for agricultural production, help small peasants save on costs and improve productivity. Develop multiple kinds of associations and cooperatives, raise the level of small peasant organization. . . . Develop connections between agriculture and supermarkets, between agriculture and co-ops, help small peasants to link up with the market. (Zhongyang yihao wenjian, 2018: section 3, paragraph 5)

Earlier, the belief in economies of scale was so complete that China, in its English-language publications, even ceased using the term "peasant," substituting for it instead the word "farmer" borrowed from the United States, causing many people to overlook completely the fundamental differences between Chinese agriculture and that of the developed Western countries, completely ignoring the vastly different traditions and realities of the two, including their need for very different paths of development as well as prospective visions.

To be sure, the above had much to do with concerns of "face," but it tells also about deeper realities, namely, of how much thoughts about the basic realities of rural China had been influenced by the West's, especially England's and America's, agricultural development experience, discourse, and theory, causing people to simply stuff China's small peasant agriculture into the development model based on economies of scale. (In 2005, the largest 2 percent of American farms accounted for 50 percent of the nation's total agricultural output, the largest 9 percent for 73 percent [Huang Zongzhi, 2018: 152].) Whether in Western classical liberal economic theory or

classical Marxist economic theory, the belief in capitalist development, including its dogma of the economies of scale, and the presumption that the small peasant economy must disappear with “modernization” were so very deeply rooted as to cause even China itself to allow them to shape and dominate its own thinking about agriculture and the small peasant economy.

In the 2019 Number One Document, we find the addition of new thoughts about how to link up small peasant households for “vertical integration” with the big market through co-ops and new kinds of logistics:

Support the development of the initial processing of farm products by family farms and peasant co-operatives, support finer processing by county-level entities, develop groups of specialized villages and towns that are strong in the processing of agricultural products. Build wholesale markets that unify agricultural production areas, processing areas, and selling places; strengthen logistical networks and build networks with refrigeration services. (Zhongyang yihao wenjian, 2019: section 4, paragraph 2)

And then, the document adopted the language below in its conclusion to highlight peasant subjectivity:

Develop the subjectivity of peasants. Strengthen the development of systems and institutions, stimulative policies, educational guidance, make the activation of peasants, organizing of peasants, and serving the peasants permeate the entire process of revitalizing the countryside, give full respect to the wishes of the rural people, promote the spirit of self-reliance and earnest effort, stimulate and mobilize the activism of the peasant masses. Develop the stimulative effects of government investments. (Zhongyang yihao wenjian, 2019: section 8, paragraph 4)

In 2020, the building of refrigeration-chains for fresh produce and the role to be played by peasant co-ops were highlighted:

Begin the work of setting up refrigeration chains for the logistical movement of produce. Strengthen systematic plans for unified refrigeration chains, establish the framework and standards for them. Arrange for budgeted central-level investments, support the development of core bases for refrigerated chains. The government will support the family farms, the peasant co-ops, the supply and sale co-ops, express mail delivery businesses. (Zhongyang yihao wenjian, 2020: section 3, paragraph 16 [of the complete document])

In 2021, the building of new logistical systems was highlighted again, this time including the use of information technology:

Speed up and complete well logistical systems at the three levels of village, township, and county, transform and elevate the infrastructure for express delivery of produce, push forward the use of e-commerce in villages and in the movement of agricultural goods from village to city, push forward the interlinking of production and consumption between village and city, update village durable consumer goods. Speed up the construction of logistical systems for refrigerated preservation of produce. (Zhongyang yihao wenjian, 2021: section 4, paragraph 18 [of the complete document])

In 2022, the document highlighted once more “vegetable basket” agriculture (much the same as what I have termed the “new agriculture”):

Ensure the supply of fresh vegetables. Strengthen the system of having municipal mayors bear responsibility for “vegetable baskets.” . . . Stabilize the vegetable plots for medium and large-sized cities. (Zhongyang yihao wenjian, 2022: section 1, paragraph 3)

And then, in 2023, the document once again highlighted the need for the logistical linking up of small peasants and peasant co-ops with the big market:

Strengthen and enlarge the logistical services for agricultural produce. Implement the elevating of processing of agricultural produce, support the family farms, the peasant co-operatives and the small and medium-sized enterprises for primary processing of agricultural products. (Zhongyang yihao wenjian, 2023: section 5, paragraph 17 [of the complete document])

On the basis of the above, we can say that, since 2018, the Central’s Number One Documents have pretty much incorporated the basic content of the “vertical integration” theory and ideal of Chayanov, as well as the East Asian co-op experience, into its visions, explicitly calling for the construction of co-op-based logistical systems that are different from both the classical capitalist and the planned economy systems. They have also added explicitly the call for peasant community-based co-ops that were not present in Chayanov’s vision but were central to the East Asian experience. This does not mean the complete discarding of earlier efforts to develop “dragon head enterprises,” relatively larger “family farms,” and such, but rather that the emphasis is now gradually moving toward the “new agriculture” of small peasants, especially their “infrastructural agriculture” of tented (and hothouse) “new agriculture,” and co-ops based on peasant communities for “vertical integration” logistics in agriculture.

What is still unclear and undecided is just how to deal with the property rights of small peasants and the village community. One approach is to take

what have been customary collective property rights of the village—such as uncultivated land, forest land, lake or river surfaces, hills, and the like—and separate them out from “contracted” 承包 cultivated land, making clear that they belong to the village community, thereby to lend it legal property-owning rights and resources (Huang Zongzhi, 2021). Another approach is to let even contracted land (that nominally belongs to the village collective, but is actually under the control of the state) become to some degree property that can be used as security for the village to raise capital. To be sure, many such would-be borrowers are capitalist entities that have little concern for benefits to peasants, but are interested in the gains that can come with the conversion of such land into nonfarming land. But, at the same time, there are those who are truly concerned about peasant rights and interests, and their access to capital, for the purpose of closing the existing wide gap separating city and countryside and raising the standard of living of the peasants (Yang Tuan, 2022; Tong Zhihui, 2022). My own inclination would be to dedicate such capital to help the small peasants’ co-ops integrate vertically with the big market.

Here we need to add the observation that classical Marxism, despite its fundamental and deep criticism of capitalism and its laying bare of the greed of capitalism and its exploitation of laborers, has not questioned the dogma of economies of scale, nor questioned the inevitability of the rise of capitalism, and thereby has in fact contributed to the dogma of “the bigger the better.” In China today, under the combined influence of Marxist and classical-liberal doctrine, few people can grasp the ideas and ideals of Chayanov to seek for peasant economies a development path that is neither capitalist nor Marxist. In reality, what China needs is a path, theory, and prospective vision that is different from both of those two classical traditions.

Conclusion and Prospective Thoughts

Of course, we need to see that Chayanov’s most important theories and prospective visions of “differential optimums” and “vertical integration” could not help but have been shaped deeply by the realities of Russia/Soviet Union that were very different from those of China and also by unforeseeable new realities, new problems, and new possibilities that emerged after the 1920s. In truth, Chayanov’s two theories and visions help us not only to understand the realities that China faces today but also to see their limitations, especially the blind spots with regard to the village communities of the East Asian peasant societies and new phenomena such as China’s recent “new agriculture revolution” and the almost surprising East Asian model that have been both illustrations of and expansions of his ideas. Even so, Chayanov’s two theories

of “differential optimums” and “vertical integration” have remained today, a century later, basic starting points and essential insights on peasant economy that cannot be circumvented.²

We can see in the developments of the peasant economy during the past few decades in China new phenomena illustrating the theory of “differential optimums” that Chayanov could not have foreseen, especially the “labor and capital dual-intensifying” “new agriculture,” most notably of the 1-, 3-, and 5-mu “new agriculture” of tented vegetable farming, a phenomenon that we might term a model of modern development of the peasant economy without the economies of scale.

We can also see considerable numbers of “specialized co-ops” 专业合作社 in China since 2007 that accord partly with his vision but mostly not. They were intended to be copies of American specialty co-ops, but those in fact do not accord with Chinese realities. In the United States, though originally intended to serve the family farms, co-ops in fact quickly came under the control of capital and became, in reality, capitalist enterprises. In China, which intended to copy the American model, many became in fact hollow shells or else merely entities created by commercial capital to avoid taxes. Only a small minority became real co-ops that served small peasants. The “fake” co-ops came into being mainly because of past policies that tried unrealistically to follow the American model without regard for the basic realities of Chinese small peasant village communities (Huang, 2017: esp. 508-15).

China needs henceforth to truly anchor its peasant co-ops in the small natural village communities and their close personal relations that distinguish China’s and “East Asia’s” peasant economy and society from others. It needs in addition, also along the lines of the “East Asian” experience, service-oriented wholesale markets set up by the government to set prices and standards for farm produce and to join with the village co-ops to serve the small peasants. That would accord with the theoretical visions of “differential optimums” and “vertical integration” and what they require in the way of infrastructural logistical systems for agriculture products, most especially for fresh produce that requires refrigerated chains to minimize wastage, and not the present-day system in which the majority of wholesale markets remain government entities that were developed for profit and in which the markets do not have the necessary infrastructure for refrigeration of produce.

As we have seen above, since 2018 China has moved steadily in the direction of the “East Asian model.” It is the direction and path of the past few years that can truly build a modern agricultural system with “special Chinese characteristics.” The goal is the modernization of the “three peasant” 三农 entities of peasant agriculture 农业, peasant villages 农村, and peasant citizens 农民, without the great gaps between town and country 城乡差别 that

have for so long afflicted China. The goal is and should be for peasants and ruralities to truly become the basic social and economic foundation of a new China that would accord with the insights and visions of the theories of “differential optimums” and “vertical integration.”

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Notes

1. Wang Dongbin’s translation of chapter 2 of the book has been circulated online (Qiyanuofu, 2017), but relatively few people are acquainted with it.
2. Chayanov was executed by firing squad on October 3, 1937, but his influence has remained through many debates to date, perhaps most conspicuously in the two major global peasant studies journals. *The Journal of Peasant Studies* is avowedly Chayanovian as well as Marxist, and the *Journal of Agrarian Change*, which split off from the former, is predominantly Marxist-Leninist.

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Philip C. C. Huang is completing the writing, proofreading, and rechecking of his thirteen-volume “collected works,” in Chinese, from the Guangxi Shifan Daxue Chubanshe. First are four volumes on Chinese justice from the Qing to the present and four volumes on the Chinese peasant economy from the Ming-Qing to the present. There is a separate volume on the rise of the “informal economy” (i.e., without the protections and benefits under the formal economy of the past) in China, now accounting for 75 percent of all of the urban-employed. There are three theoretical-methodological volumes from his writings in the past twenty years, separately on “experience and theory,” “practice and theory,” and “the social science of practice.” There is also a fourth volume, on “the dyadic unity of state and society.” Six of the above volumes have been published; hopefully, all volumes will be out by 2024.